

Prayas (Energy Group)'s comments and suggestions on Draft TNERC (Grid Interactive Solar PV Energy Generating Systems) Regulations, 2024

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In light of the recent developments in the sector in conjunction with the changes introduced through the Electricity (Rights of Consumers) Amendment Rules, 2024¹, Tamil Nadu Electricity Regulatory Commission (TNERC) has proposed new regulations for Grid Interactive Solar PV Systems (GISS). We welcome the publication of these draft regulations which has incorporated the following forward-looking frameworks:

1. Virtual Net-Metering (VNM) arrangement for distribution licensees (DISCOM) and government/local bodies.
2. Group Net-Metering (GNM) arrangement for domestic consumers.
3. Revised cumulative GISS contract demand limit up to the rated capacity of the Distribution / Power transformer.
4. Exemption for the requirement of feasibility study for GISS with capacity upto 10kW.
5. Reduction in the timelines of the steps involved in the commissioning of GISS by consumers.

Considering this, Prayas (Energy Group)'s comments and suggestions highlight areas where more clarity is needed to enable smooth rollout of the regulations. In addition, we suggest certain changes towards ensuring a balanced framework for all stakeholders while facilitating the growth of the grid-interactive Renewable Energy (RE) sector.

1. Applicability of Regulations

1.1. Extend applicability to all grid-interactive RE systems

The applicability of these regulations should extend to all grid-interactive RE systems so as to facilitate the emergence of all consumer level RE technologies at commercial scale, as is the case in Maharashtra. A similar definition as used in MERC could be adopted here.

The "MERC (Grid Interactive Rooftop Renewable Energy Generating Systems) Regulations, 2019" define renewable energy generating systems as *"the Renewable Energy power system with or without energy storage installed on a Consumer's premises, and owned and/or operated by such Consumer or by a Distribution Licensee or a third party, that uses Renewable Energy for conversion into electricity."*

1.2. Harmonisation of pre-existing contracts with new regulations

Regulation 22.3 of the draft regulations permits consumers/generators under an existing agreement or contract to avail *"the concessions and exemptions and other terms and conditions, as stipulated under the new Regulation 2024."* While this is a good practice, it is important to clarify that no new commercial conditions will be attached to existing

¹https://powermin.gov.in/sites/default/files/Electricity_Rights_of_Consumers_Amendment_Rules_2024_0.pdf

consumers after the notification of the 2024 regulations. Further, metering arrangement will continue as per existing contracts until they expire. A provision similar to regulation 8 of draft TNERC (Terms and Conditions for Green Energy Open Access) Regulations, 2024 could be adopted here.

1.3. Clarify provisions for GISS capacity limits

Regulation 4.4 permits eligible consumers to install GISS with a minimum capacity of 150 kW upto 999 kW under the gross-metering arrangement. Similarly, regulation 4.5 permits eligible consumers to install GISS with a minimum capacity of 5 kW without an upper cap under the virtual net-metering systems. However, regulation 7.3 stipulates that *"The solar plant capacity under any category shall not exceed the sanctioned load/contracted demand."* The Commission should clarify the applicable capacity limits for GISS installed under the various metering arrangements.

2. Energy accounting framework and levy of banking charges

2.1. Definition of Banking

In section 6.5 of the draft regulations, "banked energy" and the levy "banking charges" is discussed. However, there is no explicit definition for "banking" in section 2 of the regulations. This could result in regulatory uncertainty and lead to litigation in the future. The regulations should define banking to ensure clarity and smooth implementation.

2.2. Applicability of banking charges

While banking charges (8% in kind) are levied on consumers under the virtual net-metering arrangement, the draft regulations extend free banking facility to all consumers under the net metering and group net metering arrangements. This arrangement is highly concessional and will make such arrangements lucrative for high use residential consumers. The additional costs of providing free banking will be borne by the DISCOM and ultimately passed through to other consumers.

We suggest that the banking charges should be levied on all consumers utilising the banking facility provided by the DISCOM, except on those individual consumers with connected load less than 10 kW.

2.3. Temporal granularity in the energy accounting framework for large consumers

Regulation 6.11.1 reads as follows:

"For the categories covered under ToD tariff, the electricity consumption in any time slot (peak hours, off-peak hours, normal hours etc.) shall be first compensated with the electricity generation in the similar time slot in the same billing cycle of the participating service connection(s). Peak hour generation can be adjusted to normal hour or half peak hour consumption. Any surplus generation/ over consumption in any time slot in a billing cycle shall be accounted as if the surplus generation/ energy credits occurred during the off peak time block. Excess consumption shall be charged at the tariff applicable as determined by the Commission from time to time."

We suggest that the above energy accounting framework be applicable to all systems whose installed capacity is above 10 kW up to 100 kW under any metering arrangement where such accounting would be needed. Further, for all systems above 100 kW under any metering arrangement, the energy accounting should take place on a 15-minute block wise basis. Any excess generation within each 15-minute block is banked for utilization by the consumer within the same 15-minute block of the day within the billing cycle. Any unutilised banked energy at the end the billing cycle will lapse.

This will ensure that the DISCOM does not bear the cost of providing banking to large consumers. It would also send the right price signals and incentivize large consumers to install GISS coupled with energy storage capabilities.

2.4. Technical capability and cost of installing meters

The meters installed by each consumer, i.e., up to 10 kW; 10 kW up to 100 kW; Above 100 kW should be capable of undertaking energy accounting in line with the framework outlined in section 2.3.

Regulation 5.5 could be amended to state that the cost of installing meters for systems only up to 3 kW will be borne by the DISCOM and for systems >3 kW, the consumers will bear the cost of metering. Further, the consumer will have the option of installing meter at his own cost if any dispute over method of computation of energy and assessment of demand arises.

In addition, suitable metering shall be adopted for consumers with connected load more than 100 kW, to ensure 15-min block data collection and energy accounting.

3. Virtual net-metering (VNM) Arrangement

We appreciate the introduction of the virtual net-metering arrangement. This will address the issue of timely recovery of dues while ensuring reliable supply of electricity for public services. However, we suggest certain changes to increase adoption and ensure clarity in implementation.

3.1. Eligibility criteria to avail VNM arrangement

Regulation 2.1.(ag) stipulates that

“Virtual Net Metering” means an arrangement whereby entire energy generated/injected from a GISS or Battery Energy Storage System (BESS) charged through Renewable Energy System, is exported to the grid from renewable energy meter / gross meter and the energy exported is either (i) adjusted in the total consumption of fully subsidized consumers or (ii) adjusted in more than one electricity connection(s) of participating consumers located within the same distribution licensee’s area of supply. Participating consumers are the consumers whose service connections are selected by the GISS consumer / generator / prosumer on his own option, for the purpose of adjustment of energy generated from such GISS.”

Similarly, Regulation 6.5 also stipulates that

“VNM is applicable to Distribution licensee and Government / local bodies for their buildings and also for the solar park/plant set up in their own/leased open land for the purpose of adjustment of energy against their own consumption or against the consumption of subsidized categories as the case may be.”

However, regulation 4.5 states that only *“Distribution licensee, Government/ local bodies are eligible for Virtual Net Metering.”*

The different provisions related to VNM are mentioned in multiple places in the proposed regulation, which add up to create confusion. The provisions mentioned above create two confusions at first place. One of them being who all are eligible to avail VNM arrangement: Government/ local bodies and/ or subsidised consumers. We suggest the Commission to clarify this.

Further clarification is needed on “subsidized consumers”. Regulation 2.1(ag) stipulates that the energy can be adjusted against the consumption of *“fully subsidized consumers”* only. However, regulation 6.5 states that the energy can be adjusted against the consumption of *“subsidized categories as the case may be”*. The Commission should clarify whether the provision of energy adjustment is restricted to fully subsidized consumers alone or extended to any subsidized consumer categories like LT IA (Domestic and Handlooms), LT IB (Huts consumers), etc.

3.2. Eligibility criteria to install/set-up VNM systems

Regulation 4.5 stipulates that *“The VNM can be a CAPEX model or RESCO model.”* and that *“Under RESCO model the land (either owned or leased) shall be provided by either by RESCO or by licensee/ government/ local body ...”*. However, Regulation 6.5 restricts the installation of a VNM system to the buildings or owned/leased open land of the DISCOM and government/local body.

These provisions are furthering uncertainty. Regulation 4.5 mentions option of providing land by RESCO and cost also being borne by RESCO. In that case, the project will have no involvement of Licensee and/ or Government or local bodies. This raises question whether such project shall be eligible for VNM arrangement, Hence, the Commission should clarify as to who is allowed to install a VNM system and under which ownership model.

3.3. Relaxation of “no pending arrears” condition for public bodies

Regulation 4.10 stipulates that *“Consumers/ prosumers / generators with pending arrears / outstanding due with the Distribution Licensee shall not be eligible for provisions under this regulation.”* This condition could be relaxed for virtual net metering arrangement for public bodies to enable increased uptake by public bodies. The detailed VNM framework suggested by Prayas (Energy Group) for public bodies can be referred [here](https://energy.prayasgroup.com/images/pdf/virtual_net_metering.pdf)².

3.4. Accounting of energy adjusted against consumption of subsidized categories

Regulation 6.5.4 stipulates that the energy consumption of subsidized categories would be adjusted on an annual basis. This adds an undue cost burden on the DISCOM since the

² https://energy.prayasgroup.com/images/pdf/virtual_net_metering.pdf

energy generated by GISS, energy consumption by fully subsidized consumers and cost of power procurement varies on monthly/seasonal basis. Therefore, any adjustment should be carried out on a monthly or seasonal basis.

The Commission should issue guidelines on how this energy adjustment under the VNM arrangement is to be carried out to ensure regulatory certainty

3.5. Compensation for unutilised banked energy and unadjusted units at the end of settlement period

Regulation 6.5.3 stipulates that *"The unutilized banked energy remaining at the end of control period shall be paid at the rate of 75% of the SECI / recent tender rate."*

For providing better clarity, this provision can be amended to as follows:

"The unutilized banked energy remaining at the end of control period shall be paid at the rate of 75% of the SECI / recent (last six month to one year) state solar tender rate, whichever is lower."

Similar changes should be incorporated in Regulation 6.5.8.

4. Behind The Meter (BTM) systems

4.1. Timelines for reporting/registering BTM systems.

Regulation 8.14 stipulates that *"Grid Connected Renewable Energy Generating Systems connected behind the Consumer's meter, and not opting for any metering mechanism set out in this regulation shall be allowed only after prior intimation to the respective Distribution Licensee..."*

We support the intent of this provision since the DISCOM might be unaware of the various generating systems connected to the grid behind the consumer's meter. However, the regulations should provide timelines for the registration of pre-existing, under construction and proposed projects at the time of the notification of these regulations. The timelines could be as follows:

- Existing BTM systems: 6 months from the date of notification of regulations.
- Under construction BTM systems: 3 months from the date of notification of regulations or date of commissioning of project, whichever is earlier.
- Newly proposed BTM systems: Prior to the onset of installing such systems

4.2. Levy of Network charges and standby charge

Regulation 10.1 does not explicitly stipulate that network charges are leviable on BTM systems. Since the cost of maintaining the distribution wires is currently partly built into the energy charge levied by the DISCOM, it becomes important to levy some form of additional charge on such BTM systems. For that reason, the regulations should explicitly stipulate the levy of network charges on such BTM systems.

Further, the DISCOM is responsible for providing supply for last resort to such consumers in the event of the failure of the BTM system or demand exceeding the power generated by the captive system. Therefore, an appropriate standby charge should be levied on BTM systems with capacity greater than 10kW. The Commission could adopt a similar standby

charge framework, which is currently levied by Maharashtra ERC (MERC). MERC has a four-tier standby charge³ for captive users as follows:

- 25% of applicable demand/fixed charges when standby capacity is not utilised.
- 100% of applicable demand/fixed charges when standby capacity is not used under planned or unplanned shutdown.
- 150% of applicable demand/fixed charges on excess demand.
- 200% of applicable demand/fixed charges for those who do not opt for standby arrangement.

5. Public reporting of Grid-interactive systems

Regulation 7.3 and Regulation 11.3 directs the DISCOM to make available critical information about Grid-interactive systems like,

- *"Cumulative solar energy system capacity connected and solar energy generated by each GISS at each distribution transformers and power transformers"*
- *"Distribution Transformer-wise, Power Transformer wise capacity available"*
- *"Cumulative capacity of the Renewable Energy Generating Systems installed under Net Metering / Net Feed-in / Gross Metering / GNM / VNM arrangements"*

This is a good step and is necessary for prosumers to know where systems can be installed and how much spare transformer capacity is available. In addition to the above points, the Commission should also direct the DISCOM to publish the following information would be useful for planning.

- a) Details of circle/feeder wise rooftop generation capacity.
- b) Circle-wise quantum of excess generation and payments made for the same.
- c) Number and capacity of BTM systems.
- d) Average time taken for processing an application in each circle.
- e) Number of DT's where capacity threshold has been reached.

³ As notified in [MERC Order 322 of 2019](#)