

NAGALAND ELECTRICITY REGULATORY COMMISSION



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REGULATIONS, 2019

on

Rooftop Solar Grid Interactive System Net/Gross Metering

341, Upper Agri Colony, Kohima – 797001, Nagaland
Phone: (0370) 2241592(O)/Fax: 2292104(O)
E-mail: nerc_kohima@yahoo.com / Website: www.nerc.org.in

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NAGALAND ELECTRICITY REGULATORY COMMISSION (NERC)
NAGALAND : KOHIMA

*Upper Agri Colony, House No.341,
Nagaland:Kohima-797001
Tel: (0370)2292101(o)/2241592®
Fax: 2292104(o); www.nerc.org.in
e-mail:nerc_kohima@yahoo.com/*

Notification

In exercise of the powers conferred by Section 181 & 86(1)(e) of the Electricity Act, 2003 and all other powers enabling in this behalf the Nagaland Electricity Regulatory Commission hereby makes the following Regulations, namely NERC (Rooftop Solar Grid Interactive System Net/Gross Metering) Regulations, 2019.

1. Short Title, Commencement:

- a) These Regulations shall be called the NERC (Rooftop Solar Grid Interactive System Net/Gross Metering) Regulations, 2019 (hereafter referred to as RTS Regulations, 2019).
- b) These Regulations shall come into force from the date of publication in the official gazette of the State of Nagaland and shall remain in force unless otherwise reviewed/amended.
- c) These Regulations supersede the NERC (Rooftop Solar Grid Interactive Systems based on Net Metering) Regulations, 2016.
- d) Words and expressions used in these Regulations and not defined herein but defined in the Electricity Act, 2003 (hereinafter referred to as 'the Act'), as amended from time to time, shall have the meaning as assigned to them under the Act.

2. Definitions and Interpretations:

2.1 In these Regulations, unless the context otherwise requires:

- a) **“Act”** means the Electricity Act, 2003 (36 of 2003) and subsequent amendments thereof;
- b) **“Agreement”** means an agreement entered into by the distribution licensee with the person;
- c) **“Billing Cycle or Billing Period”** means the period for which regular electricity bills are prepared for different categories of consumers by the Distribution Licensee.
- d) **“Commission”** means the Nagaland Electricity Regulatory Commission constituted under the Act;
- e) **“Consumer”** means any person who is supplied with electricity for his own use by a licensee or the Government or any other person engaged in the business of supplying electricity to the public, as per the Act or any other law for the time being in force and includes any persons whose premises are for the time being, connected for the purpose of receiving electricity with a work of a distribution licensee or the Government or any other person as the case may be.
- f) **“Connected load”** expressed in KW, KVA or HP, refers to the aggregate of the manufacturer's rated capacities of all the consuming devices or apparatus connected with the distribution licensee's service lines on the consumer's premises which can be operated simultaneously. For the purposed of levy of any charges and for deciding the supply voltage, the connected load shall be determined as per the method prescribed in the NERC (Electricity Supply Code) Regulations, 2012 or any other provisions applicable to the electricity consumer of the Distribution Licensee.

- g) **“Contract Demand” or “Connected load/Sanctioned Load”** means the maximum demand in kW, kVA or HP, agreed to be supplied by the licensee and indicated in the agreement executed between the licensee and the consumer;
- h) **“Distribution Licensee” or “Licensee”** means the Department of Power Nagaland granted a license under section 14 (b) of the Act authorising 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 NERC (Electricity Supply Code) Regulations, 2012.
- j) **“Eligible consumer”** for net metering/Gross metering scheme means a consumer of electricity in an area of supply of the “Distribution licensee”, who intends to set up a grid connected rooftop solar system in the consumer’s premises, which can be self-owned or third party owned, with an intent to offset the consumer's own consumption or sell the entire electricity to the distribution licensee at the rate prescribed by the Commission.
- k) **Financial Year** means the period beginning from 1st April in an English calendar year and ending with the 31st of March the subsequent year;
- l) **“Gross Metering”** means the arrangement under which the entire energy generated from rooftop solar system installed at eligible consumer's premises is delivered to the distribution system without accounting for self consumption / use.
- m) **“Grid”** means the low voltage electrical network or the distribution network of the distribution licensee for sales of energy or wheeling of energy.
- n) **“Generation Meter”** means an energy meter installed at the point at which electricity generation by rooftop solar system is delivered to the eligible consumer;
- o) **Capacity of the Distribution Transformer (DT)** means capacity defined under Regulations 5 of these Regulations;
- p) **“Interconnection point”** means the interface of the rooftop solar energy 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 rooftop solar energy system with the outgoing terminals of the Distribution Licensee's metering cubicle placed before such Consumer's apparatus;
- q) **“Invoice”** means either a Monthly Bill/ Supplementary Bill or a Monthly Invoice/ Supplementary Invoice raised by the distribution licensee.
- r) **“kWp”** means kiloWatt peak;
- s) **“Net meter” or “bi-directional meter”** means an energy meter which is capable of recording both import and export of electricity;
- t) **“Net metering”** means an arrangement under which rooftop solar energy system installed at an eligible consumer’s premises delivers surplus electricity, if any, to the Distribution Licensee after off-setting the electricity supplied by distribution licensee during the applicable billing period.
- u) **“Obligated entity”** means the entity mandated under clause(e) of subsection (1) of section 86 of the Act and identified under Nagaland RPO Regulations.
- v) **“Premises”** means Rooftop of a house/ factory/ Ware house/ Government building/ Panchayat Bhavan/ Community centre/ School/ dispensary/ hospital/ place of worship/ parking place/ Group housing society/ Market Society/ market roof top, Residential Campus etc.

- w) **“Rooftop Solar Energy”** or **“RSE”** means the energy generated from the rooftop of eligible consumer using Rooftop Solar (RTS) system;
- x) **“Rooftop solar (RTS) system”** or **“plant”** means the generating station that generates electricity from rooftop solar energy source;
- y) **“Rooftop energy”** means the grid quality electricity generated from Rooftop solar energy sources;
- z) **“Renewable Energy Certificate (REC)”** means the certificate issued in accordance with the Central Electricity Regulatory Commission (Terms and Conditions for recognition and issuance of Renewable Energy Certificate for Renewable Energy Generation) Regulations, 2010;
- aa) **“Renewable Energy Service Company (RESCO)”** means an energy service company which owns a renewable energy system and provides renewable energy to the consumer.

Provided that, the distribution licensee may act as a RESCO. However, this business shall be treated as other business of the distribution licensee.;

- bb) **“Settlement Period”** means the period at the end of which Net Metering settlement between the Distribution Licensee and consumer takes place, generally beginning from 1st April in an English calendar year and ending with 31st of March the next year;
- cc) **“State Nodal Agency”** or **“SNA”** means an entity in the State designated by the State Government to act as the agency to deal with issues related to coordinated development of renewable energy, subsidy approval and distribution to persons developing distributed energy projects, etc.
- dd) **“Third party owner”** means a developer who is generating solar energy on a rooftop but does not own the rooftop but enters into a lease / commercial agreement with the rooftop owner. In case of gross metering arrangement owned by third party, he/she shall enter into an agreement with the Distribution Licensee. However, if a consumer installs rooftop solar system in his premises through a third party and wishes to avail net metering facility, then only the eligible consumer shall enter into an agreement with the Licensee;

2.2 All other words and expressions used in these Regulations although not specifically defined herein above, but defined in the Act, shall have the meaning assigned to them in the Act. The other words and expressions used herein but not specifically defined in these Regulations or in the Act but defined under any law passed by the Parliament applicable to the electricity industry in the State shall have the meaning assigned to them in such law.

3. **Scope and application:**

- 3.1 These Regulations shall apply to the Distribution Licensee, the eligible Consumers of the Distribution Licensee and third party owners of gross metering arrangement of Rooftop Solar (RTS) system in the State of Nagaland.
- 3.2 The eligible consumer may install the RTS system which:
 - a) Shall be within the permissible rated capacity as defined under these regulations.
 - b) Shall be located in the premises of the consumer.
 - c) Shall interconnect and operate safely with the Distribution system of the Licensee.
- 3.3 These Regulations do not preclude the right of the State authority to undertake the RTS system above 500 Kw through alternative mechanism.

4. General Principles.

- 4.1 Subject to the limits and other terms and conditions specified in these Regulations, the eligible consumer(s) of the Distribution Licensee shall be entitled to install RTS system under Net metering or Gross metering arrangement.

Provided that, third party owners who have entered into a lease or commercial agreement for the rooftop in the premises of the eligible consumers, shall also be entitled to install rooftop solar system under gross metering arrangement with the Distribution Licensee, for such capacity which shall be cumulative of the prescribed limits of rooftop solar capacity for each eligible consumer(s) whose rooftop has been leased by the third party owner.

Provided that, third party owners who have entered into a lease or commercial agreement for the rooftop in the premises of a group of consumer(s), shall also be entitled to install rooftop solar system under Net metering arrangement with the Distribution Licensee, for such capacity which shall be cumulative of the prescribed limits of rooftop solar capacity for each eligible consumer(s) of the group whose rooftop has been leased by the third party owner connected with the same Distribution transformer (up to the limit of as defined under these Regulation of DT capacity).

- 4.2 Provided that, the eligible consumer availing net metering arrangement under these regulations shall not be allowed to apply for gross metering within the same premises.
- 4.3 Provided that, the eligible consumer or third party owner as the case may be, availing Gross Metering arrangement under these regulations shall not be allowed to apply for Net Metering within the same premises.
- 4.4 Provided that, the Distribution Licensee shall, as per eligibility condition specified in these regulations, allow the provision of Net Metering arrangement or Gross Metering arrangement to the consumer(s) or third party owner as the case may be, who intends to install grid connected RTS system.
- 4.5 If the eligible consumer(s) installs RTS system under the Net Metering scheme, such eligible consumer(s) shall be entitled to use the power generated from the rooftop solar system at his premises (Self consumption). The surplus power can be injected to the distribution system of the Licensee at the interconnection point.
- 4.6 If the eligible consumer(s) or third party owner installs solar rooftop system under the Gross Metering scheme, the entire power generated from such an installation shall be injected to the distribution system of the Licensee (Sale of Power) at the interconnection point.
- 4.7 The RTS system must be capable of detecting an unintended islanding condition and must have anti-islanding protection to prevent any feeding into the grid in case of failure of supply/grid. Applicable IEC/IEEE technical standards shall be followed to test islanding prevention measure for grid connected inverters.
- 4.8 The consumer(s) may install grid interactive RTS system with or without battery backup. Provided that, the consumer(s) prefers setting up RTS system with battery backup (full load backup/partial load backup), in all such cases, the inverter shall have appropriate arrangement to prevent the battery power to flow into the grid in the absence of grid supply and manual isolation switch shall also be provided.

4.9 Every RTS system shall be equipped with automatic synchronization device. Provided that, the rooftop solar energy system using inverter shall not be required to have separate synchronizing device, if the same is inherently built in the inverter.

4.10 The inverter shall have the features of filtering out harmonics and other distortions before injecting the energy into the distribution system. Harmonic Distortion (THD) shall be within the limits specified in the Indian Electricity Grid Code (IEGC)/IEEE technical standards.

5. Capacity of the Rooftop Solar (RTS) System.

The maximum peak capacity of the grid connected RTS to be installed in a consumer's premises shall not exceed 100% of the connected/sanctioned load/contracted demand of the consumer.

Provided that, the capacity of the grid connected RTS system to be installed by an eligible consumer(s) or third party owner shall not be less than 1kWp and shall not exceed 500 kWp.

6. Availing of Central Financial Assistance (CFA)/Incentive based on achievement

The availing of CFA/Incentive, shall be as per the Directive/Guidelines issued by MNRE, Govt of India, as amended from time to time.

7. Empanelment of Vendors/Agencies for Development of RTS System.

The Distribution Licensee or State Nodal Agency (SNA) shall invite expression of interest for empanelment of vendors/manufacturer of solar panel/system integrators for supply, installation, testing and commissioning of RTS system as per the MNRE guidelines.

The list of empanelled vendors shall be uploaded in the website of the Licensee for consumers to have the option of installing their RTS system through any of these empanelled vendors.

8. Capacity of Transformer.

The maximum cumulative capacity of RTS system to be allowed in the area fed from a Distribution transformer (DT) or any other transformer from which power is fed to the eligible consumers shall not be more than 100% of that DT or any other transformer.

9. Procedure/Rule for application and grant of Grid connectivity.

9.1 The Procedure/Rule for application and grant of grid connectivity will be framed by Distribution Licensee who shall display the same on their website for intending consumers. The rules shall conform to Regulations, shall be non-discriminatory and shall provide expeditious disposal of the applications.

9.2 The eligible consumer(s) or third party owner herein referred to as applicant who intends to install grid connected RTS system in his/her premises shall apply for RTS connectivity as per procedure/rules frame by the Distribution licensee.

10. Interconnection with the Distribution System/Grid.

10.1. The interconnection of the RTS system with the distribution system of the Distribution Licensee shall be made as per the technical specifications and standards for connectivity as specified by the Central Electricity Authority.

- 10.2. The cost of evacuation system and interconnection of the RTS system with the distribution system shall be borne by the eligible consumer(s) or third party owner, as the case may be. Information related to technical & interconnection standards are given at **Annexure-I** of these Regulations.
- 10.3. The Distribution Licensee shall ensure that:
- a) The interconnection of the RTS system with the distribution system conforms to the specifications, standards and provisions as provided in the Central Electricity Authority (Technical Standards for connectivity of the Distributed Generation Resources) Regulations, 2013 as amended from time to time.
 - b) The interconnection of the RTS system with the distribution system of the Licensee conforms to the relevant provisions of the Central Electricity Authority (Measures Relating to Safety and Electric Supply) Regulations, 2010, as amended from time to time.
 - c) The interconnection of the RTS system with the distribution system of the Licensee conforms to the Regulations and provisions framed under Section 53 of the Electricity Act, 2003 and subsequent amendments thereof.
 - d) In the case of Net Metering, an inter-connection agreement as per **Annexure-II(A)** is signed between the parties, whereas, in the case of Gross Metering, inter-connection agreement as per **Annexure-II(B)** is signed between the parties.
- 10.4. The interface point shall remain same irrespective of the installed capacity of RTS system. The connectivity levels at which the RTS system shall be connected with the Distribution system shall be as provided in the NERC (Electricity Supply Code) Regulations, 2012 or the voltage level at which the consumer has been given supply by the distribution licensee.
- 10.5. The eligible consumer shall be responsible for safe operation, maintenance and rectification of any defect of the RTS system up to the inter connection point, beyond which the responsibility of safe operation, maintenance and rectification of any defect in the distribution system including the Meter/Net or Gross meter, as the case may be, shall rest with the distribution licensee.
- 10.6. The distribution licensee shall have the right to disconnect the RTS system at any time without notice in the event of threat/damage from such RTS system to its distribution system to prevent any accident or damage. As prescribed under regulation 10.5, the distribution licensee may call upon the consumer to rectify the defect within a reasonable time.

11. Metering Arrangement

- 11.1 All the meters installed at the RTS system shall comply with the CEA (Installation and Operation of Meters), Regulations, 2006 and subsequent amendments thereof.
- 11.2 The appropriate meter(s) at the premises of the consumer shall be procured, installed and maintained by the Distribution Licensee at the cost of the eligible consumer. However, if the eligible consumer wishes to procure the appropriate Meter(s), he may procure such meter(s) and present the same to the Distribution Licensee for testing and installation.
- 11.3 The location of appropriate meter(s) shall be in accordance with the CEA (Installation and Operation of Meters), Regulations, 2006 with amendments from time to time.

- 11.4 The installation of check meters shall be mandatory for rooftop solar system having rated capacity more than 50 kWp. For installation having capacity up to 50 kw, the eligible consumers or distribution licensee whosoever desires, may install check meter at their own cost. In any case, the distribution licensee shall own the check meter. The check meter shall be installed after the inverter of the RTS system.
- 11.5 The specification and standards of the check meter shall be the same as or better than the consumer meter installed at the premises of the eligible consumer.
- 11.6 All the meters installed shall be jointly inspected and sealed on behalf of both the parties, Provided that, the meter reading taken by the Distribution Licensee shall form the basis of commercial settlement.

12. Work Completion and Commissioning:

12.1 The time-line for completion of project shall be as prescribed by MNRE guidelines.

12.2. RTS System more than 10KW:

On receiving the completion report from the Vendor, the licensee shall inspect/verify and commission the RTS system after obtaining safety approval from the Chief Electrical Inspector.

12.3. RTS System of 10KW and below:

On receiving the completion report from the Vendor, the Licensee shall inspect/verify and commission the RTS system.

13. Energy Accounting and Settlement (Net Metering):

13.1 The Distribution Licensee shall undertake meter reading according to regular billing cycle.

13.2 For each billing period, the distribution licensee shall record readings as below:

- a) The quantum of electricity injected (exported) into distribution system (grid) from RTS system.
- b) The quantum of electricity supplied (imported) by the distribution licensee to the eligible consumers.
- c) Net billed electricity, for which a payment is to be made by the eligible consumers.
- d) The excess electricity (electricity credit), if any, to be carried over to the next billing period after excluding credit from the previous billing (if any).
- e) The quantum of electricity generated by the RTS system shall be accounted towards RPO Compliance;

13.3 If the electricity injected by the RTS system exceeds the electricity consumed during the billing period, such excess injected electricity shall be carried forward to the next billing period as electricity credit and shall be adjusted in the subsequent billing periods but within the settlement period (i.e. financial year).

13.4 If the electricity supplied by the distribution licensee during any billing period exceeds the electricity generated by the eligible consumer's RTS system, the distribution licensee shall raise invoice for the net electricity consumption after taking into account any electricity credit balance remaining from the previous billing periods;

- 13.5 In case the consumer is under the ambit of time of day tariff, as determined by the Commission from time to time, the electricity consumption in any time block (e.g., peak hours, off-peak hours, etc.) shall be first compensated with the electricity generation in the same time block. Any excess generation over consumption in any time block in a billing cycle shall be carried forward to the corresponding time block in the subsequent month for adjustment purpose.
- 13.6 The excess injected electricity measured in kilo-watt hour may be utilized only to offset the consumption measured in kilo-watt hour and shall not be utilized to compensate any other fee and charges imposed by the Distribution Licensee/Commission.
- 13.7 At the end of each settlement period, any electricity credits which remain unadjusted, such excess electricity shall be considered as inadvertent injection and shall not be paid for by the Distribution licensee and shall be reset to zero at the beginning of each settlement period.
- 13.8 In case of Group Net Metering, the settlement between the individual consumer in the group and the third party (if involved) will be the responsibility of the group or third party itself and shall be driven by the agreement between them. The third party aggregator shall not be charged by licensee any fixed charges on this account, but shall be charged for imported energy as per prevailing Rules and Regulations.
- 13.9 Regardless of availability of electricity credits with the eligible consumers during any billing period, the consumer(s) shall continue to pay the monthly minimum charge (fixed/demand charges, Government levy, etc) approved by the commission.
- 13.10 The RTS system under these Regulations, shall be exempted from all wheeling, cross subsidy, transmission and distribution, and banking charges and surcharges.
- 13.11 There shall be no deemed generation charges payable to the eligible consumer of the RTS system.
- 14 **Energy Accounting and Settlement (Gross metering):**
- 14.1 The Distribution Licensee shall be responsible for billing of the electricity injected by the RTS system into the distribution grid.
- 14.2 The Distribution Licensee shall undertake meter reading according to regular billing cycle.
- 14.3 The Distribution Licensee, shall reimburse the eligible consumer or the third party owner as the case may be, for the quantum of injected electricity by RTS system during the billing period by way of 'Solar Injection Compensation'.

Provided that, the rate at which the solar injection compensation to be paid by the distribution licensee to the eligible consumer or third party owner as the case may be, shall be at the rate (feed in tariff) approved by the commission.

Provided that, the billing period and due date of the bills shall be the same as that of the eligible consumer(s) in whose premises the RTS system has been installed.

Provided also that, the Licensee shall reimburse the eligible consumer(s) or third party owner of the RTS system as the case may be, within the due date of the electricity bill of the consumer in whose premises the RTS system has been installed.

- 14.4 The quantum of the electricity generated/injected by the RTS system shall be accounted towards RPO Compliance.
- 14.5 Rebate/delayed payment surcharge of the Solar Injection Compensation as the case may be, shall be levied.
- 14.6 There shall be no deemed generation charges payable to the eligible consumer(s) or third party owner of the RTS system.

15 Solar Renewable Purchase Obligation (Solar RPO).

- 15.1 In case of net metering scheme, the quantum of solar electricity generation by eligible consumer, who is not defined as obligated entity from the RTS system, shall qualify towards compliance of Renewable Purchase Obligation (RPO) for the Distribution Licensee in whose area of supply the eligible consumer is located.
- 15.2 In case of gross metering scheme, the total quantum of solar electricity injected into the grid by eligible consumer, who is not defined as obligated entity, shall qualify towards deemed Renewable Purchase Obligation (RPO) for the Distribution Licensee in whose area of supply the eligible consumer is located.

16 Eligibility to participate Renewable Energy Certificate (REC) Mechanism.

- 16.1 Nothing contained in these Regulations, shall apply to the Rooftop Solar generator intending to sell power under the Renewable Energy Certificate Mechanism and he/she shall be free to sell power under such mechanism as per the provisions of Central Electricity Regulatory Commission (Terms and Conditions for recognition Energy Generation) Regulations, 2010 and subsequent amendments thereof.
- 16.2 The eligibility for Renewable Energy Certificate and issuance of such renewable energy certificate shall be as per the eligibility criteria specified under Central Electricity Regulatory Commission (Terms and Conditions for recognition and issuance of Renewable Energy Certificate for Renewable Energy Generation) Regulations, 2010 and subsequent amendments thereof.

17 Power to give directions.

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

18 Power to relax.

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

19 Power to amend.

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

By Order of the Commission

Sd/-

W. Y. YANTHAN

Secretary,

Nagaland Electricity Regulatory

Commission (NERC), Kohima.

Annexure-I**INFORMATION RELATED TO TECHNICAL & INTERCONNECTION STANDARDS**

Parameter	Reference	Requirements
Overall conditions of service	State Distribution/Supply Code	Reference to State Distribution code
Overall Grid Standards	Central Electricity Authority (Grid Standard) Regulations 2010 and subsequent amendments thereof;	Reference to Regulations
Equipment	BIS/IEC/IEEE	Reference to standards
Meters	Central Electricity Authority (Installation & operation of meters)Regulation 2006 and subsequent amendments thereof	Reference to regulations and additional conditions issued by the Commission.
Safety and supply	Central Electricity Authority (measures of safety and electricity supply) Regulations, 2010 and subsequent amendments thereof	Reference to Regulations
Harmonic Current	IEEE 519 CEA (Technical Standards for Connectivity of the Distributed Generation Resources) Regulations 2013 and Subsequent amendments thereof;	Harmonic current injections from a generating station shall not exceed the limits specified in IEEE 519
Synchronization	IEEE 519 CEA (Technical Standards for Connectivity of the Distributed Generation Resources) Regulations 2013 and Subsequent amendments thereof;	Rooftop Solar PV System must be equipped with a grid frequency synchronization device. Every time the generating station is synchronized to the electricity system. It shall not cause voltage fluctuation greater than +/-5% at point of connection
Voltage	IEEE 519 CEA (Technical Standards for Connectivity of the Distributed Generation Resources) Regulations 2013 and Subsequent amendments thereof;	The voltage operating window should minimize nuisance tripping and should be under operating range of 80% to 110% of the nominal connected the voltage. Beyond a clearing time of 2 sec the Rooftop Solar PV System must isolate itself from the grid
Flicker	IEEE 519 CEA (Technical Standards for Connectivity of the Distributed Generation Resources) Regulations 2013 and Subsequent amendments thereof;	Operation of Rooftop Solar PV System should not cause voltage flicker in excess of the limits stated in IEC 61000 standards or other equivalent Indian standards, if any
Frequency	IEEE 519 CEA (Technical Standards for Connectivity of the Distributed Generation Resources) Regulations 2013 and Subsequent amendments thereof;	When the Distribution system frequency deviates outside the specified conditions (50.5 Hz on upper side and 47.5 Hz on lower side), There should be over and under frequency trip functions with a clearing time of 0.2 sec
DC injection	IEEE 519 CEA (Technical Standards for Connectivity of the Distributed Generation Resources) Regulations 2013 and Subsequent amendments thereof;	Rooftop Solar PV System should not inject DC power more than 0.5% of full rated output at the interconnection point or 1% of rated inverter output current into distribution system under any operating conditions.
Inverter Standards	IEC 61683/IS 61683 IEC 60068-2(1,2,14,30)/ Equivalent BIS Standard	Inverter should comply with these standards for efficiency and measurements Should comply for environmental testing.

Power factor	IEEE 519 CEA (Technical Standards for Connectivity of the Distributed Generation Resources) Regulations 2013 and Subsequent amendments thereof;	While the output of the inverter is greater than 50%, a lagging power factor of greater than 0.9 should operate
Islanding and Disconnection	IEEE 519 CEA (Technical Standards for Connectivity of the Distributed Generation Resources) Regulations 2013 and Subsequent amendments thereof;	The Rooftop Solar PV System in the event of the fault, voltage or frequency variations must island/disconnect itself within IEC standard on stipulated period.
Overload and Overheat	IEEE 519 CEA (Technical Standards for Connectivity of the Distributed Generation Resources) Regulations 2013 and Subsequent amendments thereof;	The inverter should have the facility to automatically switch off in case of overload or overheating and should restart when normal conditions are restored.
Paralleling Device	IEEE 519 CEA (Technical Standards for Connectivity of the Distributed Generation Resources) Regulations 2013 and Subsequent amendments thereof;	Paralleling device of Rooftop Solar PV System shall be capable of withstanding 220% of the normal voltage at the interconnection point.

Inter connection agreement (Net Metering Arrangement)

This Agreement is made and entered into at (location)on this (date)day of (month)yearbetween

The Eligible Consumer(s) by the name of.....having or leasing the premises at (address).....as **First party**

AND

Department of Power Nagaland (herein after called as Distribution Licensee or Licensee) and represented by..... (Designation of office) and having its registered office at (address).....as Second party of the agreement.

And whereas, the..... (Name of the Licensee) agrees to provide grid connectivity to the eligible consumer for injection of the electricity generated from his RTS system of capacitykW into the power system of Licensee as per conditions of this agreement and RTS Regulations/Orders issued by the Nagaland Electricity Regulatory Commission (NERC).

Both the parties hereby agrees to as follows:

1. Eligibility

1.1. Eligibility for Net Metering arrangement has been specified in the NERC (Rooftop Solar Grid Interactive System Gross/Net Metering) Regulations, 2019 (herein after referred to as RTS Regulations, 2019). Eligible consumer or third party owner 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

2.1 The First Party agrees that, his Rooftop Solar generation system and Net Metering system will conform to the standards and requirements specified in these regulations and in the following Regulations and codes as amended from time to time.

- i. Central Electricity Authority (Technical Standards for connectivity of the Distributed Generating Resources) Regulations, 2013 and subsequent amendments thereof;
- ii. Central Electricity Authority (Installation and Operation of Meters) Regulation, 2006 and subsequent amendments thereof;
- iii. Central Electricity Authority (Measures of Safety and Electricity Supply) Regulations, 2010 and subsequent amendments thereof;
- iv. NERC Electricity Grid Code Regulations, 2012.
- v. NERC Supply Code Regulations, 2012.
- vi. Any other provisions applicable to the electricity consumer of the Distribution Licensee.

- 2.2 First Party agrees that, he/she has installed or will install, prior to connection of RTS 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 First Party agrees that, in case of a power outage on Licensee's system, RTS system will disconnect/isolate automatically and his system will not inject power into Licensee's distribution system.
- 2.4 All the equipments connected to distribution system shall be compliant with relevant International (IEEE/IEC) or Indian standards (BIS) and installations of electrical equipment must comply with Central Electricity Authority (Measures of Safety and Electricity Supply) Regulation, 2010.
- 2.5 First Party agrees that Licensee will specify the interface/interconnection point and metering point.
- 2.6 First Party and Second Party agree to comply with the relevant CEA and NERC Regulations in respect of operation and maintenance of the RTS system, drawings 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, First Party agrees that, if it is determined by the Licensee that the respective owner's RTS system either causes damage to and/or produces adverse effects effecting other consumers or Licensee's assets, First Party will have to disconnect RTS 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 First Party agrees to obtain all the necessary approvals and feasibility clearance before connecting the RTS system to the distribution system.

4. Access and Disconnection

- 4.1 Licensee shall have access to metering equipment and disconnecting means of the solar RTS system, both automatic and manual, at all times.
- 4.2 In emergency or outage situation, where there is no access to the disconnecting means, both automatic and manual, such as a switch or breaker, Licensee may disconnect service to the premises of the eligible consumer.

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 RTS 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.

5.4 The Licensee may consider the quantum of electricity generation from the Rooftop Solar system towards RPO.

6. Commercial Settlement

6.1 All the commercial settlement under this agreement shall follow the RTS Regulations, 2019 issued by the NERC.

7. Connection Costs

7.1 The First Party shall bear all costs related to setting up of RTS system including metering and interconnection costs. The First Party agrees to pay the actual cost of modifications and upgrades to the service line required to connect RTS system to the grid in case it is required.

8. Termination

8.1 The First Party can terminate the agreement at any time by providing Licensee with 90 days prior notice.

8.2 Licensee has the right to terminate the agreement on 30 days prior written notice, if First Party commits a breach of any of the term of this agreement and does not remedy the breach within 30 days of receiving written notice from Licensee of the breach.

8.3 First Party shall, upon termination of this agreement, disconnect the RTS system from License's distribution system in a timely manner and to Licensee's satisfaction.

In witness, whereof, Mr.....for and on behalf of (Eligible consumer or third party owner) and Mr. for and behalf of (Licensee) sign this agreement in two original.

Eligible Consumer/ Third Party

Name

Address

Service connection No.

Distribution Licensee

Name

Designation

Office Address

Inter connection agreement (Gross Metering Arrangement)

This Agreement is made and entered into at (location)on this (date)day of (month)yearbetween

The Eligible Consumer or third party owner, by the name ofowning or leasing or having commerce rights to the premises at (address)as **First party**

AND

Department of Power Nagaland (herein after called as distribution Licensee or Licensee) and represented by..... (Designation of office) and having its registered office at (address)as **Second party** of the agreement.

And whereas, the..... (Name of the Licensee) agrees to provide grid connectivity to the eligible consumer for injection of the electricity generated from his RTS system of capacitykW into the power system of Licensee as per conditions of this agreement and RTS Regulations/Orders issued by the Nagaland Electricity Regulatory Commission (NERC).

Both the parties hereby agree to as follows:

1.1 Eligibility

1.2. Eligibility for Gross Metering arrangement has been specified in the NERC (Rooftop Solar Grid Interactive System Gross/Net Metering) Regulations, 2019 (herein after referred to as RTS Regulations, 2019). Eligible consumer or third party owner 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

2.1 The First Party agrees that, his Rooftop Solar generation system and Gross Metering system will conform to the standards and requirements specified in these regulations and in the following Regulations and codes as amended from time to time.

- vii. Central Electricity Authority (Technical Standards for connectivity of the Distributed Generating Resources) Regulations, 2013 and subsequent amendments thereof;
- viii. Central Electricity Authority (Installation and Operation of Meters) Regulation, 2006 and subsequent amendments thereof;
- ix. Central Electricity Authority (Measures of Safety and Electricity Supply) Regulations, 2010 and subsequent amendments thereof;
- x. NERC Electricity Grid Code Regulations, 2012.
- xi. NERC Supply Code Regulations, 2012.
- xii. Any other provisions applicable to the electricity consumer of the Distribution Licensee.

- 2.2 First Party agrees that, he/she has installed or will install, prior to connection of RTS 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 First Party agrees that, in case of a power outage on Licensee's system, RTS system will disconnect/isolate automatically and his plant will not inject power into Licensee's distribution system.
- 2.4 All the equipments connected to distribution system shall be complied with relevant International (IEEE/IEC) or Indian standards (BIS) and installations of electrical equipment must comply with Central Electricity Authority (Measures of Safety and Electricity Supply) Regulation, 2010.
- 2.5 First Party agrees that, Licensee will specify the interface/interconnection point and metering point.
- 2.6 First Party and Second Party agree to comply with the relevant CEA and NERC Regulations in respect of operation and maintenance of the plant, drawings 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, First Party agrees that, if it is determined by the Licensee that the respective owner's RTS system either causes damage to and/or produces adverse effects effecting other consumers or Licensee's assets, First Party will have to disconnect RTS system immediately from the distribution system upon direction from the Licensee and correct the problem at his own expense prior to a reconnection.

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

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 RTS 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.

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8.3 First Party shall, upon termination of this agreement, disconnect the RTS system from Licensee's distribution system in a timely manner and to Licensee's satisfaction.

In witness, whereof, Mr.....for and on behalf of (Eligible consumer or third party owner) and Mr.....for and behalf of (Licensee) sign this agreement in two original.

Eligible Consumer/ Third Party

Name

Address

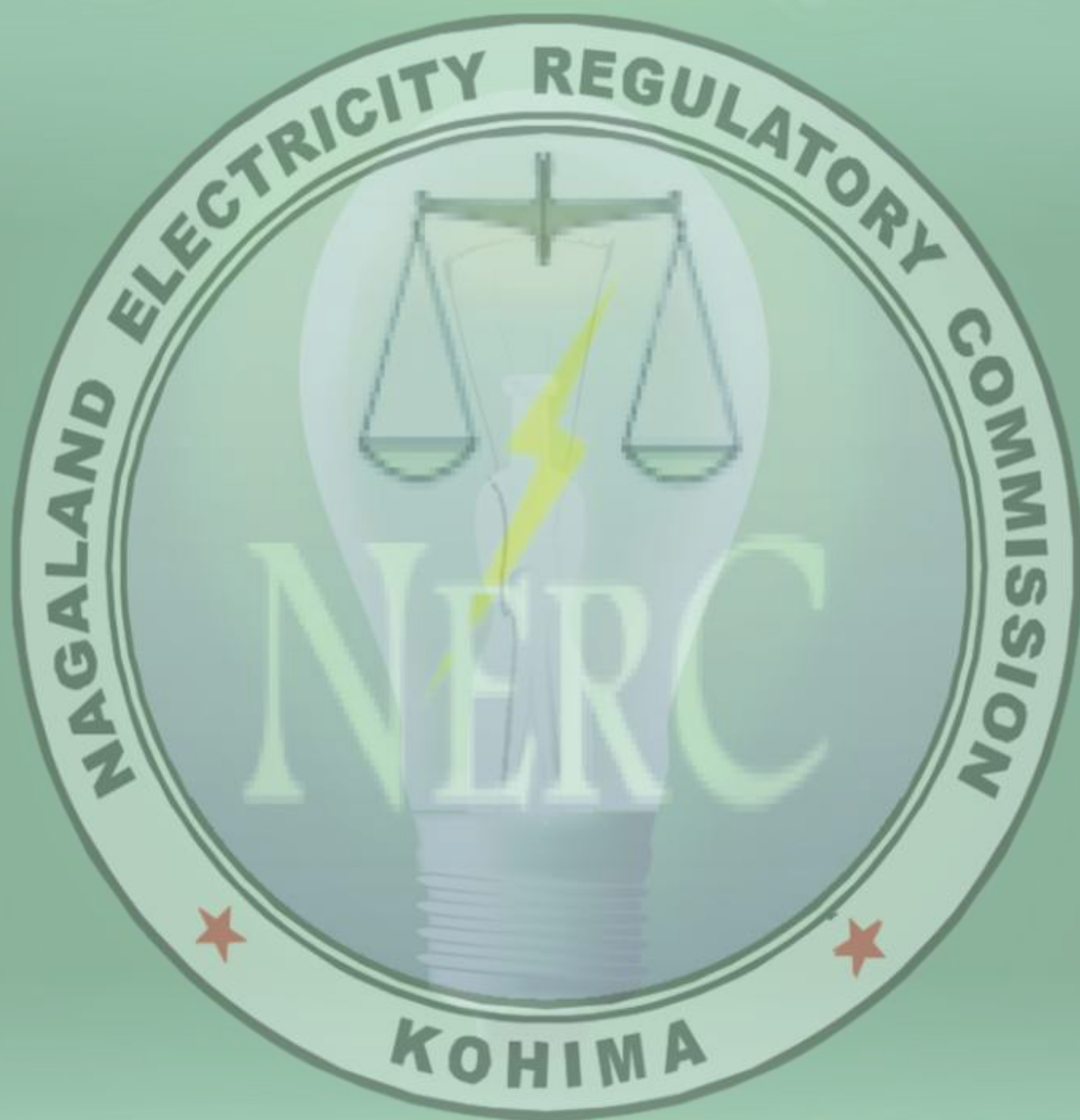
Service connection No.

Distribution Licensee

Name

Designation

Office Address



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