



Uttar Pradesh Electricity Regulatory Commission

Notification No.: UPERC/Secretary/RSPV Regulations/

Dated: 04.01.2019

In exercise of powers conferred under section 61, 66, 86(1)(e) and 181 of the Electricity Act, 2003 and all other powers enabling in this behalf, the Uttar Pradesh Electricity Regulatory Commission hereby makes the following Regulations, namely:

UPERC (Rooftop Solar PV Grid Interactive Systems Gross/ Net Metering) Regulations, 2019 (RSPV Regulations, 2019)

1. Short Title and commencement

1. These Regulations shall be called the UPERC (Rooftop Solar PV Grid Interactive Systems Gross/Net Metering) Regulations, 2019, (hereinafter referred to as RSPV Regulations, 2019).
2. These Regulations shall come into force from the date of their notification in the Official Gazette of the State and shall remain in force unless otherwise reviewed/extended.
3. These Regulations supersede the "UPERC (Rooftop Solar PV Grid Interactive Systems Gross / Net Metering) Regulations, 2015".
4. 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

In these regulations, unless the context otherwise requires,

- a) **"Accuracy class index"** shall mean the index as specified in Central Electricity Authority (Installation & Operation of Meters) Regulations 2006 and subsequent amendments thereof;
- b) **"Act"** means the Electricity Act, 2003 (36 of 2003) and subsequent amendments thereof;
- c) **"Billing cycle" or "Billing period"** means the period for which electricity bills shall be prepared for different categories of consumers by the Licensee.
- d) **"Blockchain"** means a special technology for peer-to-peer transaction platforms that uses decentralised storage to record all transaction data.



- e) **“Commission”** means the Uttar Pradesh Electricity Regulatory Commission constituted under the Act;
- f) **“Consumer”** means any person who is supplied with electricity for his own use by a Licensee or the Government or by any other person engaged in the business of supplying electricity to the public under the Act or any other law for the time being in force and includes any person whose premises are, for the time being, connected for the purpose of receiving electricity with the works of a Distribution Licensee, the Government or such other person, as the case may be;
- g) **“Connected load”** expressed in kW, kVA or HP, refers to aggregate of the manufacturer’s rated capacities of all the energy consuming devices or apparatus connected with the Distribution licensee’s service line on the consumer’s premises which can be operated simultaneously. For the purpose of levy of any charges and for deciding the supply voltage, the connected load shall be determined as per the method prescribed in the UPERC (Electricity Supply Code) Regulations 2005 and subsequent amendments thereof;
- h) **“Contracted demand or Sanctioned load”** means the maximum demand or load in kW, kVA or HP, agreed to be supplied by the licensee and indicated in the agreement executed between the licensee and the consumer;
- i) **“Distribution Licensee” or “Licensee”** means a person granted a license 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;
- j) **“Electricity Supply Code”** means the UPERC (Electricity Supply Code) Regulations 2005 and subsequent amendments thereof;
- k) **“Eligible consumer”** for Net Metering Scheme means the consumers of a Licensee under agriculture (LMV-5) category or domestic consumers under LMV-1 category. while under Gross Metering Scheme means a consumer of electricity in the area of supply of the Distribution Licensee, who intends to set up a grid connected rooftop Solar PV system in the consumer’s premises which can be self-owned or third party owned, with an intent to sell the entire electricity to the distribution licensee at the rate prescribed by the Commission.
- l) **“Net Metering Tariff” or “NMT”** means the tariff determined by the Commission applicable for settlement of any surplus power at the end of settlement period to be paid by the Distribution Licensee to consumer covered by Rooftop Net Metering .
- m) **“Financial year”** means the period beginning from first of April in an English calendar year and ending with the thirty first of the March of the next year;



- n) **“Gross Metering”** means the arrangement under which entire energy generated from rooftop solar PV system installed at eligible consumer premises which is also connected with the grid, is delivered to the distribution system of the distribution Licensee.
- o) **“Gross Metering Tariff”** means the tariff, as determined by the Commission from time to time, for supply of electricity generated from RSPV plant to the distribution Licensee under the Gross metering arrangement.
- p) **“Inter-Connection Agreement”** means the agreement entered into for connecting rooftop Solar PV system to the distribution system;
- q) **“Interconnection point”** means the interface point of the Solar PV power generation facility with the distribution system of the Licensee. The interface point shall be the appropriate meter as per CEA (Installation and Operation of Meters), Regulations, 2006 and subsequent amendments thereof, installed at consumer’s premises or distribution substation;
- r) **“Invoice”** means either a Monthly Bill / Supplementary Bill or a Monthly Invoice/Supplementary Invoice raised by the Distribution Licensee.
- s) **“kW_p”** means kilo Watt peak;
- t) **“Net metering”** means an arrangement for measurement of energy in a system under which rooftop solar PV system installed at metered agriculture (under LMV-5 category) or metered residential/domestic consumer premises (under LMV-1 category) delivers surplus electricity, if any, to the Distribution Licensee after off-setting the electricity supplied by Distribution Licensee during the applicable billing period.
- u) **“Net meter”** means an appropriate energy meter capable of recording both import & export of electricity or a pair of meters one each for recording the import and export of electricity as the case may be;
- v) **“Obligated entity”** means the entity mandated under clause (e) of subsection (1) of section 86 of the Act to fulfill the renewable purchase obligation and identified under UPERC (Promotion of Green Energy through Renewable Purchase Obligation) Regulations, 2010 and subsequent amendments thereof;
- w) **“Peer to Peer transaction”** means that all transactions are stored on a network of computers consisting of the computers of the provider and customer participating in a transaction, as well as of the computers of many other network participants.
- x) **“Premises”** means rooftops, covered elevated areas of building, roofs of warehouses, or other infrastructure or part or combination thereof, but not including the bare land, in respect of which a separate meter or metering arrangements have been made by the Licensee for supply of electricity;



- y) **“Prosumer”** a person who consumes electricity from the grid and can also inject Solar energy into the grid using the same network.
- z) **“Rooftop solar PV (RSPV) system or Rooftop solar PV (RSPV) Plant”** means the grid interactive solar photo voltaic power system installed on the rooftops of consumer premises that uses sunlight for direct conversion into electricity through photo voltaic technology;
- aa) **“Renewable Energy Certificate (REC)”** means the certificate issued in accordance with the procedures approved by the Central Electricity Regulatory Commission;
- bb) **“Renewable Energy Meter”** shall have the meaning as per definition assigned to it in the Central Electricity Authority (Installation and Operation of Meters) Amendment Regulations 2014 and subsequent amendments thereof;
- cc) **“Settlement period”** means the period beginning from first of April in a calendar year and ending with the thirty first of the March of the next year.
- dd) **“Tariff order”** in respect of a Licensee means the most recent order issued by the Commission for that Licensee indicating the rates to be charged by the Licensee from various categories of consumers for supply of electrical energy and services;
- ee) **“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 shall also enter into an agreement with the Distribution Licensee. However, if a consumer installs rooftop solar PV 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;

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 Licensees, the eligible consumers of the Distribution Licensees and third party owners of gross metering arrangement of rooftop solar PV system in the State of Uttar Pradesh.



- 3.2 The eligible consumer may install the rooftop solar PV system under gross metering arrangement or the Net Metering Arrangement. Metered Agricultural or metered Residential/Domestic category under LMV-5 and LMV-1 category respectively, can install rooftop solar PV system under net metering arrangement or the Gross Metering Arrangement 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 Authorities to undertake rooftop solar projects above 2 MWp through alternative mechanism.

4. General Principles

- 4.1 Subject to the limits and other terms and conditions specified in these Regulations, the eligible consumers of the Distribution Licensee shall be entitled to install rooftop solar PV system under gross metering arrangement or net 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 PV system under gross metering arrangement with the Distribution Licensee, for such capacity which shall be cumulative of the prescribed limits of rooftop solar PV capacity for each eligible consumer 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 consumers, shall also be entitled to install rooftop solar PV system under Net metering arrangement with the Distribution Licensee, for such capacity which shall be cumulative of the prescribed limits of rooftop solar PV capacity for each eligible consumer of the group whose rooftop has been leased by the third party owner connected with the same Distribution Transformer (upto the limit of as defined under these Regulations of capacity of DT).

- 4.2 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 arrangement within the same premises.
- 4.3 Provided that the eligible consumer availing net metering arrangement under these Regulations shall not be allowed to apply for gross metering arrangement within the same premises.
- 4.4 Provided that the Distribution Licensee shall, as per the eligibility condition as specified in these Regulations, allow the provision of gross metering arrangement or net metering arrangement to the consumer or third party owner



as the case may be, who intends to install grid connected rooftop solar PV system.

- 4.5 If the eligible consumer or third party owner installs solar rooftop system under the gross metering arrangement, the entire power generated from such an installation shall be injected to the distribution system of the Licensee at the interconnection point.
- 4.6 If the eligible consumer installs solar rooftop system under the net metering scheme, such eligible consumer shall be entitled to use the power generated from the rooftop solar PV system at his premises. The surplus power can be injected to the distribution system of the Licensee at the interconnection point.
- 4.7 In addition to above, to provide flexibility to rooftop solar power prosumer and other eligible consumers, taking a progressive view, the Commission is proposing provision of mutual sale and purchase of electricity through peer-to-peer transaction in a secured and reliable way with proper accounting and billing mechanism implemented with the help Block chain technology. Provided that for such arrangement prior approval of the Commission shall be required. To further take up development of peer-to-peer transaction of electricity generated through renewable sources, and for that UPPCL and UPNEDA shall put up a proposal jointly for approval of the Commission. The Commission may further incorporate provisions in the Regulations based on the proposal.

5 Capacity of Rooftop PV System.

- 5.1 The maximum peak capacity of the grid connected rooftop solar PV system to be installed by any eligible consumer shall not exceed 100% of the connected /contracted demand of the consumer.

Provided the capacity of the grid connected rooftop solar PV system to be installed by any eligible consumer or third party owner shall not be less than 1 kWp and shall not exceed 2 MWp.

- 5.2 Provided that the capacity of the grid connected rooftop solar PV system shall be in conformity with the provisions relating to the connected load or contracted demand permissible under the UPERC (Electricity Supply Code) Regulations, 2005 and subsequent amendments thereof.

6 Capacity of Transformer

- 6.1 The Distribution Licensee shall provide information on its website regarding capacity available on distribution transformer(s) for feeding the eligible consumer at different locations for connecting rooftop solar PV system within three months from the date of commencement of these Regulations, and shall update the same within one month of the start of the subsequent financial year under intimation to the Commission.



- 6.2 Provided that the capacity to be allowed in the area fed from a distribution transformer (DT) or any other transformer from which power is fed to the eligible consumer is not more than 75% of that DT or any other transformer.

Provided that if augmentation of transformer/distribution network is required, then up to total 10 kWp solar rooftop installation, the consumer would not pay any charge except to a one time charge computed at the rate of Rs 1000 per kWp on the capacity beyond 10 kWp, as cost of augmentation of system. e.g. a consumer willing to install a 15 kWp RSPV Plant shall be paying Rs 5,000 (5×1000) as RSPV cost to the utility.

Provided that the Discom shall adhere to SOPs provided in UP (Electricity Supply Code) Regulations, 2005 and subsequent amendments thereof, for augmentation of Distribution network.

- 6.3 Provided further that in case of multiple applications from the consumers or third party owners fed by a transformer, the connectivity with the rooftop solar PV system shall be allowed on first come first serve basis.

7 Procedure for Application and Registration

- 7.1 The eligible consumer or third party owner hereinafter referred to as applicant who intends to install grid interactive rooftop solar PV system in his/her premises will apply for Roof Top Solar Connectivity, along with application fee as prescribed in annexure-I, as per the procedure prescribed by UPNEDA or any other agency specified by the State Government.
- 7.2 The UPNEDA or the other designated agency shall frame the Rules for grant of connectivity under this Scheme and shall display the same on the web site of the concerned agency. The Rules shall conform to Regulations and shall be non-discriminatory and shall provide for expeditious disposal of the applications.

8 Interconnection with the distribution system

- 8.1 The interconnection of the rooftop solar PV 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. The cost of evacuation system and interconnection of the rooftop solar PV system with the distribution system shall be borne by the eligible consumer or third party owner, as the case may be. Information related to technical & interconnection standards are given at Annexure II of these Regulations. The Distribution Licensee shall ensure that:

- (i) The interconnection of the rooftop solar PV 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.



- (ii) The inter connection of the rooftop solar PV 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.
- (iii) The interconnection of the rooftop solar PV system with the distribution system conforms to the specifications, standards and provisions as provided in the UPERC (Grant of connectivity to intra-state Transmission System) Regulations, 2010 as amended from time to time.

Provided that in case of a conflict between these Regulations and the regulations specified under the UPERC (Grant of connectivity to intra-state Transmission System) Regulations, 2010 as amended from time to time, these Regulations shall be applicable to the eligible consumers or third party owner as the case may be.

- (iv) The interconnection of the rooftop solar PV system with the distribution system conforms to the Regulations and provisions framed under Section 53 of the Electricity Act, 2003 and subsequent amendments thereof;
- (v) In case of Gross Metering an inter Connection Agreement as per Annexure III(A) is signed between both the parties whereas in case of Net metering inter Connection Agreement as per Annexure III(B) is signed between both the parties.

- 8.2 The interface point will remain same irrespective of the installed capacity of RSPV system. The connectivity levels at which the rooftop solar PV system shall be connected with the distribution system shall be as provided in the UP (Electricity Supply Code) Regulations, 2005 and subsequent amendments thereof.
- 8.3 The eligible consumer shall be responsible for safe operation, maintenance and rectification of any defect of the rooftop solar PV system up to the interconnection point beyond which the responsibility of safe operation, maintenance and rectification of any defect in the distribution system including the meter/net meter as the case may be shall rest with the Distribution Licensee.
- 8.4 The Distribution Licensee shall have the right to disconnect the rooftop solar PV system at any time in the event of possible threat/damage, from such rooftop solar PV system to its distribution system, to prevent an accident or damage. Subject to Regulation 8.3, the Distribution Licensee may call upon the eligible consumer to rectify the defect within a reasonable time.

9 Metering arrangement

- 9.1 All the meters shall adhere to the standards and provisions specified in CEA (Installation and Operation of Meters), Regulations, 2006 and subsequent amendments thereof.



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 the weighted average tariff of Large Scale Solar projects of 5MW and more, discovered through Competitive Bidding in last Financial Year and adopted by the Commission plus an incentive of 25%. E.g. For FY 2018-19, weighted average tariff of large Solar projects of 5 MW and more discovered through Competitive Bidding in FY 2017-18 and adopted by the Commission plus an incentive of 25% shall be applicable. In case no bidding is done in previous Financial Year, then the last applicable tariff for gross metering shall continue.

- (iii) Rebate and late payment surcharge on early or delayed payment of the Solar Injection Compensation as the case may be shall be levied in the same manner as per the procedure laid down by the Commission in the UPERC (Electricity Supply Code) Regulations, 2005 and subsequent amendments thereof;

Provided that such rebates/ delayed payment surcharge as the case may be shall also be payable to the third party owner in the same manner as per procedure specified for the consumer of the Licensee in the UPERC (Electricity Supply Code) Regulations, 2005 and subsequent amendments thereof;

- (iv) There shall be no deemed generation charges payable to the eligible consumer or third party owner of the solar rooftop system.
- (v) The Distribution Licensee shall be responsible for billing of the electricity injected by the rooftop solar PV system into the distribution system. The bills prepared by the distribution license shall necessarily include the following:
- a) Quantum of electricity injected into the distribution system by the rooftop solar PV system.
 - b) Quantum of Solar Injection Compensation payable by the Licensee.

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

Provided also that Licensee shall reimburse the eligible consumer or third party owner of the solar rooftop system as the case may be, within the due date of the electricity bill of the consumer in whose premises the rooftop solar PV system has been installed

10.4 The energy accounting and settlement procedure for consumers installing and operating rooftop solar PV system under net metering arrangement shall be as per the following procedure:

- (i) For each billing period, the Licensee shall show the quantum of electricity injected by the rooftop solar PV system in the billing period, supplied electricity



- 9.2 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.
- 9.3 The location of appropriate meter(s) shall be in accordance with the CEA (Installation and Operation of Meters), Regulations, 2006 as amendments from time to time and the UPERC (Grid Code) Regulations, 2007 as amendments from time to time.
- 9.4 The installation of check meters shall be mandatory for rooftop solar PV system having rated capacity more than 50 kW. For installations having rated capacity up to 50 kW, the eligible consumer or the Distribution Licensee who so ever if 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 solar rooftop system
- 9.5 The specification and standards of the check meter shall be same as or better than the consumer meter installed at the premises of the eligible consumer.
- 9.6 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.

10 Energy Accounting and Settlement

- 10.1 Meter readings shall be taken as per the applicable cycle as provided in the UPERC (Electricity Supply Code) Regulations 2005 and subsequent amendments thereof;
- 10.2 In the case of rooftop solar PV system under gross metering arrangement, the Licensee shall undertake energy accounting and settlement with either the eligible consumer or the third party owner whosoever is a signatory of the interconnection agreement with the Licensee.
- 10.3 The energy accounting and settlement procedure for eligible consumers/third party owners installing and operating rooftop solar PV system under Gross Metering shall be as per the following procedure:
- For each billing period, the Licensee shall show the quantum of electricity injected by the rooftop solar PV system installed at the premises of the eligible consumer in the billing period.
 - 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 the rooftop solar PV system during the billing period by way of 'Solar Injection Compensation'.



by Distribution Licensee in the billing period, net billed electricity for payment by the consumer for that billing period and net carried over electricity to the next billing period separately;

- (ii) If the electricity injected exceeds the electricity consumed during the billing period, such excess injected electricity shall be carried forward to next billing period as electricity credit and may be utilized to net electricity consumed in future billing periods but within the settlement period;
- (iii) If the electricity supplied by the Distribution Licensee during any billing period exceeds the electricity generated by the eligible consumer's rooftop solar PV system, the Distribution Licensee shall raise invoice for the net electricity consumption after taking into account any electricity credit balance remaining from previous billing periods;

Provided, in case the eligible customer 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.

Provided also that the excess electricity measured in kilo-watt hour may only be utilized to offset the consumption measured in kilo-watt hour and may not be utilized to compensate any other fee and charges imposed by the Distribution Licensee as per the instructions of Commission

Provided also that in Net Metering arrangement, at the end of each settlement period, any electricity credits, which remain unadjusted, shall be paid at a Net Metering Rate of Rs 2/kWh by the Distribution Licensee or as notified by the Commission from time to time.

Provide further that at the beginning of each settlement period, cumulative carried over electricity credits shall be reset to zero.

- (iv) When an eligible consumer leaves the system, the unused electricity credits for that consumer in case of Net Metering arrangement shall be paid at Net Metering Rate of Rs 2/kWh by the Distribution Licensee or as notified by the Commission from time to time.
- (v) 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 governed by the agreement between them. The third party aggregator shall not be charged by DISCOM any fixed charges on this account but shall be charged for imported energy as per prevailing Rules and Regulations.
- (vi) There shall be no deemed generation charges payable to the eligible consumer.



- (vii) In case the applicable tariff provides for billing on kVAh basis, the net drawl or injection of energy shall also be measured in kVAh.
- (viii) Regardless of availability of electricity credits with the eligible consumer during any billing period, the consumer shall continue to pay applicable charges such as fixed/ demand charges, Government levy etc.
- (ix) The Distribution Licensee shall necessarily provide the following details along with the electricity bill relating to each billing period:
- Quantum of electricity generated from the rooftop solar PV system.
 - Quantum of electricity injected into the distribution system by the rooftop solar PV system.
 - Quantum of electricity supplied by the Distribution Licensee to the eligible consumer.
 - Quantum of net electricity that has been billed for payment by the eligible consumer.
 - Quantum of electricity credits available to the eligible consumer which is carried over from the previous billing period.
 - Quantum of electricity injected into the distribution system in excess of the drawl by the eligible consumer (quantum of electricity credits) which shall be carried forward to the next billing period.
 - Billing Credits carried forward from the last billing period to next billing period, if any.

10.5 In case of any dispute in billing it would be settled by the Consumer Grievance Redressal Forum and if issue still remains unresolved, it shall be settled by the Ombudsman following appropriate procedure.

11 Applicability of other charges

In rooftop solar PV system under gross metering scheme or net metering scheme, whether self-owned or third party owned and installed on eligible consumer premises shall be exempted from wheeling and cross subsidy surcharge.

12 Solar Renewable Purchase Obligation

- 12.1 In case of gross metering scheme, the quantum of solar electricity generation by eligible consumer, who is not defined as Obligated entity, from the rooftop solar PV system shall qualify towards compliance of Renewable Purchase Obligation (RPO) for the Distribution Licensee in whose area of supply the eligible consumer is located.
- 12.2 In case of net metering scheme the total quantum of solar electricity generated under the net metering arrangement by eligible consumer, who is not defined as Obligated entity, shall qualify towards Renewable Purchase Obligation (RPO) for the Distribution Licensee in whose area of supply the eligible consumer is located.



13 Eligibility to participate under Renewable Energy Certificate Mechanism

- 13.1 Nothing contained in these Regulations shall apply to the Solar PV generator intending to sell power under the Renewable Energy Certificate Mechanism and he shall be free to sell power under such mechanism as per the provisions of 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 and UPERC (Promotion of Green Energy through Renewable Purchase Obligation) Regulations, 2010.
- 13.2 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.

14 Penalty or Compensation

In case of failure of gross metering or net metering system as the case may be, the provisions of penalty or compensation shall be as per the provisions of the provided in the UPERC (Electricity Supply Code) Regulations, 2005 and subsequent amendments thereof or as determined by the Commission from time to time.

15 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.

16 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.

17 Power to amend

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

By the order of the Commission

Secretary



**Annexure-I
APPLICATION FEES**

S.No.	Connected Load / Contract Demand of Eligible Consumer	Amount
1.	Up to 50 kW / 63 kVA	Rs 250
2.	Above 50 kW and up to 1 MW	Rs 750
3.	Above 1 MW (for upto each additional MW)	Rs 750

The amount of application fee for eligible consumer and third party other than the owner of the premises shall be the amount mentioned above.

REGISTRATION FEES

S.No.	Connected Load / Contract Demand of Eligible Consumer	Amount
1.	Up to 50 kW / 63 kVA	Rs 1000
2.	Above 50 kW and up to 1 MW	Rs 2500
3.	Above 1 MW (for upto each additional MW)	Rs 2500

The amount of registration fee for eligible consumer and third party other than the owner of the premises shall be the amount mentioned above.



Annexure-II

INFORMATION RELATED TO TECHNICAL & INTERCONNECTION STANDARDS

Parameter	Reference	Requirement
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 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	While the output of the inverter is greater than 50%, a lagging power factor of greater than 0.9 should operate.



UPERC RSPV Regulations, 2019

Parameter	Reference	Requirement
	2013 and Subsequent amendments thereof;	
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 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.



Annexure-III (A)

Inter connection agreement (Gross Metering Arrangement)

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

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

Distribution Licensee (herein after called as 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 RSPV plant of capacity kW into the power
system of Licensee and as per conditions of this agreement and RSPV Regulations/Orders issued by the Uttar
Pradesh Electricity Regulatory Commission.

Both the parties hereby agree to as follows:

1. Eligibility

- 1.1. Eligibility for Gross Metering arrangement has been specified in the UPERC (Rooftop Solar PV Grid Interactive System Gross/Net Metering) Regulations, 2019 (hereinafter referred to as RSPV 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 PV generation plant 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.

- 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. UPERC Electricity Grid Code, 2007 and subsequent amendments thereof;
- v. UPERC (Grant of Connectivity to intra-State Transmission System) Regulations, 2010 and subsequent amendments thereof to the extent specified in the UPERC RSPV Regulations, 2019;
- vi. UPERC Supply Code Regulations 2005 and subsequent amendments thereof;
- vii. Any other provisions applicable to the electricity consumer of the Distribution Licensee.

- 2.2. First Party 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 First Party agrees that in case of a power outage Licensee's system, photovoltaic system will disconnect/isolate automatically and his plant will not inject power into Licensee's distribution system.



- 2.4. All the equipment 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) Regulations, 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 UPERC 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, First Party agrees that if it is determined by the Licensee that the respective owner's photovoltaic system either causes damage to and/or produces adverse effects affecting other consumers or Licensee's assets, First Party 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 First Party agrees to obtain all the necessary approvals and clearances (environmental and grid connection related) before connecting the photovoltaic system to the distribution system.

4. Access and Disconnection

- 4.1. Licensee shall have access to metering equipment and disconnecting means of the solar photovoltaic 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 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
- 5.4. The Licensee may consider the quantum of electricity generation from the Rooftop Solar PV system towards RPO.

6. Commercial Settlement

- 6.1. All the commercial settlement under this agreement shall follow the RSPV Regulations, 2019 issued by the UPERC.

7. Connection Costs

- 7.1. The First Party shall bear all costs related to setting up of photovoltaic 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 photovoltaic system to the grid in case it is required.

8. Termination

- 8.1. The First Party can terminate agreement at any time by providing Licensee with 90 days prior notice.
- 8.2. Licensee has the right to terminate Agreement on 30 days prior written notice, if First Party commits 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.



UPERC RSPV Regulations, 2019

8.3. First Party shall upon termination of this Agreement, disconnect the photovoltaic 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 on behalf of (Licensee) sign this agreement in two originals.

Eligible Consumer/ Third Party

Name

Address

Service connection No.

Distribution Licensee

Name

Designation

Office Address



Annexure-III (B)

Inter connection agreement (Net Metering Arrangement)

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

The Eligible Consumer(s) by the name ofhaving or leasing the
premises at (address)as first party

AND

Distribution Licensee (herein after called as 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 RSPV plant of capacity kW into the
power system of Licensee and as per conditions of this agreement and Regulations/Orders issued by the Uttar
Pradesh Electricity Regulatory Commission.

Both the parties hereby agree to as follows:

1. Eligibility

- 1.1. Eligibility for Net-Metering/Net- Billing arrangement has been specified in the UPERC (Rooftop Solar PV
Grid Interactive System Gross / Net Metering) Regulations, 2019 (hereinafter referred to as RSPV
Regulations, 2019). 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

- 2.1. The eligible consumer agrees that his Rooftop Solar PV generation plant and Net Metering/Net- Billing
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.
- Central Electricity Authority (Technical Standards for connectivity of the Distributed Generating
Resources) Regulations, 2013 and subsequent amendments thereof;
 - Central Electricity Authority (Installation and Operation of Meters) Regulation 2006 and subsequent
amendments thereof;
 - Central Electricity Authority (Measures of Safety and Electricity Supply) Regulations, 2010
and subsequent amendments thereof;
 - UPERC Electricity Grid Code, 2007 and subsequent amendments thereof;
 - UPERC (Grant of Connectivity to intra-State Transmission System) Regulations, 2010 and
subsequent amendments thereof to the extent specified in the UPERC RSPV Regulations, 2019;
 - UPERC Supply Code Regulations 2005 and subsequent amendments thereof;
 - Any other provisions applicable to the electricity consumer of the Distribution Licensee.
- 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
disconnect/isolate automatically and his plant will not inject power into Licensee's distribution system.



UPERC RSPV Regulations, 2019

8.2. Licensee has the right to terminate Agreement on 30 days prior written notice, if eligible consumer commits 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. Eligible consumer shall upon termination of this Agreement, disconnect the photovoltaic 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) and Mr. for and on behalf of (Licensee) sign this agreement in two originals.

Eligible Consumer

Name

Address

Service connection No.

Distribution Licensee

Name

Designation

Office Address

[Signature]

[Signature]

[Signature]



- 2.4 All the equipment 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) Regulations, 2010.
- 2.5. Eligible consumer agrees that Licensee will specify the interface/interconnection point and metering point.
- 2.6. Eligible consumer and Licensee agree to comply with the relevant CEA and UPERC 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 connection related) before connecting the photovoltaic system to the distribution system.

4. Access and Disconnection

- 4.1. Licensee shall have access to metering equipment and disconnecting means of the solar photovoltaic 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 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
- 5.4. The Licensee may consider the quantum of electricity generation from the Rooftop Solar PV system towards RPO.

6. Commercial Settlement

- 6.1. All the commercial settlement under this agreement shall follow the RSPV Regulations, 2019 issued by the UPERC.

7. Connection Costs

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

8. Termination

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