

TAMIL NADU GENERATION AND DISTRIBUTION CORPORATION LTD.
(Technical Branch)

O/o the Chief Engineer/NCES,
TANGEDCO, Chennai-2.

**Salient features/Guidelines for the Hon'ble TNERC's Generic Tariff
Order for Grid Interactive PV Solar Energy Generating System (GISS) –
Order No.8 / 2021, dated 22-10-2021**

I. Applicability of this order:

This Order shall take effect from 22.10.2021.

1. Net-Metering:

- a. All the new domestic consumers registered after 22.10.2021 are eligible for net metering mechanism up to the level of sanctioned load/ contracted demand.
- b. All the domestic consumers have an additional option of choosing the net-feed in mechanism.
- c. Domestic consumers who have been provided with the solar net-feed-in facility as per TNERC Order No.3 of 2019 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.

2. Net billing or net feed-in:

All electricity consumer categories (except hut and agriculture) irrespective of tariff and voltage levels up to the level of sanctioned load/contracted demand up to a maximum capacity of 999 KW are eligible for solar energy net billing or net feed-in mechanism.

3. Gross Metering:

- a. The existing and new consumers of all categories except domestic category and also the generators are eligible for gross metering mechanism irrespective of tariff. The minimum size of the Solar System

that can be set up under Gross Metering mechanism shall be 151 kWp up to a maximum capacity of 999 kW.

- b. LT consumers are not eligible for gross metering.
- c. New generators who are not existing consumers but desire to set up GISS in a premise or an open area and sell entire generated power to Licensee are eligible for gross metering mechanism up to a maximum capacity of 999kW. The sanctioned load / contracted demand do not arise for such cases for the purpose of capping the plant capacities applied.
- d. Provided that the installation of gross-metered GISS on the eligible consumer/generator premises intending to inject its total generated power into the grid shall use separate service line for the purpose of evacuation of power. The service line shall be connected to the nearest HT feeder without having to be extended till the sub-station.
- e. A separate service connection is not required for purpose like security in night hours etc. The same can be drawn from the existing power evacuation system itself. The import energy shall be billed under HT Industrial Tariff for energy alone. No demand charge to be levied.
- f. Such service line for evacuation of power up to the nearest HT feeder network, shall be laid and maintained by the eligible consumer at his cost. Since it is proposed to allow the prosumer / generator to connect the solar system in the existing HT feeder, Automatic Meter Reading shall be provided by the prosumer / generator in consultation with the licensee. The remote switching of ON / OFF of the breaker and switch of GISS shall be provided to the feeding substation by the prosumer / generator.
- g. The Solar plant capacity in all categories shall be reckoned as the capacity on AC side.
- h. The feed-in price has been determined with 21% CUF taking into account of the AC output capacity and corresponding capital cost. Addition of capacity of DC panels is left to the option of eligible consumer / prosumer / generator to the extent of the sanctioned GISS plant capacity (AC output capacity) which will be reckoned by the AC output demand reached and recorded in the Gross Generation meter for the given billing cycle.

- i. Consumers with pending arrears / outstanding due with the Distribution Licensee shall not be eligible for provisions under this regulation
- j. Eligible consumers/ prosumers/ generators of respective categories are eligible to apply for additional loads with total loads not exceeding the sanctioned load/ contracted demand or 999 kW whichever is lower, subject to the technical feasibility.
- k. Domestic consumers who have been provided with the solar net-feed-in facility as per TNERC Order No.3 of 2019 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.
- l. Electricity consumers who have been provided with the solar net-metering facility under the Tamil Nadu Solar Energy Policy 2012 may add additional solar energy capacity and retain the solar energy net-metering facility, provided that the total solar energy capacity shall not exceed the sanctioned load of the service connection as already provided for in the Commission's Order dated 22-12-2020 in M.P. no. 32 of 2020.
- m. The existing parallel operation mechanism shall be converted in to net feed-in mechanism that shall enable the prosumer to export the excess power to the Licensee Grid and encash them with feed-in tariff. The reverse power relay shall be removed. While the net work charges is applicable for the generated power, the parallel operation charges shall cease to exist upon such conversion. The prosumer shall be benefitted to export the entire solar power generated during non production period like holidays besides exporting excess power during normal days.

II. Billing & Accounting:

1. Net Metering:

- (i) 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. If the generated energy is more than the consumption in a given billing cycle, such surplus

energy generated / exported shall be carried over to the next billing cycle for credit and adjustment. This process shall continue until the end of the settlement period i.e., 31st March. At the end of the settlement period, the credit i.e., the net units of surplus generation available, if any, shall get lapsed. If the consumption is more than the generation in any given billing cycle, the net consumption units shall be charged under retail tariff fixed by the Commission from time to time.

- (ii) In case the Eligible Consumer is within the ambit of Time of Day (ToD) tariff, the electricity consumption in any time slot i.e. peak hours, off-peak hours, etc., shall be first compensated with the quantum of electricity injected in the same time slot, any excess injection over and above the consumption in any other time slot in a Billing Cycle shall be accounted as if the excess injection had occurred during off-peak hours:

2. Net billing or Net feed-in:

The monetary value of the imported energy is debited based on the applicable retail tariff; The monetary value of the exported energy is credited based on the feed-in tariff determined by the Commission. 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 is carried over to the next billing cycle. At the end of settlement period, i.e., on 31st March the consumer has the option to receive payment of the net credit balance (if any) or have such credit balance carried-over to the next settlement period

3. Gross metering:

Gross metering is permitted for eligible consumer or generator 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 or generator under the gross metering scheme shall inject the entire power generated from the GISS station to the distribution system of the distribution licensee to the nearest HT network of same voltage. 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.

For the purpose of billing the import, export and net energy, the units and other allied parameters recorded in the respective import and export and net register of the consumer bidirectional meter shall be reckoned respectively.

The maximum demand recorded in the gross generation meter or inverter, as the case may be, shall not exceed the sanctioned/ contracted plant capacity of GISS in any billing cycle. **If the demand exceeds the sanctioned limit in any billing cycle, the quantum of exported units recorded in the bi-directional meter during the respective demand integration period (DIP) in case of gross metering and respective billing cycle in case of net-metering and net billing, proportionate to the portion of demand that exceeded over the sanctioned limit shall be treated as inadvertent injection in to the grid and shall not be eligible for payment by the Licensee.**

III. Levelised Tariffs and Time of Day (ToD) tariffs:

The Time of Day tariffs has been determined by adding 20% higher than the levelised tariff and shall apply for the energy supplied during the **evening peak hours i.e., 18.00 hrs to 21.00 hrs.**

Capacity Range	Levelised Tariff
1-10 kW	Rs.3.61 per kWh
11-150 kW	Rs.3.37 per kWh
151-999 kW	Rs.3.10 per kWh

IV. Network charges:

- a. This network charges shall be applicable to consumers of net-metering and netbilling mechanism for the total units generated by the solar systems. Such charges to be recovered from the prosumers will be covered within the total Aggregate Revenue Requirement as envisaged in the amendment to

the Terms and conditions for Tariff Regulation 2005 as notified vide TNERC/TR/5/3 dated 26.05.21.

- b. Net work charges shall not be applicable for eligible consumers / generators of gross metering mechanism as it involves direct sale of the units generated by their solar system to the Licensee.
- c. Net work charges shall be applicable to all existing and new consumers except for consumers who sell the generated units directly to the Licensee under Gross metering mechanism.
- d. 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.
- e. To encourage the growth of solar power in domestic sector, the Commission proposes to levy 20% of network charges for domestic consumers of up to 10KW and 75% of network charges for the domestic consumers of above 10KW.
- f. 100% net work charges shall be applicable to all other category of consumers / prosumers (except agriculture consumers for which separate orders will be issued) covered under net feed-in mechanism.
- g. The total units recorded in the meter provided to measure the gross generation of solar power shall be reckoned for calculation of network charges.
- h. Network charges is applicable to the prosumers categorised under net metering or net billing or net feed in mechanism as per Annexure -A.
- i. Network charges are not applicable to Gross metering mechanism.**
- j. The details of Present Network Charges as per the Tariff Order No.8 of 2021 dt 22.10.2021 is as follows:

“The Network charges towards the Distribution wire business is chargeable to HT prosumers at 83 Paise / kWh and for LT prosumers at Rs.1.27 / kWh. The above charges is applicable to all existing and new prosumers as specified under respective category until the 'Network

charges' is revised by the Commission in the next Tariff Order or in any other special order."

V. Belated Payment Surcharge:

The Licensee shall make payment to the prosumers / generators within two months from the date of receipt of invoices, failing which a belated payment surcharge at the rate of one percent for every month of delay is payable by the Licensee to such prosumers/generators.

VI. Energy metering:

The GISS and the interconnection with the TANGEDCO 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.

1. Net-metering mechanism and Net feed-in mechanism:

- a. 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.
- b. 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.
- c. The bidirectional energy meter shall have programmable ToD (time-of-the-day) registers with a minimum of four energy import ToD registers and four energy export ToD registers.

2. Gross-metering mechanism:

- a. An energy meter to record the gross solar energy generation is to be installed immediately after the solar grid inverter. The energy meter shall have programmable ToD (time- of-the day) registers with a minimum of four energy export ToD registers.

- b. The total solar power generated is accounted for feed-in tariff determined by the Commission from time to time.
- c. The energy drawn from grid and consumed by the prosumer / generator is metered and accounted separately at applicable HT industrial tariff under single part tariff with energy charges only.
- d. Demand charges shall not be billed.
- e. The energy meter shall be of class 1.0 accuracy and shall comply with applicable CEA (Central Electricity Authority) and BIS (Bureau of Indian Standards) standards.

3. Energy accounting during meter defect/failure/burnt :

- i. In case of defective/failure/burnt condition of any meter, the Concerned Officer shall replace the meter as specified in the Electricity Supply Code.
- ii. 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.
- iii. In case of defect of both meter and inverter, if the recorded data are retrievable from the internal storage of the meter, billing shall be done based on the data so retrieved.
- iv. In case of data not being retrievable, the consumption during the period which the Meter is defective shall be determined as specified in the Electricity Supply Code. The details of meter, nature of defect, action taken to retrieve the data and reason for non retrieval of data shall be documented by a competitive authority and preserved to be produced at any lime in future.

VII. Standards and Technical Requirements

- 1. The GISS and the interconnection with the TANGEDCO 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.

2. The solar plant capacity shall not exceed the sanctioned load / contracted demand.
3. The cumulative capacity of all Solar PV systems under net metering or net billing put together connected to a distribution transformer shall not exceed 90% of the distribution transformer capacity.
4. The cumulative capacity of all solar generating systems under Gross metering mechanism in case of HT connected to a Power Transformer shall not exceed 70% of the Power Transformer capacity.
5. The status of the cumulative solar energy system capacity connected and solar energy generated by each system at each distribution transformers has to be updated on the TANGEDCO website every month.
6. Wherever separate meter, for measuring the gross solar generation is not available at present in existing grid connected solar system of more than 10KW, prompt action shall have to be taken immediately to install them as mandated.
7. The solar power generator and equipment 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.
8. 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 GISS should be equipped with appropriately rated protective devices to sense any abnormality in the system and carryout automatic isolation of the GISS 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.
9. The automatic isolation of the GISS 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, transients etc. as per the CEA regulation/standards.

10. The inverter should be a sine wave inverter suitable for synchronizing with the distribution licensee's grid.
11. 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's LT supply failure, the GISS should have automatic isolation mechanism to prevent any solar power being fed to the LT grid of distribution licensee.
12. The consumer / prosumer / generator 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 GISS 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.
13. The consumer/ prosumer/ generator 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 consumer / prosumer / generator shall comply with CEA/TNERC/CEIG/ distribution licensee's requirements to the extent it is applicable with respect to safe, secure and reliable function of the GISS 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.

14. The GISS shall restrict the harmonic generation, flicker within the limit specified in the relevant regulations issued by the Central Electricity Authority.
15. 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.
16. Grid Connected Renewable Energy Generating Systems connected behind the Consumer's meter and not opting for either Net Metering or Net Billing arrangement shall be allowed only after prior intimation to TANGEDCO.

VIII. GENERAL:

1. The Solar plant capacity in all categories shall be reckoned as the capacity on AC side.
2. The feed-in price has been determined with 21% CUF taking into account of the AC output capacity and corresponding capital cost.
3. For consumers upto the sanctioned load of 10 KW, generation of solar energy shall be computed based on the stipulated CUF (21 %) or energy recorded in the inverter whichever is lower in lieu of installation of gross meter for such assessment. If any dispute arises over the computation of such measurement of energy or assessment of demand, the aggrieved party can install the generation meter at his cost to enable actual assessment of readings relating to generation.
4. For existing consumers of more than 10 KW, a notice has to be issued to the consumer to install the generation meter of required capacity, facility and specification. Till the meter is installed, the generation shall be assessed based on CUF (21 %) for collecting network charges and RPO. For new applicants of more than 10 KW, generation meter with demand recording facility shall be installed at the cost of the applicant as part of GISS system.

5. In case of Renewable Energy Generating System with capacity above 20 kW a Check Meter of appropriate class shall be installed by TANGEDCO 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.
6. Addition of capacity of DC panels is left to the option of eligible consumer/prosumer/ generator to the extent of the sanctioned GISS plant capacity (AC output capacity) which will be reckoned by the AC output demand reached and recorded in the Gross Generation meter for the given billing cycle. For less than 10 KW system, the demand reached shall be assessed from the inverter reading.
7. Consumers with pending arrears/outstanding due shall not be eligible for provisions under this regulation.
8. Eligible consumers/ prosumers/ generators of respective categories are eligible to apply for additional loads with total loads not exceeding the sanctioned load/ contracted demand or 999 kW whichever is lower, subject to the technical feasibility.
9. Electricity consumers who have been provided with the solar net-metering facility under the Tamil Nadu Solar Energy Policy 2012 may add additional solar energy capacity and retain the solar energy net-metering facility, provided that the total solar energy capacity shall not exceed the sanctioned load of the service connection as already provided for in the Commission's Order dated 22-12-2020 in M.P. no. 32 of 2020.
10. In case of multiple GISS units under one service connection, individual generation meter for each inverter /set of inverters in each spot/place/building of the premise shall be installed. The readings of the generation meters shall be assessed individually and to be added together (both energy and demand recorded for each billing cycle) to one value of gross generation to be reckoned as the unit consumed and demand reached for the respective billing cycle of the service connection concerned for all billing purpose.

11. The existing parallel operation mechanism shall be converted in to net feed-in mechanism that shall enable the prosumer to export the excess power to the Licensee Grid and encash them with feed-in tariff. The reverse power relay shall be removed. While the net work charges is applicable for the generated power, the parallel operation charges shall cease to exist upon such conversion. The prosumer shall be benefitted to export the entire solar power generated during non production period like holidays besides exporting excess power during normal days.
12. In case any GISS plant is found to be running in parallel with the supply system of the distribution licensee without approval then supply of such consumer may be disconnected with 3 days notice and the supply shall be restored only after the plant is isolated from the supply system of TANGEDCO. Such consumer may apply for GISS plant in the next financial year but his application will be kept at the bottom of the list of applicants. Such consumer will be permitted to set-up the plant only if there is still capacity available for allotment after allotting the capacity to all successful applicants above him.
13. The concerned Executive Engineer/O&M is the Nodal Officer for effecting the solar net meter/net feed-in/gross metering services. The application for Rooftop Solar for LT consumers, shall be submitted in the online <https://www.tnebltd.gov.in/usrp/> under "Apply" Menu as follows:
 - Click "Apply Online – Non - CFA" button - For consumers who applies without Central Financial Assistance(CFA) (i.e., without Subsidy)
 - Click "Apply Online - CFA" button - For consumers who applies with Central Financial Assistance(CFA) (i.e., with Subsidy)

The registration fees prescribed for LT Consumers as per the GISS regulation is as follows:

S/No.	Description	Registration fee
1	LT- upto 20kW	Rs.500
2	LT - above 20 kW and up to 150 kW	Rs.500 up to 20 kW and Rs.100 thereafter for every 20 kW or part

	thereof.
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HT Service:

All the application to the (GISS) by existing HT consumer is to be addressed to Chief Engineer/NCES, 2nd Floor, Eastern Wing, NPKRR Maaligai, Anna Salai, Chennai-2, E-mail id : cences@tnebnnet.org in the prescribed application form annexed herewith as Annexure-B with the following documents:

- (a) Latest copy of HT bill
- (b) DPR of the Solar Project with all technical details, layout details, electrical diagram, space utilised etc.
- (c) Time line to complete the project
- (d) Proof of Ownership of the premises by the entity.
- (e) No due certificate from the EDC in which HT service is located.
- (f) GST particulars of the consumers

After receipt of application and registration fees, the in-principle approval for installation will be issued to the HT applicant informing the technical requirements needed for tie-up.

After intimation of completion of (GISS) by the applicant, tie-up approval will be issued and on production of safety certificate, synchronisation is to be done by SE/NCES in the presence of the EDC officials and agreement executed as per the prescribed format (Annexure-H) annexed herewith.

The registration fees prescribed for HT Consumers as per the GISS regulation is as follows:

S/No.	Description	Registration fee
1	HT- above 150 kW and up to 500 kW	Rs.5000
2	HT- above 500 kW to less than 1 MW(i.e., upto 999kW)	Rs.10000

IX. Operative Control Period:

1. This shall come into force from 22.10.2021
2. The tariffs determined shall be applicable for all consumer categories and is applicable for a control period up to 31.03.2023.
3. The tariff determined shall be valid for 25 years for the GISS which are commissioned during the said control period.
4. As far as the net work / wheeling charges are concerned the rate specified in this order is valid up to the next revision.

The Operating Procedures and the timeline for installation and Metering Connection of Grid Connected Solar roof top PV Systems by DISCOMs(only for CFA scheme) is annexed herewith in Annexure – I.

(Sd/30.12.2021)
CHIEF ENGINEER/NCES

Encl :-

1. Annexure – A Highlights of Generic Order (GISS)
2. Annexure – B Grid- Connected Solar PV Energy Generating System Application along with Grid- Connected Solar PV Energy Generating System Application Acknowledgement.
3. Annexure – C Declaration.
4. Annexure – D Net - Metering Configuration.
5. Annexure – E Format for Solar Grid- Connected Solar PV Energy Generating System Technical Feasibility Report
6. Annexure – F Format for Feasibility intimation Letter to Consumer.
7. Annexure – G Inspection Report Format
8. Annexure – H Grid- Connected Solar PV Energy Generating System connection agreement.
9. Annexure – I Operating Procedures for Installation and Metering Connection of Grid Connected Solar Rooftop PV systems by DISCOMs.(Only for CFA scheme)

Annexure - A

Category	Eligibility	Metering Mechanism			Net work Charges	Feed in Tariff (*)		
		Net Metering	Net Feed-in	Gross Metering		0-10 KW	11-150 KW	151-999 KW
Domestic LT Category	Up to Sanctioned load	✓	✓	x	Rs.1.27 per kw 20% up to 10 kW 75% above 10KW	Rs. 3.61	Rs. 3.37	
Other than domestic category in LT	Up to sanctioned load	x	✓	x	Rs. 1.27 per KWh on total generation			
Consumers of more than 150 KW	151-999 KW	x	✓	✓	Re.0.83 per kWh for Net Feed -in No Charges for Gross Metering			Rs.3.10
Generator other than consumer	151-999 KW	x	x	✓	Nil			

(*) The Time of Day (ToD) Tariff will be 20% higher than the above for the supply of power during the evening peak hour i.e., 6.00 pm to 9.00pm.

Annexure - B

Application Form for installation of Grid- Connected Solar PV Energy Generating System

To:

Photo of applicant(s)

I / We herewith apply and request for Grid - Connected Solar PV 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. RoofTop 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

II. I / We agree to pay the required charges as demanded in accordance with the Rules, Codes and Regulations.

III. I / We agree to install the plant in accordance with the protection and Safety Standards as mandated in the Regulations relating to Safety.

IV. I / We agree to enter into the agreement as per the Regulation.

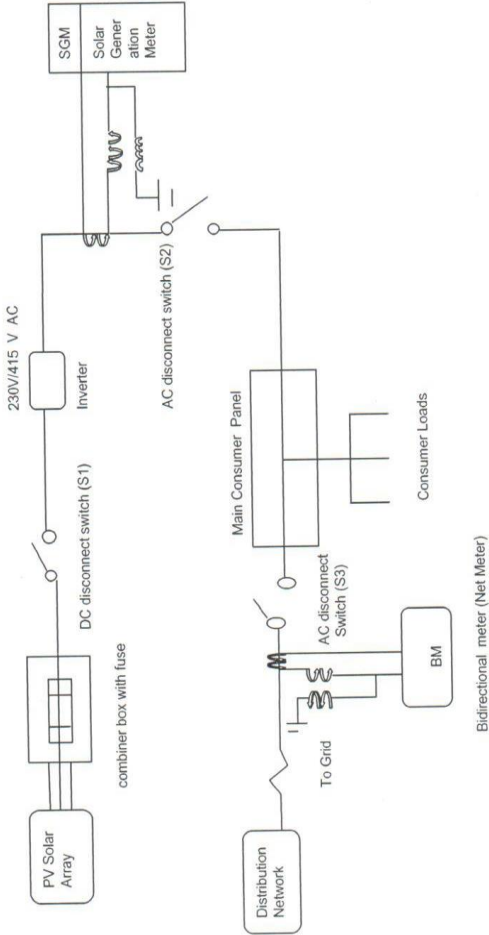
V. I agree to bear the entire cost of erection of separate service line, to inject the total generated power into the grid in case of gross metering arrangement.

Date

Name(s) :
Signature(s)

Annexure - D

Net-metering configuration



Grid - Connected Solar Energy Application Acknowledgement

Received an application for Grid - Connected Solar Energy Generating System

(To be filled by the applicant)

Name.

Date:

Service Connection number:

Solar Plant Capacity

Net Metering / Net Feed-in / Gross Metering :

Name of Officer:

Signature:

Designation/Licensee :

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

Your application for setting up of solar grid interactive roof-top and small SPV power plant under policy on in accordance with TNERC order NO-8 Dt:22.10.2021 has been received along with registration fee.

(To be filled in office).

The details of payment are as below:

Application registration no.:

Signature

Name of Officer

Annexure – C

Declaration

I hereby declare that the information furnished above is true to the best of my knowledge and behalf. If false, TANGEDCO has the right to reject/cancel the application. Further, I hereby agree with the specifications, terms and conditions stipulated by TANGEDCO for the selection and installation of roof-top solar power plant. I also confirm that I am aware of the conditions stipulated in the CEA regulations on Technical Standards for connectivity of the Distributed Generation Resources) Regulations 2013 and confirms that I will abide by the same.

Place:

Signature:

Date:

Name:

Encl :-

1. Copy of Electricity Bill (YES/NO)

Annexure - E

Format for Grid Connected Solar PV Generating system Technical Feasibility Report

Name of the applicant

1. S/C No
2. Category
3. Distribution
4. Pole number
5. Section
6. Address
7. Mobile No

B. Distribution Transformer Details

1. Name of the SS
2. Name of the Feeder
3. DTR capacity in KVA
4. Voltage ratio
5. Maximum load reached in the LT feeder
6. Type and size of the Exg. conductor in the LT feeder
7. Current carrying capacity of the above feeder
8. Total Connected load on the DTR(in KVA)
9. Addl. Loads sanctioned so far (in KVA)
10. Already proposed loads (in KVA)
11. Total Load on DTR : $X=8+9+10$ (in KVA)
12. SPV Generators already connected capacity in KW
13. Proposed SPV generators capacity in KW
14. Total generation capacity $Y=12+13$ (in KW)
15. Y should be restricted to 90 % of the DT capacity
(i.e.) Y is less than or equal to 90 % of (3).

Remarks :-Whether technically feasible or not to export the power from proposed SPV generator (Yes or No)

C. FEEDER DETAILS

1. Name of the feeder
2. Name of SS from which the feeder is Emanating with voltage ratio
3. Type and size of the conductor
4. Current carrying capacity of the feeder
5. Maximum load reached on the feeder in Amps & KVA
6. Total connected DTR capacity on this 11KV feeder(KVA)
7. SPV generators connected on this feeder, if any, and their capacity in KW.

Remarks : Whether technically feasible or not to export the power from proposed SPV generator (Yes or No)

Encl:- LT Sketch

ExecutiveEngineer

O&M, -----

Annexure – F

Format for Feasibility intimation Letter to Consumer

From _____ To _____

The Executive Engineer, _____ (Consumer name and address).

O & M,

Lr.No.EE/O&M/ _____ /TANGEDCO/F.Solar Roof Top/Doc No. /D.No. / , dt.

Sir,

Sub: Eley-TANGEDCO-O&M Division-Installing of _____ KW solar roof top
SPV generator- _____ (Name), situated at SC No. _____ /
Distribution, _____, _____(Village / Town), _____(Dist)-
Approval – Reg.

Ref: Your application NO. _____ ,dt. _____

With reference to your application for installation of solar SPV generator for _____KW
on _____ your roof top proposed at H.No _____ , Village _____ , _____ (Dist) is inspected
by the undersigned on _____ and found feasible. Hence approved vide No.____ /
dt._____.

You are further requested to approach this office with relevant documents (Meter,
SPV modules, Grid Tie Inverter, Protective system, Sine wave inverter with harmonic
requirements as per CEA norms) after completion of installation of SPV generator and
obtaining CEIG approval wherever required for further processing.

Executive Engineer,

O&M,

Annexure – G

Inspection Report Format

A. Name of the applicant

- 1 S/C No
- 2 Category
- 3 Distribution / Transformer
- 4 Pole number
- 5 Section
- 6 Address
- 7 Mobile No

B. Meter Details(main/check/SPV Gen)

- 1 Meter make
- 2 Serial number
- 3 Capacity
- 4 Meter constant
- 5 Initial reading (Tri vector parameters)
- 6 i) Import
- 7 ii) Export
- 8 Name of the laboratory where the meter is tested (copy of test results to be enclosed)

C. Grid Tie Inverter / Connector

- 1 Make
- 2 Serial number
- 3 Capacity
- 4 Input voltage
- 5 Output voltage
- 6 If grid supply fails, status of contactor (on or off)

D. SPV Module

- 1 Make
- 2 Serial number
- 3 Type of module
- 4 Capacity of each module
- 5 Number of modules
- 6 Total capacity of module

E. Details of protective system available

(feasibility shall be given only on availability of the above)

- Encl:- 1) Single line diagram of SPV generator
- 2) Specification sheets of all equipments

Executive Engineer

O&M, -----

Annexure - H

Grid Interactive Solar FV Energy Generating System (GISS)- Agreement

This Agreement is made and entered into at (location) _____ on this
(date) _____ day of (month) _____ between
The Eligible Consumer/Prosumer/Generator, _____ residing
at _____
(address) as first party

AND _____ distribution Licensee
(herein after called as TANGEDCO) and having its registered office at
(address) as second party of the agreement

And whereas, the TANGEDCO agrees to permit to connect the eligible consumer's/prosumer's/generator's GISS of Contracted capacity of 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 party hereby agrees to as follows:

1. Eligibility

1.1 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 as amended. Eligible consumer /prosumer /generator is required to be aware, in advance, of the standards and conditions with which his system has to operate safely with coupled integration with the grid / distribution system of the TANGEDCO.

2. Technical and Interconnection Requirements

2.1 The eligible consumer/prosumer/generator agrees that his GISS plant /station shall 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 PV Energy Generating Systems) Regulation, 2021

(v) Tamil Nadu Electricity Distribution Code

(vi) Tamil Nadu Electricity Supply Code.

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

2.3 Eligible consumer/prosumer/generator agrees that in case of a power outage on TANGEDCO's system, GISS 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/generator agrees that Licensee will specify the interface/interconnection point and metering point.

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

2.8. Both parties of this agreement are mandated by the Tamil Nadu Electricity Regulatory Commission's (Grid interactive Solar PV Energy Generating Systems) Regulation, 2021 and all relevant regulations, codes and orders of the Tamil Nadu Electricity Regulatory Commission.

3. Clearances and Approvals

3.1 The eligible consumer/Prosumer/generator agrees to obtain all the necessary approvals and clearances (environmental and grid connected related) before connecting the GISS to the distribution system.

4. Access and Disconnection

4.1 TANGEDCO shall have access to metering equipment and disconnecting devices of GISS, 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, TANGEDCO may disconnect service to the premises.

4.3. Upon termination of this agreement the eligible consumer/prosumer/generator shall disconnected the solar system forthwith from the network of the TANGEDCO.

5. Liabilities

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

5.2 TANGEDCO and eligible consumer/prosumer/generator 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 TANGEDCO shall not be liable for delivery or realization by eligible consumer/prosumer/generator 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 The feed-in tariff contracted to be paid by the TANGEDCO to the eligible consumer/ prosumer / generator under this agreement byMetering mechanism is Rs..... (Rupees.....) as per the orders of the TNERC, Number 8/2021 Dated 22.10.2021.

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

6.3. TANGEDCO shall not be liable to compensate the eligible consumer/ prosumer/ generator if his solar system is unable to inject power into TANGEDCO's network on account of failure of power supply in the grid.

7. Connection Costs

7.1 The eligible consumer/ prosumer / generator shall bear all costs related to setting up of photovoltaic system including metering and interconnection and infrastructure for power evacuation costs.

7.2. The eligible consumer/ prosumer / generator agrees to pay the actual cost of modifications and upgrades to the service line/power evacuation line required to connect GISS in case it is required.

7.3. In case of gross metering arrangement, the eligible consumer/ generator shall bear entire cost of erection and maintenance of separate service line to be laid to evacuate 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 / prosumer/ generator can terminate agreement at any time by providing TANGEDCO with 90 days prior notice.

8.3 TANGEDCO has the right to terminate agreement on 30 days prior written notice, if eligible consumer / prosumer/ generator breaches a term of this agreement and does not remedy the breach within 30 days of receiving written notice from TANGEDCO of the breach.

8.4. 4. TANGEDCO has the right to terminate agreement after giving 15 days' notice in case the eligible consumer /prosumer/ generator fails to pay his dues in a timely manner or indulges in any malpractices.

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

In the witness, whereof of Mr. ----- for and on behalf of

----- (Eligible consumer / prosumer/ generator) and Mr. ----- for and on behalf of----- (TANGEDCO) sign this agreement in two originals.

Eligible Consumer/Prosumer/Generator Name

Assistant/Junior Engineer

Address

Designation

Service connection Number

Office Address

Annexure - I
Suggestive Operating Procedures for Installation and Metering
Connection of Grid
Connected Solar Rooftop PV Systems by DISCOMs

ACTIVITY	RESPONSIBILITY	TIMELINE (Max Working Days)
Submission of Application	CONSUMER	Zero Date
Acknowledgment of Application by DISCOM	DISCOM	02
Site Verification / Technical Feasibility & issuance of Letter of Approval (LOA) / Termination [1]	DISCOM	15
In-Principle Approval for CFA	DISCOM	10
Execution of Metering Agreement	DISCOM & CONSUMER	15 – 20
Installation of Rooftop Solar System	DISCOM, Empaneled Vendor & CONSUMER	90 - 180
Meter Procurement Intimation	CONSUMER	15 (prior intimating DISCOM on system readiness)
Submit Work Completion Report / Certificate	CONSUMER & Empaneled Vendor	90 – 180 (from LOA) (depending upon capacity)
Inspection by CEIG (if applicable)	CEIG	15 -20
Issuance of Safety Certificate	CEIG (if applicable)	5 – 10
Intimation to Install Meter	CONSUMER	7 - 10

Inspection by DISCOM, Installation of Meter [2] and Commissioning of the System	DISCOM [3]	15 – 20 (after CEIG approval)
Inspection for Release of CFA [4]	DISCOM	7 -10
Release of CFA	DISCOM	5 -10
Billing Process	DISCOM	30 After synchronization with Grid

[1] DISCOM to communicate to deficiencies to Consumer and provide an opportunity to resolve them

[2] DISCOM may provide a window of 15 days for Consumer to resolve deficiencies found during inspection

[3] Joint Inspection by CEIG (if applicable) and DISCOM can reduce the timelines substantially. If DISCOM has no stock of meters, Consumer will purchase the same upon intimation by DISCOM. Inspection dates to be provided within 7 days by

CEIG (if applicable) and DISCOM from the date of receipt of request for inspection sent by Consumer

[4] Joint Inspection by CEIG (if applicable) and DISCOM can reduce the timelines substantially