



**MAHARASHTRA ELECTRICITY REGULATORY COMMISSION**

**EXPLANATORY MEMORANDUM**

**ON**

**DRAFT MAHARASHTRA ELECTRICITY REGULATORY COMMISSION  
(GRID INTERACTIVE ROOFTOP RENEWABLE ENERGY  
GENERATING SYSTEMS) (SECOND AMENDMENT) REGULATIONS, 2024**

**May, 2024**

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# 1 Introduction

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## 1.1 Background

The Government of India (GoI) has set an ambitious target of becoming a carbon neutral nation by the year 2070. To supplement the aim, GoI has set a target to install Renewable energy (RE) capacity of 500 GW by 2030. To promote and facilitate installation of RE, Ministry of Power (MoP) has recently issued few Rules and Orders, to act as a catalyst in achieving the envisaged target.

MoP has notified The Electricity (Rights of Consumers) Rules, 2020 on 31 December 2020 and The Electricity (Rights of Consumers) Amendment Rules, 2021 on 28 June 2021. MoP has also sent a letter dated 13 September 2022 to all Electricity Regulatory Commissions (ERCs), advising the ERCs to make the Regulations consistent and in alignment with the above-said Rules. As a part of regulatory re-alignment exercise, the Commission has notified MERC (Grid Interactive Rooftop Renewable Energy Generating Systems) (First Amendment) Regulations, 2023 on 16 November 2023.

After notification of the First Amendment, on 22 February 2024 the Ministry of Power, Government of India has notified the Electricity (Rights of Consumers) Amendment Rules, 2024. These changes have been appropriately incorporated in the draft Maharashtra Electricity Regulatory Commission (Grid Interactive Rooftop Renewable Energy Generating Systems) (Second Amendment) Regulations, 2024.

**The rationale for the changes proposed in the MERC (Grid Interactive Rooftop Renewable Energy Generating Systems) Regulations, 2019 and its First Amendment, 2023 has been elaborated in this Explanatory Memorandum. Only the clauses where any addition/modification is proposed in the MERC (Grid Interactive Rooftop Renewable Energy Generating Systems) (Second Amendment) Regulations, 2024 have been discussed in this Explanatory Memorandum.**

The Commission while formulating the MERC (Grid Interactive Rooftop Renewable Energy Generating Systems) (Second Amendment) Regulations, 2024, has endeavoured to balance the interest of consumers and Distribution Licensees.

The Explanatory Memorandum is organised in the following Chapters:

**Chapter 1:** Introduction

**Chapter 2:** Enablement of Virtual Net Metering

**Chapter 3:** Electricity (Rights of Consumers) Amendment Rules, 2024

## 2 Enablement of Virtual Net Metering

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This Chapter of the Explanatory Memorandum elaborates the reasoning and justification for incorporating the changes related to provisions of Virtual Net Metering.

### 2.1 Background

While framing of MERC (Grid Interactive Rooftop Renewable Energy Generating Systems) (First Amendment) Regulations, 2023, the Commission received comments regarding introduction of Virtual Net Metering arrangement. The Commission in its Statement of Reasons (SoR) provided following rationale, for not allowing Virtual Net Metering arrangement:

“

#### ***3.2.2 Analysis and Commission's Decision***

*Virtual Net Metering is an arrangement whereby entire energy generated from a RE Project installed at consumer premise or any other location is injected through RE generation meter and the energy exported is adjusted in either one or more than one electricity service connection(s) of participating Consumer(s) located within the same Distribution Licensee's area of supply.*

*The Commission is of the view that Virtual Net Metering is akin to Third Party or Captive Open Access, and such consumers should opt for Green Open Access under the MERC (Distribution Open Access) Regulations, against payment of all applicable charges. Hence, the Commission has not introduced Virtual Net Metering in the State of Maharashtra.*

..”

After notification of above, it has been brought to the notice of the Commission that on account of non-availability of specific provisions under Net-Metering Regulations, consumers of multi-storied building are facing difficulties in installing rooftop solar in their common space and source energy generated from such common RE generation system to each flat. The Commission notes that similar difficulties may be faced in following cases also:

1. Urban residential consumers living in multi-story apartment without any roof rights are unable to invest in solar rooftop generation and derive benefits under conventional net metering schemes.

2. Typical residential consumers in housing societies with adequate shared space within the premises have no incentive to adopt rooftop solar, as they cannot avail net metering benefits because net metering schemes map one consumer to one point of generation.

The Commission also notes that Maharashtra is an urbanised State. The share of the urban population in Maharashtra is 45.2%, much higher than the national figure of 31.1%. There are (27) Municipal Corporation in Maharashtra and witnessing rapid vertical growth in recent past. Consumers located in multi-storied building or consumer not having adequate shadow free space are not able to get benefit of RE net-metering arrangement due to their physical location. Enabling such consumers to avail benefits of RE net-metering arrangement will boost the speed of adoption of RE in state of Maharashtra. Hence, the Commission through this draft amendment is enabling option of virtual net-metering to consumers.

## **2.2 Introduction of 4th and 5th proviso to Regulation 2.1 (j) of the Principal Regulations**

The MNRE on 22 February 2023 notified the Guiding/Helping Standard Operating Procedure (SOP) for Implementation of Virtual Net Metering and Group Net Metering Mechanism. Further, MoP vide its Office Memorandum dated 3 October 2022 has extended central financial assistance (CFA) available under Rooftop Solar (RTS) Programme Phase-II for solar systems installed under Virtual Net Metering (VNM) arrangement on same feeder.

During the E-Public Hearing held on 27 February 2024 in Case No. 3/SM/ 2024 (in the matter of Generic Renewable Energy Tariff for FY 2024-25 under MERC (Renewable Energy Tariff) Regulations, 2019), the Commission received suggestions on enablement of Virtual Net Metering arrangement in Maharashtra. In said suggestion the Commission ruled following:

***“Commission’s Ruling:***

...

*As far as enablement of virtual net metering is concerned, the Commission will initiate separate process for the same.”*

Accordingly, to facilitate Residential consumers to set-up Renewable Energy Generating System without restricting to own premises, the Commission is enabling setting-up of Renewable Energy Generating System at any location in area of supply of Distribution Licensees and sourcing energy generated from such system under virtual net metering arrangement. Further, provision has also been made to enable multiple Residential consumers to come together and set-up Renewable Energy Generating System at common location.

Regulation 2.1 (j) of the Principal Regulations defined Eligible Consumers. It is proposed to add 4<sup>th</sup> and 5<sup>th</sup> proviso (as highlighted below) to provide for virtual net metering and setting up on common Renewable Energy Generating System by consumers of same Tariff category:

*“ 2.1 (j) “**Eligible Consumer**” means a consumer of electricity in the area of supply of the Distribution Licensee who uses or intends to use a Renewable Energy Generating System, installed on a rooftop or any other mounting structure in his premises, to meet all or part or no part of his own electricity requirement, and includes a Consumer catering to a common load such as a Housing Society:*

*Provided that such Generating System may be owned and/or operated by such Consumer, or by a Distribution Licensee or third party leasing such System to the Consumer:*

*Provided further that in case of Net Metering Arrangement, the capacity of Renewable Energy Generating System shall be limited to 5 MW or Contract Demand/Sanction Load of consumer, whichever is lower:*

*Provided also that for all other arrangements, the capacity of Renewable Energy Generating System shall be limited to Contract Demand/Sanctioned Load of consumer:*

***Provided also that Residential consumer can setup Renewable Energy Generating System at any place located within same Distribution Licensee’s area of supply and source renewable energy generated from such plant under Virtual Net-Metering Arrangement:***

***Provided also that multiple Residential consumers including common connection of housing society can come together and set-up Renewable Energy Generating System at a common place under Virtual Net Metering arrangement subject to condition that total capacity of such Renewable Energy Generating system shall not exceed summation of capacity eligible to each participating consumer.***

### **2.3 Introduction of Regulation 2.1(z)(a) after Regulation 2.1(z) of the Principal Regulations:**

The following clause is proposed to be introduced in the MERC (Grid Interactive Rooftop Renewable Energy Generating Systems) (Second Amendment) Regulations, 2024, for defining the Virtual Net Metering:

*“2.1(z)(a) “Virtual Net Metering” means a modality whereby entire energy generated/injected from a Renewable Energy Generating System is exported to the grid from Renewable energy meter or gross meter and the energy exported is adjusted in either one or more than one participating Residential consumer(s) including common connection of housing society located within the same Distribution Licensee’s area of supply.”*

#### **2.4 Introduction of Regulation 4.4 after Regulation 4.3 of the Principal Regulations:**

As Renewable Generating System under virtual net-metering arrangement will be connected to the Grid and it should follow all applicable grid connectivity standards and procedure of scheduling. Hence, the following clause is proposed to be introduced in the MERC (Grid Interactive Rooftop Renewable Energy Generating Systems) (Second Amendment) Regulations, 2024:

*“4.4. Grid connectivity and scheduling of the Renewable Energy Generating System installed under virtual net-metering arrangement shall be governed by relevant Rules and Regulations.”*

#### **2.5 Introduction of Regulation 11.10 after Regulation 11.9 of the Principal Regulations:**

The clauses related to Commercial Settlement for Virtual Net Metering have been introduced as under:

##### ***“11.10 Virtual Net Metering– Energy Accounting and Settlement***

*(a) The energy generated from Renewable Energy Generating System shall be credited in the monthly electricity bill of each participating Residential consumer(s) including common connection of housing society as per the ratio of procurement from Renewable Energy Generating System indicated under the agreement entered by the consumer(s):*

*Provided that capacity of Renewable Energy Generating System becomes available to participating consumer based on such ratio shall not exceed capacity eligible for such consumer under net-metering arrangement:*

*Provided further that participating consumers shall have option to change the ratio of procurement once in financial year with as advance notice of two months.*

*(b) The electricity consumption in any time block (e.g., peak hours, off-peak hours, etc.) shall be first compensated with the electricity generation in the similar time blocks in the same billing cycle of the participating consumer(s). Any surplus generation over*

*consumption in any time block in a billing cycle shall be accounted as if the surplus generation/ Energy Credits occurred during the off-peak time block for Time of Day (TOD) Consumers and normal time block for Non-TOD Consumer.*

- (c) Where the units credited during any billing period of any participating consumer exceeds the import of units by that consumer, such surplus credited units shall be carried forward in the next billing period as energy credits for such participating consumer(s).*
- (d) For unadjusted net credited Units of electricity at the end of each financial year, the provisions of Clause 11.4 (c) will be applicable for each participating consumer.*
- (e) Applicability of Open Access Charges and losses for sourcing electricity from Renewable Energy Generating System is exempted till installed capacity of rooftop solar reaches 5000 MW in Maharashtra ”*

When Wires of the Licensee get used for sourcing power from third place, then open access charges are become applicable. But to encourage installation of Renewable Energy Generating System, the Commission has decided that no open access charges or losses shall be applicable for virtual net-metering arrangement till total rooftop solar installation capacity in Maharashtra reaches up to 5000 MW.

**2.6 Introduction of Clause 8.7 after clause 8.6 of Annexure-3 of the Principal Regulations:**

Because of introduction of the Virtual Net Metering arrangement as above, Annexure 3 of the Principal Regulations is proposed to be amended as under:

“

*8.7 (a) In case of Virtual Net Metering, the energy generated by the Renewable Energy Generating System shall be credited in the monthly electricity bill of each participating Residential consumer(s) including common connection of housing society as per the ratio of procurement as indicated below:*

<b>Sr. No.</b>	<b>Name of consumer (Starting with primary connection)</b>	<b>Consumer No.</b>	<b>Sharing Ratio (%)</b>

*(b) Participating consumers shall have option to change the ratio of procurement once in financial year with as advance notice of two months.*



- (c) *The electricity consumption in any time block (e.g., peak hours, off-peak hours, etc.) shall be first compensated with the electricity generation in the similar time blocks in the same billing cycle of the participating consumer(s). Any surplus generation over consumption in any time block in a billing cycle shall be accounted as if the surplus generation/ Energy Credits occurred during the off-peak time block for Time of Day (TOD) Consumers and normal time block for Non-TOD Consumer.*
- (d) *Where the units credited during any billing period of any participating consumer exceeds the import of units by that consumer, such surplus credited units shall be carried forward in the next billing period as energy credits for such participating consumer(s).*
- (e) *For unadjusted net credited Units of electricity at the end of each financial year, the provisions of Clause 11.4 (c) will be applicable for each participating consumer.*
- (f) *Applicability of Open Access Charges and losses for sourcing electricity from Renewable Energy Generating System is exempted till installed capacity of rooftop solar reaches 5000 MW in Maharashtra ”*

### **3 Electricity (Rights of Consumers) Amendment Rules, 2024**

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This Chapter of the Explanatory Memorandum elaborates the reasoning and justification for incorporating the changes related to provisioning of infrastructure to enable grid connectivity to rooftop RE systems and timeline for grid connectivity. Provisions in proposed amendments have been made consistent with the Electricity (Rights of Consumers) Amendment Rules, 2024 notified by the MoP on 22 February 2024.

#### **3.1 Background**

The MoP notified the Electricity (Rights of Consumers) Amendment Rules, 2024 on 22 February 2024, wherein MoP has stipulated timeline for grid connectivity of rooftop RE systems, technical feasibility, and setting up of infrastructure for grid connectivity.

Accordingly, there is a need to introduce the said provisions in the second Amendment to MERC (Grid Interactive Rooftop Renewable Energy Generating Systems) Regulations, 2019. The various modifications proposed because of the Electricity (Rights of Consumers) Amendment Rules, 2024 are as under:

#### **3.2 Substitution of Regulation 9.7 and introducing Regulation 9.7 (a) in the Principal Regulations:**

Regulation 9.7 of the Principal Regulations provided conditionalities post rejection of application on account of inadequate Distribution Transformer capacity. These conditionalities are (i) The technical constraints including inadequate Distribution Transformer must be communicated through written communication and (ii) consideration of the application in chronological order of seniority.

The Electricity (Rights of Consumers) Amendment Rules, 2024 have mandated Distribution Licensee to develop / strengthen Distribution Network to accommodate the Rooftop RE systems and recover the cost through Annual Revenue Requirement. In view of above, Regulation 9.7 is proposed to be substituted as follows and introduce Regulation 9.7 (a) thereafter:

“

*9.7 Before rejecting any application for setting up a Renewable Energy Generating System at a particular Distribution Transformer, the Distribution Licensee shall serve the*

*applicant with a notice to rectify the defects in the ambit of the consumer, within 15 days or such longer period as may be necessary for removing the deficiencies:*

*Provided that the application may be considered in chronological order of seniority.*

- 9.7 (a) *During the time period from the feasibility study or deemed acceptance of the application till the completion of installation, in case, there is any requirement of upgradation of distribution infrastructure like augmentation of service line, distribution transformer capacity, and the like for installation of the required capacity of roof top solar photo voltaic system, the same shall be carried out by the Distribution Licensee in adherence to the timeline specified in Maharashtra Electricity Regulatory Commission (Electricity Supply Code and Standards Of Performance for Distribution Licensees, including Power Quality) Regulations, 2021 as amended from time to time:*

*Provided that the cost of strengthening the distribution infrastructure, including distribution transformer, as necessary, to facilitate the installation of roof top solar photovoltaic systems, shall be included in the annual revenue requirement of the Distribution Licensee.”*

### **3.3 Substitution of Clause C of Annexure-1 of the Principal Regulations:**

MERC (Grid Interactive Rooftop Renewable Energy Generating Systems) Regulations, 2019 categorically provides that the Distribution Licensee shall conduct a technical feasibility study within 15 working days. In compliance with MoP Rules, it is proposed to exempt RE systems up to 10kW capacity from technical feasibility requirements. For other cases i.e. RE system > 10 kW, outcome of the study shall be intimated to the applicant, otherwise it shall be presumed to be technical feasible. Hence, the following clause is proposed to be incorporated in the Second Amendment to MERC (Grid Interactive Rooftop Renewable Energy Generating Systems) Regulations, 2019:

- “ c *For installation of Renewable Energy Generating Systems, the technical feasibility study shall be completed within a period of (15) days and the outcome of the study shall be intimated to the applicant, failing which it shall be presumed that the proposal is technically feasible:*

*Provided that the applications for Renewable Energy Generating Systems upto 10 kW capacity, complete in all respects shall be deemed to have been accepted without requiring technical feasibility study and any commensurate enhancement of the sanctioned load of the consumer, as may be required, shall be carried out by the Distribution Licensee.”*

### **3.4 Introduction of Clause ‘i’ after Clause ‘h’ of the Principal Regulations:**

To bring transparency and promoting ease of doing business, the Commission has proposed to add following provision in accordance with the Electricity (Rights of Consumers) Amendment Rules, 2024

“

- i. *The Formats of Model Net Metering/ Net Billing /Gross Metering connection agreement shall be placed on web-portal of the distribution licensee.”*