

TAMIL NADU ELECTRICITY REGULATORY COMMISSION
Draft Notification No. TNERC/GISS/ – dated 17.08.2021
(Comments invited by 01.09.2021)

The following draft of the Regulations which it is proposed to make in exercise of the powers conferred by section 181 read with Sections 61, 86(1) (e) of the Electricity Act, 2003 (Central Act 36 of 2003) and all other powers enabling it in this behalf, is hereby published for information of all persons likely to be affected thereby, as required by sub section (3) of section 181 of the said Act.

2. Notice is hereby given that the draft Regulations will be taken into consideration after expiry of fifteen days from the date of publication of this Notification in the TNERC website and that any objection or suggestion, which may be received from any person before the expiry of the aforesaid period will be considered by the Commission.

3. Objection or suggestion, if any, should be addressed in duplicate along with soft copy to the Secretary, Tamil Nadu Electricity Regulatory Commission, 4th Floor, SIDCO Corporate Office Building, Thiru Vi Ka Industrial Estate, Guindy, Chennai – 600 032.

REGULATIONS

1. Short title, and commencement

- 1.1 These Regulations may be called the Tamil Nadu Electricity Regulatory Commission (Grid Interactive Solar PV Energy Generating Systems) Regulations, 2021.
- 1.2 These Regulations shall extend to the whole of the State of Tamil Nadu.
- 1.3 These Regulations shall come into force from the date of their publication in the Tamil Nadu Government Gazette.

2. Definitions

2.1. In these Regulations, unless the context otherwise requires,

- a) **“Act”** means the Electricity Act, 2003 (36 of 2003) as amended from time to time ;
- b) **“Agreement”** means a connection agreement entered into between the Distribution Licensee and the consumer;
- c) **“Area of supply”** means the geographic area within which the licensee, for the time being, is authorized by its License to supply electricity.
- d) **“Billing Cycle” or “Billing Period”** means the period for which the electricity bill is raised by the concerned Distribution Licensee;
- e) **“Check Meter”** means a meter, used for accounting and billing of electricity in case of failure of Net Meter or Solar Generation Meter;
- f) **“Commission”** means the Tamil Nadu Electricity Regulatory Commission constituted under the Act;
- g) **“Contracted Load or “Sanctioned Load”** means the load specified in the agreement between the consumer and the Licensee engaged in the business of supplying electricity to him.
- h) **“Distribution licensee” or “licensee”** means a person granted a licence under Section 14 of the Act authorizing him to operate and maintain a distribution system for supplying electricity to the consumers in his area of supply;
- i) **“Electricity Supply Code”** means the Tamil Nadu Electricity Supply Code, 2004 and subsequent amendments thereof;
- j) **“Eligible Consumer”** means a consumer of electricity in the area of supply of the Distribution Licensee who uses or intends to use a Grid Interactive

Solar PV System having a capacity less than 1 MW, subject to conditions in capacity / category / voltage level specified in the regulations.

- k) **"Generic Tariff"** means the Generic Tariff approved or adopted by the Commission for generation from different Renewable Energy sources in accordance with the Tamil Nadu Electricity Regulatory Commission (Power Procurement from New and Renewable Sources) Regulations 2008 as amended from time to time.

- l) **"Financial Year"** or **"Year"** means the period beginning from first (1st) of April in an English calendar year and ending on thirty first (31st) of March of the next year;

Grid Interactive Solar Photovoltaic Power Plant / System" (GISS) means the solar photo voltaic power system installed on the rooftops or land of consumer premises that uses sunlight for direct conversion into electricity through photo voltaic technology.

- m) **"gross-metering"** means a mechanism whereby the total solar energy generated from Grid Interactive rooftop Solar Photovoltaic system of a Prosumer and the total energy consumed by the Prosumer are accounted separately through appropriate metering arrangements and for the billing purpose, the total energy consumed by the Prosumer is accounted at the applicable retail tariff and total solar power generated is accounted for at feed-in tariff determined by the Commission;"

- n) **"Inter-connection Point"** means the interface of the Rooftop Solar System with the outgoing terminals of the meter / Distribution Licensee's cut- outs/ switchgear fixed in the premises of the Eligible Consumer:

Provided that, in the case of an Eligible Consumer connected at the High Tension ('HT') level, the 'Inter-connection Point' shall mean the interface of the GISS with the outgoing terminals of the Distribution Licensee's metering cubicle placed before such Consumer's apparatus;

- o) **kWp** means kilo Watt peak ; **MWp** means Mega Watt peak

- p) **“Net meter” or “bidirectional meter”** means an energy meter which is capable of recording both import and export of electricity.

“Net-metering” means a mechanism whereby solar energy exported to the Grid from Grid Interactive rooftop Solar Photovoltaic system of a Prosumer is deducted from energy imported from the Grid in units (kWh) to arrive at the net imported or exported energy and the net energy import or export is billed or credited or carried-over by the distribution licensee on the basis of the applicable retail tariff by using a single bidirectional energy meter for net-metering at the point of supply;”

“net-billing or net feed-in” means a single bidirectional energy meter used for net-billing or net feeding at the point of supply wherein the energy imported from the Grid and energy exported from Grid Interactive rooftop Solar photovoltaic system of a Prosumer are valued at two different tariffs, where-

- (i) the monetary value of the imported energy is based on the applicable retail tariff;
 - (ii) the monetary value of the exported solar energy is based on feed-in tariff determined by the Commission;
 - (iii) the monetary value of the exported energy is deducted from the monetary value of the imported energy to arrive at the net amount to be billed (or credited / carried-over);
- q) **“Net work charges”** means the charges determined under regulation 70 of TNERC’s Tariff Regulation 2005 to recover the cost incurred towards Distribution wire business.
- r) **“Obligated Entity”** means an entity required to fulfill a Renewable Purchase Obligation (‘RPO’) as specified by the Commission in Regulations governing such Obligation (‘the RPO Regulations’);
- s) **“Prosumer”** means a person who consumes electricity from the grid and can also inject electricity into the grid for distribution licensee, using same point of supply.

- t) **“Premises”** means and includes roof-tops or any areas on the land, building or infrastructure or part or combination thereof in respect of which a separate meter has been provided by the Distribution Licensee for the supply of electricity;
- u) **“Renewable Energy Generation Meter”** means a unidirectional energy meter installed at the point at which the electricity generated by solar energy system of the eligible consumer is delivered to the grid of the distribution licensee;

Provided that a separate Renewable Energy Generation Meter shall be installed for each source of Renewable Energy in case of hybrid or combination of such sources;

- V) **“Renewable Energy certificate ”** shall be as defined in Tamil Nadu Electricity Regulatory Commission (Renewable Purchase Obligation) Regulations 2010.
- w) **“Settlement Period”** means the period beginning from the first day of April of a calendar year and ending with the thirty-first day of March of the following calendar year.

Provided for a newly commissioned solar power system, the first settlement period shall be from the date of commissioning to March of next year.

Words and expressions used in these Regulations which are not specifically defined herein but are defined in the Act shall have the meaning assigned to them in the Act; and, if not defined in the Act, shall have the meaning assigned to them in any Act of Parliament or the State Legislature applicable to the electricity industry.

- x) **“Supply Licensee”** means a person / company who has been granted licence under section 14 and authorized to supply electricity in a particular area .

3 Scope and Applicability

- 3.1 These Regulations shall apply to the distribution licensee and consumers of electricity of the distribution licensee availing supply from it in its area of supply in the State of Tamil Nadu.
- 3.2 These Regulations shall be applicable to all Grid Interactive Solar PV energy Generating Systems for which Applications are preferred after notification of this regulation
- 3.3 The Eligible Consumer may install Grid interactive Solar PV System under net -metering or net-billing or gross - metering arrangement which,
 - a) shall be within the permissible rated capacity as defined under these Regulations.
 - b) shall interconnect and operate safely in parallel with the distribution licensee network in accordance with all relevant Codes and Regulations issued under the Electricity Act from time to time.

4 Eligible consumers and individual project capacity

- 4.1 **Net-metering** : All domestic consumers are eligible for Net metering mechanism up to the level of sanctioned load/ contracted demand of their service connection irrespective of voltage level.
 - a. The existing consumers under the net metering scheme shall continue to be governed by the provisions in the Order No.3 of 2013 dt 13.11.2013.
 - b. Domestic consumers who have been provided with the solar net-feed-in facility as per Order No.3 of 2019 of the Commission shall have option to migrate to the solar energy net metering mechanism as provided for in this order to avoid discrimination within the same category of consumers.

4.2 **Net billing or net feed-in** : All categories of consumers irrespective of load, tariff and voltage level are eligible for net-billing or net feed-in mechanism up to the level of sanctioned load/ contracted demand of their service connection.

4.3 **Gross Metering** : The existing consumers of all category and tariff of all voltage level as well as new applicants are eligible for gross metering mechanism. The minimum size of the Solar System that can be set up under Gross Metering mechanism shall be 1 kW up to a maximum capacity of 999 KW.

Provided that the installation of gross-metered rooftop solar systems on the eligible consumer premises intending to inject its total generated power into the grid shall use separate service line. Such service line up to the nearest service pole/ distribution transformer, as the case may be, shall be laid and maintained by the eligible consumer at his own cost.

4.4. The applicant shall be a consumer of the local distribution licensee and own or in legal possession of the premises including the rooftop or terrace or building or infrastructure or open areas of the land or part or combination thereof on which the Solar PV System is proposed to be installed;

4.5 Consumers with pending arrears / outstanding dues with the Distribution Licensee shall not be eligible for provisions under this regulation.

5 Metering arrangement

5.1 Net-metering mechanism and Net billing or feed-in mechanism: An eligible consumer under the net metering or Net billing / feed-in mechanism shall be entitled to use the power generated from the GISS at his premises and the inject the surplus to the distribution system of the Licensee at the interconnection point.

At service connection point, a single bidirectional energy meter to record the energy import from the TANGEDCO grid and energy export to the TANGEDCO grid shall be provided. This shall be a digital four quadrant vector summation energy meter configured for bidirectional energy measurement whereby both imported and exported active energy readings and allied parameter are

programmed to be displayed. If the eligible consumer is within the ambit of Time-of-Day (ToD) Tariff, the bidirectional energy meter to be provided shall have programmable ToD (time-of-the-day) registers with a minimum of four energy import ToD registers and four energy export ToD registers.

5.2 Gross-metering mechanism: A renewable energy generation meter to record the gross solar energy generation shall be provided. This meter is to be installed immediately after the solar grid inverter. If the eligible consumer is within the ambit of Time-of-Day (ToD) Tariff, the energy meter shall have programmable ToD (time- of-the-day) registers with a minimum of four energy export ToD registers. The total solar power generated is accounted for feed-in tariff determined by the Commission from time to time. The energy consumed, if any, by the prosumer shall be metered and accounted separately.

5.3 HT (11 kV and above) Consumers may install and connect Renewable Energy Generating System at their LT Bus Bar System:

Provided that, in such cases, the Net Meter shall be installed on the HT side of the Consumer's Transformer.

5.4 Energy meters shall be of class 1.0 accuracy and shall comply with applicable CEA (Central Electricity Authority) and BIS (Bureau of Indian Standards) standards.

6 Billing and accounting process

6.1 Net metering :

6.2 The solar energy exported to the Grid from grid connected solar photovoltaic system is deducted from energy imported from the grid in units to arrive at the net imported or exported energy. The net imported or exported energy is billed or credited or carried over to the next billing period. This process shall continue until the end of the settlement period. At the end of the settlement period, credit i.e the net units of surplus generation available if any shall get lapsed.

6.3 In case the Eligible Consumer is within the ambit of Time of Day (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;

6.4 Net billing or Net feed-in:

6.4.1 The monetary value of the imported energy is debited based on the applicable retail tariff determined by the Commission from time to time. The monetary value of the exported energy is credited based on the feed-in tariff determined by the Commission from time to time. The monetary value of the exported energy is deducted from the monetary value of imported energy to arrive at the net amount to be billed. If the cumulative credit amount exceeds the debit amount during any billing cycle, the net credit amount is carried over to the next billing cycle. At the end of a 12-month settlement period ie 31st March, the net credit balance (if any) shall be carried-over to the next settlement period.

6.5 Gross -metering :

Gross metering is permitted for prosumers who opts to sell all generated solar energy to the distribution licensee instead of availing the net- metering or net feed-in facility. An eligible consumer under the gross metering scheme shall inject the entire power generated from the Solar PV installation to the distribution system of the distribution licensee at the interconnection point. The exported solar energy is credited at the feed in tariff determined by the Commission. The amount is credited in the operators/consumers electricity bill for every billing cycle.

7 Technical Requirements

7.1 The Distribution Licensee shall permit Net Metering or net billing or gross metering arrangement, as the case may be, on a non-discriminatory and Distribution Transformer wise 'first come, first serve' basis to Eligible Consumers who have installed or intend to install Grid Interactive Solar energy Generating

System (GISS) connected to the Network of such Distribution Licensee provided that

The solar PV system and the interconnection with the Licensee grid shall comply with all applicable regulations and standards of the Central Electricity Authority (CEA), Grid Codes and the Tamil Nadu Electricity Distribution Code with latest amendments.

- 7.2 The distribution licensee will enhance and update its metering and billing system in line with the requirement of this regulation such that relevant parameters pertaining to billing and payment under all metering mechanisms are properly assessed and clearly furnished in the electricity consumers' bills. Distribution licensees will make available online all of the above billing data for each consumer, along with a sample bill explaining the various billing components.
- 7.3 The solar plant capacity under both metering mechanisms of net metering and net billing or net feed-in, shall not exceed the sanctioned load/contracted demand of the service connection.
- 7.4 The cumulative capacity of solar PV systems under net metering and net billing put together connected to a distribution transformer, shall not exceed 100% of the distribution transformer capacity.
- 7.5 The cumulative capacity of all Solar generating systems under Gross Metering mechanism in case of HT connected to a Power transformer shall not exceed 50% of the Power Transformer capacity.
- 7.6 Distribution licensees shall update the status of the cumulative solar energy system capacity connected and solar energy generated by each system at each distribution transformers on their website every month.
- 7.7 Where ever separate meter measuring the gross solar generation is not available in existing grid connected solar system, Licensee shall take prompt action to install it as mandated.
- 7.8 For all grid connected solar energy systems , the distribution licensee shall make use of the existing distribution network to the maximum extent possible so

that utilisation of such infrastructure is optimized.

8 Inter-Connection with the Grid, Standards and safety.

8.1 In case of net metering or net billing , the interface point shall be the net meter at consumer's premises i.e., prosumer side of the meter. In case of gross metering, the interface point shall be the gross solar power generation meter installed on the licensee side. In case of net metering or net billing mechanism, the installation solar systems on eligible consumer premises will utilize the same service line and installation for injection of excess power into the grid, which is currently being used by the consumer for drawal of power from the distribution licensee. In case of gross metering mechanism, the installation of gross-metered solar systems on the eligible consumer premises intending to inject its total generated power into the grid shall use separate service line. Such service line up to the nearest service pole/ distribution transformer, as the case may be, shall be laid and maintained by the eligible consumer at his own cost. Required diagram to show the scheme of such connection shall be submitted along with the application.

8.2 The Distribution Licensee shall ensure that the inter-connection of the Renewable Energy Generating System with its Network conforms to the specifications, standards and other provisions specified in the CEA (Technical Standard for Connectivity of the Distributed Generation Resources) Regulations, 2013, the CEA (Measures relating to Safety and Electric Supply), Regulations, 2010, and the Tamil Nadu Electricity Grid Code 2005, as amended from time to time.

8.3 The Eligible Consumer/Prosumer may install a Renewable Energy Generating System with or without storage:

Provided that, if an Eligible Consumer opts for connectivity with storage, the inverter shall have appropriate arrangement to prevent the power from flowing into the grid during the absence of grid supply to prevent electrical accidents, and that an automatic as well as manual isolation switch shall also be provided.

- 8.4 The Eligible Consumer shall be responsible for the safe operation, maintenance and rectification of any defect in the Renewable Energy Generating System up to the point of Net Meter or Renewable Energy Generation Meter, beyond which point such responsibility, including in respect of the Net Meter, shall be that of the Distribution Licensee:

Provided further that the Renewable Energy Generation Meter shall be maintained by the Distribution Licensee.

- 8.5 The Distribution Licensee shall have the right to disconnect the Renewable Energy Generating System from its network at any time in the event of any threat of accident or damage from such System to its distribution system so as to avoid any accident or damage to it:

Provided that the Distribution Licensee, considering the criticality, may call upon the Consumer to rectify the defect within a reasonable time

- 8.6 The solar power generator and equipments shall meet the requirement specified in the CEA's (Technical Standards for connectivity of the Distributed Generation Resources) Regulations 2013 and as amended from time to time. The responsibility of operation and maintenance of the solar power generator including all accessories and apparatus lies with the solar power generators. The design and installation of the roof top Solar Photo Voltaic (SPV) should be equipped with appropriately rated protective devices to sense any abnormality in the system and carryout automatic isolation of the SPV from the grid. The inverters used should meet the necessary quality requirements. The protection logics should be tested before commissioning of the plant. Safety certificates for the installation should be obtained from the appropriate authorities.

- 8.7 The automatic isolation of the SPV should be ensured for no grid supply and low or over voltage conditions and within the required response time. Adequate rated fuses and fast acting circuit breakers on input and output side of the inverters and disconnect/Isolating switches to isolate DC and AC system for maintenance shall be provided. The consumer should provide for all internal safety and protective mechanism for earthing, surge, DC ground fault, and transients etc. as per the CEA regulation/standards.
- 8.8 The inverter should be a sine wave inverter suitable for synchronizing with the distribution licensee's grid. The inverter shall have features of filtering out harmonics and other distortions before injecting the energy into the system of the Distribution Licensee.
- 8.9 Any battery backup shall be restricted to the consumer's network and the consumer shall be responsible to take adequate safety measures to prevent battery power/Diesel Generator (DG) power/backup power extending to distribution licensee's LT grid on failure of distribution licensee's grid supply.
- 8.10 To prevent back feeding and possible accidents when maintenance works are carried out by distribution licensee's personnel in his network, suitable isolator/ isolating disconnect switches which can be locked by distribution licensee personnel should be provided. This is in addition to automatic sensing and isolating on grid supply failure etc and in addition to internal disconnect switches. In the event of distribution licensee LT supply failure, the SPG has to ensure that there will not be any solar power being fed to the LT grid of distribution licensee. The consumer is solely responsible for any accident to human being/animals whatsoever (fatal/non-fatal/departmental/non departmental) that may occur due to back feeding from the SPG plant when the grid supply is off. The distribution licensee reserves the right to disconnect the consumer installation at any time in the event of such exigencies to prevent accident or damage to men and material.
- 8.11 All eligible consumers/ prosumers shall abide by all the codes and regulations issued by the CEA/Commission to the extent applicable and in force from time

to time. The eligible consumer/ prosumer shall comply with CEA/TNERC/CEIG/ distribution licensee's requirements to the extent they are applicable with respect to safe, secure and reliable function of the SPG plant and the grid. The power injected into the grid shall be of the required quality in respect of wave shape, frequency, absence of DC components etc.

8.12 The SPG shall restrict the harmonic generation, flicker within the limit specified in the Indian Electricity Grid Code and relevant regulations issued by the Central Electricity Authority.

8.13 Grid Connected Renewable Energy Generating Systems connected behind the Consumer's meter, and not opting for either Net Metering Arrangement or Net Billing Arrangement, shall be allowed only after prior intimation to the respective Distribution Licensee:

Provided that the Consumer shall be responsible for ensuring that all necessary safeguarding measures as specified by Central Electricity Authority (CEA) are taken:

Provided further that the Commission may determine additional Fixed Charges or Demand Charges and any other Charges for such Grid Connected systems excluding Non-fossil fuel-based Cogeneration Plants, in the retail Tariff Order, if the Distribution Licensee proposes such additional Fixed Charges or Demand Charges and any other Charges for such systems, in its retail supply Tariff Petition, supported by adequate justification:

Provided also that in case the Consumer installs Renewable Energy Generating Systems behind the Consumer's meter without prior intimation to the respective Distribution Licensee, then the total additional liabilities in terms of additional Fixed Charges or Demand Charges and any other Charges for such systems, shall be levied at twice the determined rate for such period of default.

8.14 The Licensee 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 Renewable Energy Generating System when the grid supply is

off. The Licensee may disconnect the installation at any time in the event of such exigencies to prevent such accident.

9 Metering Infrastructure

- 9.1 All meters installed at the Renewable Energy Generating System shall comply with the CEA (Installation and Operation of Meters) Regulations, 2006 and subsequent amendments thereof.
- 9.2 All meters shall have Advanced Metering Infrastructure (AMI) facility with RS 485 (or higher) communication port.
- 9.3 The Net Metering Arrangement shall include a single-phase or a three-phase Net Meter, as may be required, located at the point of inter-connection as ascertained by the Distribution Licensee.
- 9.4 Existing Meter in the premises of the Eligible Consumer shall be replaced by the Net Meter at the cost of the Consumer, in accordance with the provisions of the Electricity Supply Code.
- 9.5 If the Eligible Consumer is within the ambit of Time-of-Day ('ToD') Tariff, the Net Meter installed shall be capable of recording ToD consumption and generation.
- 9.6 The Distribution Licensee shall be responsible for the testing, installation, and maintenance of the metering equipment, and its adherence to the applicable standards and specifications.
- 9.7 The Eligible Consumer shall procure, at his own cost from the authorized suppliers by the Licensee, a Renewable Energy Generation Meter conforming to the applicable CEA Regulations to be installed at appropriate location to measure the energy generated from the Renewable Energy Generating System. If the meter is not available with the authorized suppliers, consumers can buy from open market and get them calibrated by the Licensee.
- 9.8 The Renewable Energy Generation Meter shall be maintained by the Distribution Licensee.

9.9 All the meters under all mechanisms of this regulation such as Net Meter , Renewable Energy Generation Meter etc., shall be installed at such locations in the premises of the Eligible Consumer that would enable easy and safe access to the Distribution Licensee for inspection and meter reading at any time.

9.10 In case of Renewable Energy Generating System with capacity above 20 kW set up under Net Metering Arrangement, a Check Meter of appropriate class may be installed by the Distribution Licensee for the Renewable Energy Generation Meter:

Provided that installation of Check Meter shall be optional for Renewable Energy Generating System with capacity up to and including 20 kW.

9.11 In case of Renewable Energy Generating System set up under Net metering or net billing arrangement, an additional Check Meter for the Renewable Energy Generation Meter of appropriate class shall be installed by the Distribution Licensee at their option.

10 Net work charges:

10.1 Net work charges shall be applicable to the prosumers categorised under net metering or net billing or net feed in mechanism , as determined by the commission under regulation 70 of TNERC (Terms and conditions for determination of Tariff) Regulations 2005, from time to time.

10.2 The extent of concession if any, to any category of consumers under proper justification shall be determined by the commission from time to time

10.3 The total units generated by the solar plant shall be reckoned for calculation of network charges.

10.4 The net work charges determined by the Commission for respective HT/LT category shall be payable by all existing and new consumers/ prosumers

11 General Conditions

- 11.1 The seniority of applications under all categories of this regulation shall be considered on first come, first serve basis.
- 11.2 At the end of one-year period, the Distribution Licensee shall furnish the capacity of Solar PV system installed under net metering, Net billing and gross metering mechanism, the impact of such solar systems on the grid and on the other factors of the distribution licensee to the Commission. Any amendment, if required, may be considered after due consideration of comments/objections/ recommendations of the various stakeholders.
- 11.3 The Distribution Licensee shall update the Distribution Transformer-wise, Power Transformer wise capacity available and the cumulative capacity of the Renewable Energy Generating Systems installed under Net Metering/Gross Metering arrangements quarterly, and provide the information on its website every quarter.
- 11.4 The Distribution Licensee shall make available the Agreement formats on its website, along with the applicable procedure and Application and other relevant forms, within two months of notification of these Regulations.
- 11.5 In case the Eligible Consumer / Prosumer leaves the system or changes the Supply Licensee, the excess electricity shall be considered in the following manner:
- a) The unadjusted Units as on date of leaving the system or changing the Supply Licensee shall be compensated at the Generic Tariff, and adjusted along with the final bill settlement with the existing Supply Licensee;
 - b) Any injection of electricity without entering into a new Net Metering Agreement with the new Supply Licensee shall be considered as inadvertent injection and shall not be paid for by the new Supply Licensee.

12 Energy accounting during meter defect / failure / burnt

12.1 In case of defective/failure/burnt condition of any meter, the Distribution Licensee shall replace the meter as specified in the Electricity Supply Code.

12.2 The electricity generated by the Renewable Energy Generating System during the period in which the meter is defective shall be determined based on the readings of the Check Meter or the reading / consumption recorded in the inverter.

Provided that if the Check Meter is not installed or the energy is not recorded in the inverter or the energy recorded in the inverter is erratic , then the electricity generated shall be considered equal to the average monthly generation in the last one year or such shorter period as available.

12.3 The consumption of the Consumer during the period in which the Consumer meter or Net Meter is defective shall be determined as specified in the Electricity Supply Code.

13 Renewable Purchase Obligation

13.1 The quantum of electricity consumed by the Eligible Consumer from the Renewable Energy Generating System under the Net Metering Arrangement shall qualify towards his compliance of RPO, if such Consumer is an Obligated Entity.

13.2 The quantum of electricity consumed by the Eligible Consumer from the Renewable Energy Generating System under the Net Metering arrangement shall, if such Consumer is not an Obligated Entity, qualify towards meeting the RPO of the Distribution Licensee.

13.3 All units of Renewable Energy purchased by the Distribution Licensee shall qualify towards meeting its RPO.

- 13.4 Under the Net Billing Arrangement and Gross metering arrangement , the entire quantum of electricity recorded by the Generation Meter shall qualify towards meeting the RPO of the Distribution Licensee.

14 Eligibility under Renewable Energy Certificate mechanism

The Renewable Energy generated by an Eligible Consumer under the Net Metering Arrangement or the Net Billing Arrangement under these Regulations shall not be eligible for issuance of Renewable Energy Certificate.

15 Procedure for Application and Registration

- 15.1 The Eligible Consumer shall apply to the concerned Distribution Licensee for connectivity of the Grid Interactive Solar System with the Licensee's Network along with following registration fee either through online or submit the application in the prescribed form (Annexed) at the section office.

Sl.No.	Description	Registration fee
1	LT – up to 20 KW	Rs.500
2	LT – above 20 KW and up to 150 KW	Rs.500 up to 20KW and Rs.100 thereafter for every 20KW or part there of.
3	HT- above 150KW and up to 500KW	Rs.5000
4	HT- above 500 KW to less than 1 MW	Rs.10000

- 15.2. In case the application form submitted in hard copy form, the same shall be scanned and uploaded on the website as soon as it is received.
- 15.3. Acknowledgement with the registration number for that application shall be generated and intimated to the applicant within three working days of receipt of application. In case of applications being received online , the acknowledgement

with the registration number shall be generated and communicated to the applicants through e mail.

- 15.4. In case of any deficiencies in the application form, the same shall be intimated within 3 working days from the date of receipt of application . The consumer shall rectify the defects and resubmit within 7 days to retain the registration number. If the application form is not submitted with rectification within 7 days the application shall stand cancelled and the registration fee shall be forfeited.
- 15.5. The application shall be deemed to be received on the date of generation of acknowledgement with registration number.
- 15.6. The distribution licensee shall evolve technical feasibility within 15 working days from the date of registration of application.
- 15.7. The technical feasibility shall be conducted on the following aspects and any other which the licensee considers appropriate :

- i AC Voltage level at which connectivity is sought;
- ii Sanctioned Load / Contract Demand of the Applicant;
- iii Rated Output AC Voltage of the proposed Renewable Energy Generating System;
- iv Available cumulative capacity of relevant Distribution Transformer/ power Transformer.

- 15.8 If found technically feasible, the Distribution Licensee shall, within 7 working days of the completion of the feasibility study, convey its approval for installing the Renewable Energy Generating System. The approval shall indicate the maximum permissible capacity of the System, and shall be valid for a period of 6 months from the date of approval, or such extended period as may be agreed to by the Distribution Licensee
- 15.9. The Applicant shall, within the period of validity of such approval, submit the work completion report, along with relevant details (such as technical specifications,

test reports received from manufacturer / system provider, safety certificate from CEIG as may be applicable etc.), with a request to the Distribution Licensee for the testing and commissioning of the Renewable Energy Generating System.-

- 15.10 . The Distribution Licensee shall complete the testing and commissioning of the System within 10 working days from receipt of such request and shall install the bidirectional meter and synchronise the Renewable Energy Generating System within 10 days thereafter.
- 15.11 The applicant and Licensee shall enter in to agreement in the prescribed format after the solar system is installed but before it is synchronized with the network.
- 15.12. The commissioning test of the Solar PV System shall be carried out in the presence of representatives of consumer/owner of Rooftop Solar PV System, and concerned officer of the distribution licensee. The commissioning certificate shall be signed by all the above named parties.
- 15.13. The Commissioning certificate must contain of the following details:
 - i. Details of Solar PV panels including name of the manufacturer, type, size/capacity of the panels, etc.;
 - ii. Details regarding inverter, types of inverters and size;
 - iii. Total capacity of the Solar PV Plant;
 - iv. Details of meter installed along with the types of meter accuracy, serial number, etc.
- 15.14 The formats of contract agreement and installation certificate shall be placed in the web portal of the Dist licensee.
- 15.15 The application tracking mechanism based on the unique registration number shall be provided by the distribution licensee through web-based module or any other mode to monitor the status of processing of the application like receipt of application, site inspection, meter installation, commissioning, etc
- 15.16 Consumer shall have the option of purchasing the bidirectional meter from the authorized suppliers which shall be tested and installed by the Licensee.

- 15.17 The timelines as specified in these regulations shall be adhered to by the Licensee.
- 15.18 The Distribution licensee shall take necessary action to comply with provisions prescribed in adhere to Rule 11(4) of Electricity (Consumer) Rules 2020.

16 Access and Disconnection

- 16.1 The Eligible Consumer shall provide access to the Licensee to the metering equipment and disconnecting devices of Renewable Energy Generating System, both automatic and manual.
- 16.2 If, in an emergent or outage situation, the Licensee cannot access the disconnecting devices of the Renewable Energy Generating System, both automatic and manual, it may disconnect power supply to the premises.
- 16.3 Upon termination of this Agreement under Clause 5, the Eligible Consumer shall disconnect the Renewable Energy Generating System forthwith from the Network of the Licensee.

17 . Connection Agreement

- 17.1. The Distribution Licensee and Eligible Consumer shall enter into a Connection Agreement after approval of connectivity of the Renewable Energy Generating System with the distribution Network but before the start of actual generation from the System.
- 17.2 A model Grid connected SPG plant agreement is provided at Annexure , which the Distribution Licensee may modify suitably, subject to consistency with these Regulations with the approval of the Commission..
- 17.3 The Connection Agreement shall remain in force for twenty five years:
Provided that the Eligible Consumer may terminate the Agreement at any time by giving 90 days' notice to the Distribution Licensee:
- 17.4 Any eligible consumer/Prosumer, who intends to discontinue net metering arrangement with the distribution licensee shall be allowed, subject to a written notice to the distribution licensee made at least one month in advance. Any

excess energy generation remaining unadjusted as on the date of termination of the agreement shall not be adjusted by the distribution licensee.

Provided further that the Distribution Licensee may terminate the Agreement by giving 30 days' notice, if the Eligible Consumer breaches any term of the Agreement and does not remedy such breach within 30 days, or such other longer period as may be provided, of receiving notice from the Licensee of such breach, or for any other valid reason to be communicated in writing:

Provided also that the Distribution Licensee may terminate the Agreement by giving 15 days' notice in case the consumer fails to pay his dues in a timely manner or indulges in any malpractices:

Provided also that the Agreement may be terminated at any time by mutual consent.

- 17.5 Any unbilled energy generation as on the date of termination of the agreement shall be paid within one month from the date of termination of agreement by the distribution licensee.
- 17.6 The Eligible Consumer shall, upon termination of the Agreement, disconnect forthwith its Renewable Energy Generating System from the Distribution Licensee's Network.

18. Power to give directions

Subject to provisions of the Act, the Commission may from time to time issue such directions and orders as considered appropriate for implementation of these Regulations.

19. Power to relax

The Commission may by general or special order, for reasons to be recorded in writing, and after giving an opportunity of hearing to the parties likely to be affected, may relax any of the provisions of these Regulations on its own motion or on an application made before it by an interested person.

20. Power to amend

The Commission may from time to time add, vary, alter, suspend, modify, amend or repeal any provisions of these Regulations for reasons to be recorded.

These regulations supersede the earlier regulations and statutory orders issued by the Commission so far and for all practical and resolutions of disputes, only these regulations shall prevail without prejudice to all actions taken and orders issued under the earlier orders and regulations.

21 . Power to remove difficulties

If any difficulty arises in giving effect to the provisions of these Regulations, the Commission may, by an order, make such provisions, not inconsistent to the provision of the Act and these Regulations, as may appear to be necessary for removing such difficulty.

(By order of the Tamil Nadu Electricity Regulatory Commission)

(S.Chinnarajalu)
Secretary

Application Form for Installation of Grid- Connected Solar Energy Generating System

To:
The Section Officer/Designated
Officer Distribution Licensee
[name of office]

Photo of
applicant(s)

I. I / we herewith apply and request for Grid – Connected Solar Energy generating system to be connected to the service connection of following details:

1. Name(s) of applicant(s) in full	
2. Address of the premises at which the solar energy generation system is to be installed	
3. Address for communication	
4. Service connection number	
5. Service connection tariff	
6. Sanctioned Load / Contracted Demand	
7. Mobile number(s)	
8. Email ID	
9. Proposed AC capacity of the solar system to be installed	
10. Roof Top or Ground Mounted	
11. Net Metering / Net Feed-in / Gross Metering	
12. Solar grid inverter make, type and capacity	
13. Solar grid inverter has automatic isolation protection (Y/N)?	
14. Has a Solar Generation Meter been installed (Y/N)?	
15. Make capacity sl.no of the Generation meter	
16. Expected date of commissioning of solar PV system.	

- I. I / We agree to pay the required charges as demanded in accordance with the Rules, Codes and Regulations.
- II. I / We agree to install the plant in accordance with the protection and Safety Standards as mandated in the Regulations relating to Safety.
- III. I / We agree to enter in to the agreement as per the regulation.
- IV. I agree to bear the entire cost of erection of separate service line, to inject the total generated power in to the grid in case of gross metering arrangement.

Date:

Name(s) :

Signature(s) :

Grid – Connected Solar Energy Application Acknowledgement

Received an application for Grid – Connected Solar Energy Generating System,

Name(s).

Date:

Service Connection number:

Application registration no.:

Solar Plant Capacity:

Net Metering / Net Feed-in / Gross Metering :

Name of Officer: Signature

Designation/TANGEDCO

List of documents attached with application form (to be uploaded)

1. Copy of ownership / lease deed in case of ground mounted solar energy generating system.
2. Proof of payment of registration fee.
3. Diagram showing the layout of premises, metering location and service line configuration etc., in case of gross metering.

(By order of the Tamil Nadu Electricity Regulatory Commission)

(S.Chinnarajalu)
Secretary

FORM – 2**Grid – Connected Solar Power Generation Plant Agreement**

This Agreement is made and entered into at (location) on this (date).....day of (month)..... between the Eligible Consumer, residing at (address) as first party

AND

----- Distribution Licensee (herein after called as Licensee) and having its registered office at (address)..... as second party of the agreement

And whereas, the Licensee agrees to permit eligible consumer's SPG plant of capacity watts at the premises of and as per conditions of this agreement and regulations / orders issued by the Tamil Nadu Electricity Regulatory Commission, from time to time for Net Metering / Net Feed-in / Gross Metering Mechanism.

Both the parties hereby agree to as follows:

1. Eligibility

Eligibility for Net Metering / Net Feed-in / Gross Metering shall be as specified in the relevant Regulations / Codes / Orders of the Tamil Nadu Electricity Regulatory Commission. Eligible consumer is required to be aware, in advance, of the standards and conditions, his system has to meet for being integrated into grid / distribution system.

2. Technical and Interconnection Requirements

The eligible consumer agrees that his solar generation plant and system will conform to the standards and requirements specified in the following Regulations and codes as amended from time to time.

- (i) CEA's (Technical Standards for connectivity of the Distributed Generating Resources) Regulations, 2013.
- (ii) Central Electricity Authority (Installation and Operation of Meters) Regulation 2006.
- (iii) Central Electricity Authority (Measures of Safety and Electric Supply) Regulation 2010.
- (iv) Tamil Nadu Electricity Regulatory Commission's (Grid Interactive Solar Energy Generating Systems) Regulation 2021
- (v) Tamil Nadu Electricity Distribution Code.
- (vi) Tamil Nadu Electricity Supply Code.

2.2 Eligible consumer agrees that he has installed or will install, prior to connection of Photovoltaic system to Licensee's distribution system, an isolation device (both automatic and inbuilt within inverter and external manual relays) and agrees for the Licensee to have access to and operation of this, if required and for repair & maintenance of the distribution system.

2.3 Eligible consumer agrees that in case of a power outage on Licensee's system, photovoltaic system will shut down, automatically and his plant will not generate power.

2.4. All the equipment connected to distribution system must be compliant with relevant international (IEEE/IEC) or Indian standards (BIS) and installations of electrical equipment protective devices, earthing standard etc., must comply with Central Electricity Authority (Measures of Safety and Electricity Supply) Regulations, 2010 as amended from time to time.

2.5. Eligible consumer/ Prosumer agrees that licensee will specify the interface / interconnection point and metering point.

2.6. Eligible consumer/ prosumer and licensee agrees to comply with the relevant CEA regulations in respect of operation and maintenance of the plant, drawing and diagrams, site responsibility schedule, harmonics, synchronization, voltage frequency, flicker etc.,

2.7. Due to Licensee's obligation to maintain a safe and reliable distribution system, eligible consumer agrees that if it is determined by the Licensee that eligible consumer's photovoltaic system either causes damage to and / or produces adverse effects affecting other consumers or Licensee's assets, eligible consumer will have to disconnect photovoltaic system immediately from the distribution system upon direction from the Licensee and correct the problem at his own expense prior to a

reconnection.

3. Clearances and Approvals

3.1. The eligible consumer agrees to obtain all the necessary approvals and clearances (environmental and grid connected related) before connecting the rooftop solar photovoltaic system to the distribution system.

4. Access and Disconnection

4.1. The eligible consumer shall provide access to Licensee to metering equipment and disconnecting devices of photovoltaic system, both automatic and manual, at all times.

4.2. In emergency or outage situation, where there is no access to a disconnecting means, both automatic and manual, such as a switch or breaker, Licensee may disconnect service to the premises.

4.3. Upon termination of this agreement the eligible consumer shall disconnect the solar system forthwith from the network of the licensee.

5. Liabilities

5.1. Eligible consumer and Licensee will indemnify each other for damages or adverse effects from either party's negligence or intentional misconduct in the connection and operation of photovoltaic system or Licensee's distribution system.

5.2. Licensee and eligible consumer will not be liable to each other for any loss of

profits or revenues, business interruption losses, loss of contract or loss of goodwill, or for indirect, consequential, incidental or special damages, including, but not limited to, punitive or exemplary damages, whether any of the said liability, loss or damages arise in contract, or otherwise.

5.3. Licensee shall not be liable for delivery or realization by eligible consumer for any fiscal or other incentive provided by the Central / State government beyond the scope specified by the Commission in its relevant Order.

6. Commercial Settlement

6.1. Metering System, Billing, Charges and the commercial settlement under this agreement shall be as per the regulations / codes / orders of TNERC amended from time to time.

6.2. The Licensee shall not be liable to compensate the eligible consumer if his solar system is unable to inject power into Licensee's network on account of failure of power supply in the grid.

7. Connection and maintenance Costs

7.1. The eligible consumer shall bear all costs related to setting up of photovoltaic system including metering and interconnection costs.

7.2. The eligible consumer agrees to pay the actual cost of modifications and upgrades to the service line required to connect photovoltaic system in case it is required.

7.3. In case of gross metering arrangement, the eligible consumer shall bear entire cost of erection and maintenance of separate service line to be laid to inject its total generated power into the grid.

8. Period of Agreement and Termination

8.1. This agreement shall be for a period of twenty five years, but may be terminated prematurely by mutual consent.

8.2. The eligible consumer can terminate agreement at any time with Licensee by providing 90 days prior notice.

8.3. Licensee has the right to terminate agreement on 30 days prior written notice, if eligible consumer breaches terms of this agreement and does not remedy the breach within 30 days from the date of receiving written notice from the Licensee.

8.4. Licensee has the right to terminate agreement if the eligible consumer fails to pay his dues in a timely manner or indulges in any malpractices.

8.5. Eligible consumer agrees that upon termination of this agreement, he must disconnect the photovoltaic system from Licensee's distribution system in a timely manner and to Licensee's satisfaction.

In the witness, whereof of Mr. for and on behalf of ...
(Eligible consumer) and Mr. for and on behalf of.....
(Licensee) sign this agreement in two originals.

Eligible Consumer

Distribution Licensee

Name

Name

(By order of the Tamil Nadu Electricity Regulatory Commission)

(S.Chinnarajalu)
Secretary

EXPLANATORY STATEMENT

In the M.P No.14 filed by the TANGEDCO, the Commission has passed daily order observing that rates for the gross metering have to be fixed and directed TANGEDCO to file components in regard to assessing the network cost . Commission further directed the Registry to webhost the consultative paper in this regard.

2. The Commission had earlier notified (Notification No.TNERC/TR/5/3, Dated 26-05-21; Gazette notification on 09-06-2021) the enabling provision to recover the network cost from the consumers under Regulation 70 of TNERC (Terms and Conditions for determination of Tariff) Regulations 2005.

3. The Electricity (Rights of Consumers) Amendment Rules 2021 mandates enactment of Regulation for grid interactive solar generation system for arrangements of net-metering, net billing and gross metering mechanisms.

4. The above set of legal requirements constitute the need to determine the tariff for net feed-in and gross metering mechanism coupled with enactment of a regulation for Grid interactive solar generation system along with a consultative paper with required details and statistics for appraisal.

The proposed draft regulation seeks to fulfil the above requirements.

(By order of the Tamil Nadu Electricity Regulatory Commission)

(S.Chinnarajalu)
Secretary