

MERC's Policy on Net Metering for Rooftop Solar Power Generation Systems

Energetica India studies the net-metering policy from Maharashtra Electricity Regulatory Commission (MERC) and speaks to industry expert Mr. Navratan Katariya, Solar Energy Consultant on his opinion

To catch up with the rest of India in Solar Policy, The Maharashtra Electricity Regulatory Commission (MERC) has eventually released draft policy for allowing net metering for rooftop solar power generation systems. With the said provisions in the guidelines, a person can install Solar PV units to generate power at home, offices and even factories and get net metering so as to connect with the grid.

The net metering of smaller units is aligned with the state's new renewable energy policy. The state has set a target of

11,110 MW of renewable power by the year 2019, out of which 7,500 MW will be solar and rest through cogeneration, hydel and biomass. The MERC has also made it mandatory for distribution companies to meet a portion of the necessity through renewable sources.

The policy states that-

General Conditions of Net Metering arrangement

Net Metering agreement shall be endorsed by the Distribution Licensee on a non-discriminatory and 'first come, first serve' ba-

sis to the Eligible Consumer who intends to install a Rooftop Solar system connected to the network of Distribution Licensee;

Capacity limits at Distribution Transformer level

The Distribution Licensee shall allow Net Metering arrangement to eligible consumers so long as the cumulative capacity utilized at a particular distribution transformer does not exceed 15% of the rated capacity of that distribution transformer; provided that the distribution licensee may allow net metering connectivity exceeding



Energetica India speaks to Mr. Navratan Katariya, Solar Energy Consultant to understand more on the policy

ENERGETICA INDIA: What is your view on Maharashtra's Net Metering Draft Policy?

NAVRATAN KATARIYA: Technical: Capacity Limit The limit of 15% needs to be relooked considering e.g. Rajasthan has 30% (and 80% of sanctioned load for each rooftop). The capacity of solar plant should not be limited to 30% of distribution transformer, it is the exported power be cumulatively limited to 30%. There is a difference between the two. Here is an example (I am first considering 30% as the limit).

If 5 factories on a single distribution transformer (of say 800KVA) have a 100KVA sanctioned load each and three of them put 80KW of SPV each, we shall pump 240KW into the transformer on a holiday with nil captive consumption.

Consider a case when we allow 5 factories to install 80KW each (after all their interest primarily is in captive usage), and on each of them, we put a power export limited to 30%, we shall have a win-win situation. Note that one can control so-

15% of such rated capacity based on a detailed load study carried out by it.

The Distribution Licensee shall provide annually, on its website and to the Commission, information regarding the distribution transformer level capacity available for connecting Rooftop Solar system under Net Metering arrangements.

Technical Arrangements

Eligible Consumer and Individual Project Capacity

- All the Eligible Consumers in the area of supply of the Distribution Licensee may participate in the Rooftop Solar Net Metering arrangement.
- The maximum Rooftop Solar system capacity to be installed at any eligible consumer's premises shall be governed by the available capacity of the service line connections of the Eligible Consumer's premises and the cumulative capacity utilized at particular distribution transformer ; provided that the capacity of the Rooftop Solar system to be connected at Eligible Consumer's premises shall not exceed his Contract Demand or connected load of the Eligible Consumer
- The capacity limits for the connectivity of Rooftop Solar system to the network of Distribution Licensee under these Regulations shall be as defined in Regulation 5.3 of the MERC (Stand-

THE CAPACITY LIMITS FOR THE CONNECTIVITY OF ROOFTOP SOLAR SYSTEM TO THE NETWORK

Sr. No.	Voltage level	Threshold limit of Rooftop Solar PV system
1	230/240 V (1 Φ)	Less than 8 kW/40 A
2	400/415 V (3 Φ)	Less than 80kW/100 kVA Less than 150kW/187 kVA (Municipal Corporation areas)
3	11kV and above	Up to 1000 kVA Up to 1000 kVA (Mumbai Metropolitan Region)

ards of Performance of Distribution Licensee, Period of giving Supply and Determination of Compensation) Regulations, 2014, which are as follows:

Interconnection with the Distribution Network / Grid, Standards and Safety

- The Eligible Consumer may install Rooftop Solar system with or without battery back- up; Provided that, if the Eligible Consumer prefers connectivity with 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, both automatic and manual isolation switch shall also be provided.
- The Eligible Consumer shall be responsible for the safe operation, maintenance and rectification of any defect of the Solar Rooftop system upto the point of Net Meter, beyond which point the responsibility of safe opera-

tion, maintenance and rectification of any defect in the system, including the Net Meter, shall rest with the concerned Distribution Licensee.

Metering Arrangement

- Net metering arrangement shall have two meters including one bi-directional meter which is also known as Net Meter. The Net Meter will be single phase or three phase as per the requirement. All the meters shall adhere to the Standards as specified in CEA (Installation and Operation of meters) Regulations 2006, and subsequent amendments thereof.
- The Net Meter and all other meters in the premises of the Eligible Consumer shall be procured and installed by the Distribution Licensee. The Distribution Licensee shall be responsible for specifications, supply, installation, testing and maintenance of the metering arrangement.

lar inverters with feedback from the bi-directional meter with a communication option. A billing level financial penalty on any excess export beyond 30% may be devised (like Power Factor, late payments) to enforce this. The meter logs the peak load in export directions also. Please note, consumers have benefited from 240 to 400KW capacity enhancement in the above case. This solar benefit will further increase if we considered 15% as the limit.

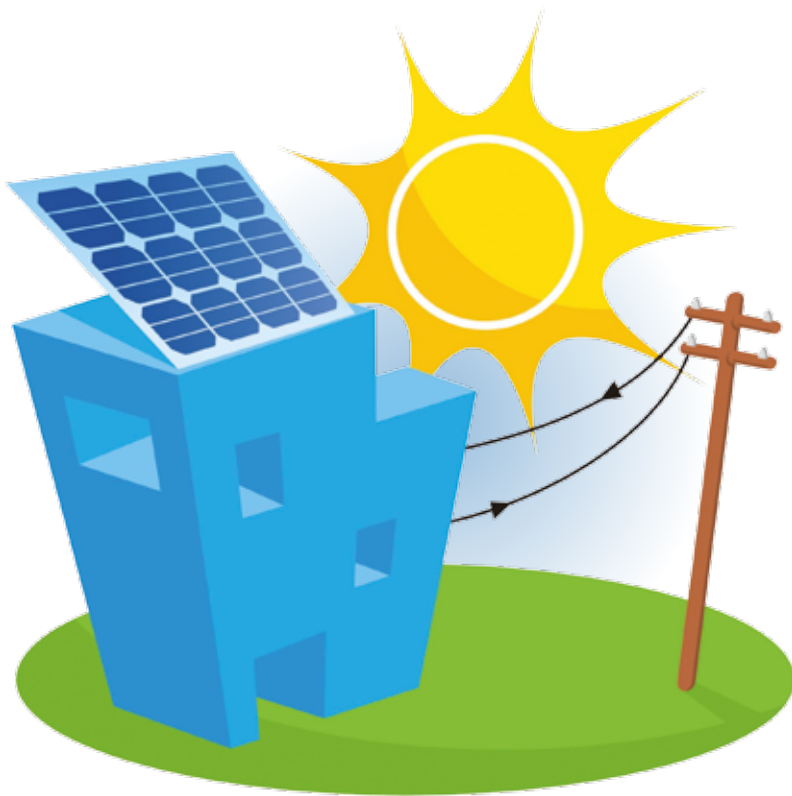
ENERGETICA INDIA: What is your opinion the settlement period of 12 months? What will be the pros / cons of decreasing this period to 3 or 6 months? Will the long

tenure of 12 months increase the need for working capital on solar systems?

NAVRATAN KATARIYA: I think there is a worry of loss of revenue and banking forcing distribution network capacity issues. A longer settlement period pushes, primarily a captive usage model and not export for revenue which in my opinion is not correct. I think it is ok to start with 12 month period and review it later. This is only a billing issue. Why hold the policy with such an unknown (loss of business) threat to DISCOMs and generators at this stage?

ENERGETICA INDIA: What kind of tariff are we expecting for power exported to the grid?

NAVRATAN KATARIYA: On the same ground as above para 2, DISCOM should pay their peak power purchase rate during the day time, and I shall like to propose some discount of say 10%. Since these peak power purchase costs vary from month to month and DISCOMS record and know it well, this tariff rate should vary depending on the month of the year. This is definitely more than the average pooled cost which does not interest anyone. It is actually a defeating factor to the promotion of solar energy. The variable discounted peak power purchase rate linked tariff should be a win-win situation rather than having a year long fixed rate and commercial interests raising heartburns on either side and thus blocking the policy ❄



- The location of Net Meter shall be at the point of interconnection which shall be ascertained by the Distribution Licensee. The Distribution Licensee shall also install another meter known as solar generation meter at appropriate location to measure the total units generated from Rooftop Solar system.

Procedure for Application and Registration

- The Eligible Consumer shall submit the application to the concerned Distribution Licensee for connectivity of Rooftop Solar system with the distribution network of the concerned Distribution Licensee in the prescribed format along with registration fee of Rs. 1000/-. The concerned Distribution Licensee shall acknowledge the receipt of application.

Net metering connection agreement

- The Distribution Licensee and Eligible Consumer shall enter into a Net metering connection agreement after providing approval for connectivity of Rooftop Solar system with the distribution network under these Regulations but before starting the actual generation from the Solar Roof top system installed by the Eligible Consumer.
- The Eligible Consumer may terminate the agreement at any time by giving

30 days prior written notice to the Distribution Licensee. The Distribution Licensee may terminate the agreement with 30 days prior written notice, if Eligible Consumer breaches any term of the agreement and does not remedy the breach within 30 days of receiving written notice from the Distribution Licensee of the breach or any other valid reason to be recorded in writing.

- Eligible Consumer, upon termination of the agreement, shall disconnect forthwith its Rooftop Solar PV system from Distribution Licensee's network.

Commercial Arrangement

Energy Accounting and Settlement

- The accounting of electricity exported and imported by the Eligible Consumer shall become effective from the date of connectivity of Rooftop Solar System with the distribution network under these Regulations.
- For each billing period, the Distribution Licensee shall show separately; a) the quantum of units of electricity exported by Eligible Consumer, b) the quantum of units of electricity imported by Eligible Consumer, c) the Net units of electricity billed for payment to the Eligible Consumer and d) the Net units of

electricity carried over to the next billing period.

- Provided that at the end of each financial year, unadjusted net credited units of electricity limited to 10% of total units generated during the year by the Eligible Consumer, shall be purchased by the Distribution Licensee at the Commission's approved Average cost of Power Purchase of the Distribution Licensee for respective year.
- Provided that any unadjusted net credited units of electricity above 10% of total units generated during the year by the Eligible Consumer shall be treated as unwanted / inadvertent injunction and no payment for the same shall be made by the Distribution Licensee.
- Provided that at the beginning of each settlement period, cumulative carried over injected electricity will be reset to zero.

Solar Renewable Purchase Obligation

- The quantum of electricity consumed by the Eligible Consumer, who is not defined as Obligated Entity, from the Rooftop Solar system under net metering arrangement shall qualify towards compliance of Solar Renewable Purchase Obligation (Solar RPO) for the concerned Distribution Licensee.
- The unadjusted surplus units of solar energy purchased by Distribution Licensee shall be considered as eligible renewable energy and the Distribution Licensee would be able to meet its Solar Renewable Purchase Obligations through purchase of such surplus units of solar energy.

Eligibility to Participate under Renewable Energy Certificate (REC) Mechanism

- Eligible Consumer under net metering arrangement shall not be eligible to participate under REC mechanism

Subsidy or incentives of the Central / State Government

- The Eligible Consumer can avail subsidy or incentives if offered by the Central / State Government on the capital cost of the Rooftop Solar PV system. Maharashtra Energy Development Agency (MEDA) will be the Nodal Agency for processing such subsidy or incentives of the Central / State Government ◀◀