TATA POWER

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Connectivity of Roof-top Solar (RTS PV) System with Distribution Network

Guidelines and Procedure for Net Metering

Background:

Maharashtra Electricity Regulatory Commission has published Net Metering for Roof-top Solar Photo Voltaic (RTS PV) Systems Regulations, 2015. These regulations will govern the general conditions, technical arrangements, commercial arrangements and other terms and conditions for net metering of the RTS PV Systems. These Regulations shall extend to the whole of the State of Maharashtra. A few important points from these Regulations are summarized below for convenience of the consumers. For detailed information, the consumer is requested to refer to the Regulations available on the MERC Website: www.merc.gov.in

Eligibility of consumers:

A consumer of electricity in the area of supply of Utility who uses or intends to use a Solar Photo Voltaic ('PV') generating System having a capacity less than 1 MW, installed on a roof-top or any other mounting structure in his premises, to meet all or part of his own electricity requirement, including a Consumer catering to a common load such as a Housing Society, is eligible to benefit from these Regulations. Such RTS PV system may be owned and/or operated by such consumer, or by a third party leasing such system to consumer. Net Metering arrangement shall be permitted by Tata Power on a non-discriminatory and 'first come, first served' basis to the eligible consumers.

The capacity of the RTS PV systems to be connected at the eligible consumer's premises shall not exceed his Contract Demand (in KVA) or Sanctioned load (in kW). Cumulative Capacity of all RTS PV systems under Net Metering Arrangements connected to a particular Distribution Transformer of the Licensee shall not exceed 40% of its rated capacity.

LT consumers directly connected to Tata Power's network can check available Distribution Transformer capacity online on Tata Power web-site. For changeover consumers connected on wires licensee's network, the online system is not available for checking available Distribution Transformer capacity, such applications will be directly processed with the wires licensee.

Rooftop Solar PV System:

Rooftop Solar Photo Voltaic System (RTS PV) means the Solar Photo Voltaic power System installed on a Consumer's premises, and owned and/or operated by such Consumer or by a third party, that uses sunlight for direct conversion into electricity through Photo Voltaic technology. It generates electricity. It is NOT solar water heating system.

Net Metering Arrangement:

Net Meter means an energy meter as defined in the Electricity Supply Code which is also capable of recording both the import and export of electricity.

"Net Metering Arrangement" means an arrangement under which a Roof-top Solar PV System with Net Meter installed at an Eligible Consumer's premises delivers surplus electricity, if any, to the Distribution Licensee after setting off the quantum of electricity supplied by such Licensee during the applicable Billing Period.

Role of a utility:

A Distribution Licensee shall permit Net Metering Arrangement on a nondiscriminatory and 'first come, first served' basis to Eligible Consumers who have installed or intend to install a Roof-top Solar PV System connected to the Network of such Distribution Licensee . (Please note that a utility's role is limited to providing connectivity to the distribution network after installing Net Meter and follow the commercial arrangement outlined in this document. A utility will not install solar system for consumer. Consumer will have his own consultant, supplier and contractor. Consumer will be solely responsible for planning, design, construction, reliability, protection and safe operation of the Roof-top Solar PV System as per the applicable regulations and statutory provisions.)

Role of a consumer:

The Consumer needs to apply to the Distribution Licensee for connectivity of the Roof-top Solar PV System with the Distribution Network along with a registration fee of Rs. 500 (five hundred) and Rs. 1,000 (one thousand) for Consumers with Sanctioned Load or Contract Demand, as the case may be, upto and above 5 kW, respectively,

The Consumer shall be responsible for the safe operation, maintenance and rectification of any defect in the Roof-top Solar PV System up to the point of Net Meter. The Consumer shall obtain any statutory approvals and clearances that may be required, such as from the Electrical Inspector or the municipal or other authorities, before connecting the Roof-top Solar PV System to the distribution Network.

The equipment connected to the Licensee's Distribution System shall be compliant with relevant International (IEEE/IEC) or Indian Standards (BIS), as the case may be, and the installation of electrical equipment shall comply with the requirements specified by the Central Electricity Authority regarding safety and electricity supply. The inter-connection of the Roof-top Solar PV System with distribution network shall conform to the specifications, standards and other provisions as specified in the regulations provided in Annexure-1. Similarly, the safety guidelines that need to be scrupulously followed by the consumer are elaborated in Annexure-2.

Net Metering Connection Agreement:

The Distribution Licensee and the Consumer shall enter into a Net Metering Connection Agreement (for 20 years period) after approval of connectivity of the Roof-top Solar PV System with the distribution Network but before the start of actual generation from the System. Model Connection agreement is available elsewhere on this website.

Commercial Arrangement:

- The accounting of electricity exported and imported by the Eligible Consumer shall become effective from the date of connectivity of the Roof-top Solar PV System with the distribution Network.
- For each Billing Period, the Distribution Licensee shall show separately :
  - the quantum of electricity Units exported by the Eligible Consumer ;
  - the quantum of electricity Units imported by the Eligible Consumer ;
  - the net quantum of electricity Units billed for payment by the Eligible Consumer;
  - the net quantum of electricity Units carried over to the next Billing Period .
- if the quantum of electricity exported exceeds the quantum imported during the Billing Period, the excess quantum shall be carried forward to the next Billing Period as credited Units of electricity;
- if the quantum of electricity Units imported by the Eligible Consumer during any Billing Period exceeds the quantum exported, the Distribution Licensee shall raise its invoice for the net electricity consumption after adjusting the credited Units.
- The unadjusted net credited Units of electricity as at the end of each financial year shall be purchased by the Distribution Licensee at its Average Cost of Power Purchase
- At the beginning of each Settlement Period, the cumulative quantum of injected electricity carried forward will be re-set to zero.
- In case the Eligible Consumer is within the ambit of ToD tariff, the electricity consumption in any time block, i.e. peak hours, off-peak hours, etc., shall be first compensated with the quantum of electricity injected in the same time block. Any excess injection over and above the consumption in any other time block in a Billing Cycle shall be accounted as if the excess injection had occurred during off-peak hours.

Procedure for Connectivity of Roof-top Solar PV System with Distribution Network:

- An eligible consumer will download and submit the application form along with the applicable documents. The application form enlists the documents that need to be attached with it. Online Application facility is also been provided on Tata Power web-site.
- Tata Power shall register the application and acknowledge the receipt or intimate about any deficiency or incompleteness. If the application form and documents are checked and found complete and satisfactory, the consumer will be advised to pay the applicable fees
- Tata Power shall conduct a technical feasibility study. If case of deficiencies, Tata Power may reject the application after serving a notice for rectification.
- For technically feasible applications, Tata Power will convey its approval to the applicant for installing the RTS PV System. The approval letter will also contain the technical standards applicable to the RTS PV equipment and other technical requirements for inter-connection and safety.
- Applicant shall submit the work completion report to Tata Power in the prescribed format, along with the applicable documents, within the validity period of the approval. He will also submit a request for testing and commissioning of the RTS System.
- Tata Power will complete the testing and commissioning of the RTS System. It will install the Net Metering equipment and synchronize the RTS PV System thereafter.
- A Net Metering Connection Agreement will be signed by the eligible consumer and Tata Power after the RTS is installed but before its synchronization with Tata Power's Distribution Network.
- For changeover consumers connected to the network of other wires licensee, the Primary site visit and Testing and commissioning will be carried out jointly by both the licensees. If any concerns notified by the wires licensee, the same will be communicated to the consumer and the consumer will be required to carry out necessary actions.

Note: The above guidelines are only for general reference. The guidelines may be revised as and when necessary. Consumers are advised to refer MERC/ CEA regulations for specific details.

For any queries, consumer may write to solarnetmetering@tatapower.com

Annexure -1

Applicable Regulations for Interconnection of the RTS PV System with Distribution Network

The inter-connection of the Roof-top Solar PV System with Distribution Network shall conform to the specifications, standards and other provisions specified in specified in

- MERC (Net Metering for Roof-top Solar Photo Voltaic Systems) Regulations, 2015.
- Practice directions under MERC (Net Metering for Roof-top Solar Photo Voltaic Systems) Regulations, 2015
- CEA (Technical Standard for Connectivity of the Distributed Generation Resources) Regulations, 2013,
- CEA (Measures relating to Safety and Electric Supply), Regulations, 2010
- CEA (Installation and Operation of Meters) Regulations 2006
- Maharashtra Electricity Regulatory Commission (State Grid Code) Regulations, 2006, or as may be specified in future.

Annexure -2

Safety Guidelines that need to be followed by the consumer

The following safety guidelines/provisions should be scrupulously followed by the consumer:

- If the consumer opts for the RTS PV connectivity with a battery back-up, the inverter shall have a separate back-up wiring to prevent the battery/ decentralized generation (DG) power from flowing into the grid in the absence of grid supply, and that an automatic as well as manual isolation switch shall also be provided.
- Consumer shall provide appropriate protection for islanding of the Rooftop Solar PV System from the Network of the Distribution Licensee in the event of grid or supply failure.
- The Distribution Licensee shall have the right to disconnect the Roof-top Solar PV System from its Network at any time in the event of any threat or perception of threat of accident or damage from such System to its distribution system so as to avoid any accident or damage to it.
- The equipment connected to the Licensee's Distribution System shall be compliant with relevant International (IEEE/IEC) or Indian Standards (BIS), as the case may be, and the installation of electrical equipment shall comply with the requirements specified by the Central Electricity Authority regarding safety and electricity supply.
- The design, installation, maintenance and operation of the Roof-top Solar PV System shall be undertaken in a manner conducive to the safety of the Roof-top Solar PV System as well as the Licensee's Network.
- If, at any time, the Licensee determines that the Eligible Consumer's Roof-top Solar PV System is causing or may cause damage to and/or results in the Licensee's other consumers or its assets, the Consumer shall disconnect the Roof-top Solar PV System from the distribution Network upon direction from the Licensee, and shall undertake corrective measures on his own expense prior to re-connection.
- A utility shall not be responsible for any accident resulting in injury to human beings or animals or damage to property that may occur due to back- feeding from the Roof-top Solar PV System when the grid supply is off. Tata Power may disconnect the installation at any time to in the event of such exigencies to prevent the accident.