

HIMACHAL PRADESH ELECTRICITY REGULATORY COMMISSION, SHIMLA

NOTIFICATION

Shimla, the 22nd January, 2015

No. HPERC– H (1)-11/2015:- WHEREAS the National Electricity Policy notified by the Central Government mandates promotion of renewable technology on sustainable basis. Among the various renewable sources, the solar power offers clean, climate-friendly, abundant and inexhaustible energy resource;

AND WHEREAS there is a huge potential of Small Hydro power in the State of Himachal Pradesh and considerable progress has been achieved towards exploitation of such potential in the State. At the same time, the Himachal Pradesh, being a hilly State, has generally clear sky and average solar radiation level, favours commercial as well as domestic application of solar power. The Central Government has estimated 34 GW solar power potential in State out of 749 GW estimated in the country;

AND WHEREAS the Central Government, having recognised the importance of solar power technology at national level, unveiled a plan to produce 20 GW of solar power by the year 2022 and further revised the target to 100 GW out of which substantial exploitation is planned through rooftop Solar PV projects;

AND WHEREAS there is large potential available for generating power using unutilized space on rooftops and wastelands around buildings, installation of rooftop Solar PV projects by the consumer would enhance grid stability and reduce distribution losses and also result in saving in electricity bills of the consumer and sale of surplus power to the distribution licensee through net metering;

AND WHEREAS the Himachal Pradesh Electricity Regulatory Commission, recognizes the need for a net metering based regulations, for rooftop Solar PV projects, to address the regulatory domain for implementation of grid connected net metering based rooftop Solar projects;

NOW, THEREFORE, in exercise of the powers conferred by section 181, read with sections 61, 66, and 86(1) (e) of the Electricity Act, 2003 (36 of 2003), and all other powers enabling it in this behalf, the Himachal Pradesh Electricity Regulatory Commission proposes to make the regulations i.e. the Himachal Pradesh Electricity Regulatory Commission (Rooftop Solar PV Grid Interactive Systems based on Net Metering) Regulations, 2015, and the draft of the proposed regulations, as required by sub-sections(3) of section 181 of the Act (ibid), read with rule 3 of the Electricity (Procedure for Previous Publication) Rules, 2005, is hereby published for the information of all the persons likely to be affected thereby; and notice is hereby given that the said draft regulations will be taken into consideration after the expiry of thirty days from the date of their publication in the Rajpatra, Himachal Pradesh, together with any objections or suggestions which may within the aforesaid period be received in respect thereto.

The text of the aforesaid draft regulations is also available on the website of the Commission i.e. <http://www.hperc.org>.

The objections or suggestions in this behalf should be addressed to the Secretary, Himachal Pradesh Electricity Regulatory Commission, Keonthal Commercial Complex, Khalini, Shimla- 171002.

DRAFT REGULATIONS

1. Short title and commencement.- (1) These regulations may be called the Himachal Pradesh Electricity Regulatory Commission (Rooftop Solar PV Grid Interactive Systems based on Net Metering) Regulations, 2015.

(2) These regulations shall come into force from the date of their publication in the Rajpatra, Himachal Pradesh.

2. Definitions. - In these regulations, unless the context otherwise requires,-

- (1) “**accuracy class index**” means the index as specified in the Schedule to the Central Electricity Authority (Installation and Operation of Meters) Regulations, 2006;
- (2) “**Act**” means the Electricity Act, 2003 (36 of 2003);
- (3) “**agreement**” means the agreement entered into for connecting rooftop Solar PV system to the distribution system;
- (4) “**applicable tariff**” means the tariff applicable for supply of electricity by the licensee to the consumer in accordance with relevant Schedule of tariff as per tariff order of the Commission;
- (5) “**billing period**” means the period for which regular electricity bills as specified by the Commission, are prepared by the licensee for different categories of consumers;
- (6) “**Commission**” means the Himachal Pradesh Electricity Regulatory Commission;
- (7) “**distribution licensee**” or “**licensee**” means a person granted a licence under Section 14 of the Act authorizing him to operate and maintain a distribution system for supplying electricity to the consumers in his area of supply;
- (8) “**Electricity Supply Code**” means the Electricity Supply Code specified under section 50 of the Act;
- (9) “**eligible consumer**” means such HT or EHT consumer of electricity in the area of supply of the distribution licensee, who uses, or intends to use a rooftop Solar PV system installed in his premises, to offset part or all of the consumer's own electrical requirements and shall also include such other categories of consumers who may be covered, by order of Commission, under net metering scheme from time to time;
- (10) “**financial year**” or “**year**” means the period beginning from the first of April in an English calendar year and ending with the thirty first of the March of the next year;
- (11) “**Form**” means the Form appended in these regulations ;
- (12) “**interconnection**” means the interface of solar power generation facility system with the network of the distribution licensee;

- (13) “**invoice**” means either a periodic bill / supplementary bill or a periodic invoice/ supplementary invoice raised by the distribution licensee;
- (14) “**kWp**” means kilo Watt peak;
- (15) “**net meter**” means the meter, alongwith allied metering equipments, to be installed and maintained by the licensee at the cost of the consumer, for reading the net import or export of electrical energy by the consumer from/ to the distribution system and the corresponding demand or injection;
- (16) “**net metering**” means an arrangement under which rooftop solar system installed at 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;
- (17) “**Obligated Entity**” means the entity mandated under clause (e) of sub-section (1) of section 86 of the Act to fulfill the renewable purchase obligation and under Himachal Pradesh Electricity Regulatory Commission (Renewable Power Purchase Obligation and its Compliance) Regulations, 2010;
- (18) “**premises**” means rooftops or/and elevated areas on the land, building or infrastructure or part or combination thereof in respect of which a separate meter or metering arrangements have been made by the licensee for supply of electricity;
- (19) “**Renewable Energy Certificate (REC)**” means the certificate issued in accordance with the procedures approved by the Central Electricity Regulatory Commission pursuant to Central Electricity Regulatory Commission (Terms and Conditions for recognition and issuance of Renewable Energy Certificate for Renewable Energy Generation) Regulations, 2010;
- (20) “**rooftop Solar system**” means the Solar photo voltaic power system installed on the rooftops of consumer premises that uses sunlight for direct conversion into electricity through photo voltaic technology;
- (21) “**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;
- (22) All other words and expressions used in these regulations although not specifically defined herein, 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 or any other regulations issued by the Commission, applicable to the electricity industry in the State, shall have the meaning assigned to them in such law/regulation.

3. Scope and application.- (1) These regulations shall apply to the distribution licensee and the eligible consumers of the distribution licensee.

(2) These regulations do not preclude the right of State authorities to undertake rooftop solar projects of any capacities through alternative mechanisms.

4. General Principles.- Subject to the limits and other term and conditions specified in these regulations, the eligible consumers of the distribution licensee shall be entitled to install rooftop solar PV system and use the power so generated at their premises. The surplus power can be injected into the grid system.

- 5. Capacity of Rooftop Solar PV Systems.-** (1) All eligible consumers of electricity in the area of supply of the distribution licensee can participate in the solar rooftop net metering arrangement.

(2) The maximum peak capacity of the rooftop solar system to be installed by any individual consumer shall not exceed 80 % of the sanctioned contract demand:

Provided that the capacity of rooftop solar system to be installed by an eligible consumer shall not exceed 1 MWp:

Provided further that the cumulative capacity to be allowed in the area fed from a transformer or any other transformer from which power is fed to the eligible consumer shall not exceed 30%, or any other percentage as may be fixed by the Commission, of the rated capacity of such transformer(s):

Provided further that in case of multiple applications from the consumers covered by a transformer for participation in the scheme, the connectivity with the solar PV system shall be allowed on first come first serve basis.

- 6. Capacity of transformer.-** The distribution licensee shall provide information on its website regarding capacity available in different transformer(s) for feeding the eligible consumer at different locations for connecting Rooftop Solar PV System under net metering arrangement within 3 (three) months from the date of commencement of these regulations, and shall update the same within one month of the subsequent financial year under intimation to the Commission.

- 7. Procedure for making application and registration.-** (1) The eligible consumer may make the application, delivered by post or by hand or through any electronic mode such as online submission and e-mail etc., as per Form-1, to the distribution licensee to connect the rooftop solar system to the distribution system of the distribution licensee. The distribution licensee shall make available format of the Form-1 on its website and also at its local offices.

(2) The distribution licensee shall acknowledge the application and take all necessary actions including sending appropriate communications to the applicant:

Provided that where an application is received through electronic mode, the acknowledgment and other communication shall be served through such electronic mode also and its hard copy shall be sent to the applicant by post or by hand delivery.

- 8. Interconnectivity, Standards and Safety.-** (1) The distribution licensee shall ensure that-
- (i) the interconnection of the rooftop solar system with the distribution system of the licensee 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;

(ii) the interconnection of the rooftop solar system with the distribution system of the licensee conforms to the relevant provisions of the Central Electricity Authority (Measures relating to Safety and Electricity Supply), Regulations, 2010.

(2) The eligible consumer may install grid interactive Rooftop Solar PV Renewable Energy System with or without battery backup:

Provided that if the eligible consumer, prefers connectivity with battery backup (full load backup/partial load backup), in all such cases the inverter shall have separate backup wiring to prevent the battery/ Decentralized Generation(DG) power to flow into the grid in the absence of grid supply and manual isolation switch shall also be provided.

(3) The eligible consumer shall be responsible for safe operation, maintenance and rectification of any defect of the rooftop solar system upto the point of net meter beyond which the responsibility of safe operation, maintenance and rectification of any defect in the system, including the net meter, shall rest with the distribution licensee.

(4) The distribution licensee shall have the right to disconnect the rooftop solar system at any time in the event of possible threat/damage, from such rooftop solar system to its distribution system, to prevent an accident or damage. Subject to sub-regulation (3), the distribution licensee may call upon the eligible consumer to rectify the defect within a reasonable time.

(5) The distribution licensee and the eligible consumer shall sign the Net Metering Connection Agreement as per Form-2. The distribution licensee may modify the said Form, or add such conditions to it, as it may find necessary.

9. Metering arrangement.- (1) Net meter as well as solar generation meter, capable of measuring the net flows and total generation respectively, shall be installed and maintained at the cost of eligible consumer by the distribution licensee and these meters shall be compliant to the system of recording meter reading through Meter Reading Instrument (MRI) or through wireless:

Provided that if bills are prepared on the basis of MRI downloads or if meter reading is taken on the basis of remote meter reading and the consumer wants to have a record of the reading taken, he shall be so provided by the licensee.

(2) The meters installed shall be jointly inspected and sealed on behalf of both the parties.

(3) Notwithstanding anything contained in sub-regulation (2), the meter reading taken by the distribution licensee shall form the basis of commercial settlement.

(4) All the meters shall adhere to the standards as specified in Central Electricity Authority (Installation and Operation of Meters) Regulations, 2006 and the Central Electricity Authority (Installation and Operation of Meters)(Amendment) Regulations, 2010.

(5) All the meters to be installed for net metering shall be of the same or of better Accuracy Class Index than the existing meter installed for measuring the supply of the power to the consumer.

(6) To facilitate easy access for meter reading to the distribution licensee, all meters shall be installed at an accessible location of the premises.

(7) The net meter to be installed for the eligible consumer shall be compliant to the requirements as per the applicable tariff including those relating to time of day (ToD) tariff.

10. Energy Accounting and Settlement.- (1) The accounting of electricity generated, consumed and injected by the Rooftop Solar PV Generator under these regulations shall become effective from the date of connectively of such system with the distribution system under these regulations.

(2) The distribution licensee shall reflect in the bill the energy units exported or imported, as the case may be, by the consumer during the billing period; and the amount payable for each component of tariff (i.e. Energy charges and Demand Charges etc.).

(3) Billing shall be done on the basis of the flows recorded by the net meter.

(4) The billing or adjustment, as the case may be, of the various charges as per the applicable tariff as well as for the net export (i.e. injection by the consumer) shall be done in the following manner:-

(i) **Energy Charges:-**

(A)The net import of energy by the consumer (i.e. net draws from the licensee's system) over the billing period shall be charged from the consumer at the rate(s) applicable as per the applicable tariff:

Provided that where different rates of energy charges are applicable for different times of the day (normal, peak and night hours etc.) as per the applicable tariff, the net flow (import or export, as applicable) of electrical energy for the respective times of the day, as envisaged in the applicable tariff, over the billing period shall be metered and recorded separately and the net import of energy by the consumer (i.e. net draws from the licensee's system) during each such time of the day over the billing period shall be charged from the consumer at the rates applicable for respective times of the day as per the applicable tariff;

(B) The net export of energy by the consumer (i.e. net injection to the licensee's system) over the billing period shall be paid to the consumer, by way of adjustment in the bill, at the rate(s) as the Commission may fix from time to time for various categories of eligible consumers and while doing so, it may also duly take into account various relevant factors such as grant or subsidy or both, available from the Government agencies:

Provided that the following rate(s) shall be applicable for a period of 5 years from the date of commencement of these regulations, or for such further period(s) as may be extended by Commission from time to time-

- (a) if the amount of subsidy or grant or both, available to eligible consumer from Government agencies does not exceed 50% of the capital cost of the Rooftop Solar PV system, the rate shall be equivalent to the rate of energy charge applicable for the normal hours (day) as per the applicable tariff, irrespective of the time in which such export has taken place;
- (b) if the amount of subsidy or grant or both, available to eligible consumer from Government agencies exceeds 50% of the capital cost of the Rooftop Solar PV system, the rate shall be equivalent to 50% of the rate of energy charge applicable for the normal hours (day) as per the applicable tariff, irrespective of the time in which such export has taken place.

(ii) Demand Charges:-

The licensee shall charge the demand charges, including the additional demand charges for peak load hours and the contract demand violation charges, from the consumer as per the provisions of applicable tariff:

Provided that actual net demand of power, drawn from the distribution system, during any demand period shall be considered as the actual demand of the consumer in that demand period:

Provided further that average demand for any time of day block of the billing period shall also be worked out on the basis of the net import, if any, of energy from the distribution system in respect of respective times of the day over the billing period.

(iii) Other charges:-

Any other charges as per the applicable tariff shall be charged to the consumer at par with other consumers of similar category who are not generating any Roof Top Solar PV power under this scheme.

- (iv) Where slab rates are applicable as per the applicable tariff, such slab rates shall be applicable for net energy/demand to be billed for a month.

(5) There shall be no deemed generation charges payable to the eligible consumer generating energy from rooftop Solar PV system.

(6) In case the applicable tariff provides for billing on kVAh basis, the net drawl or injection of energy shall also be measured in kVAh.

(7) The distribution licensee in addition to applicable tariff shall be eligible to raise invoice for any other charges as allowed by the Commission.

11. Exemption from wheeling, banking and cross subsidy surcharge.- Subject to any other provisions in these regulations, the Rooftop Solar PV system under net metering arrangement shall be exempted from wheeling, banking and cross subsidy surcharge for a period of Five (5) years, unless extended thereafter.

12. Renewable Power Purchase Obligation.- The quantum of electricity generated under these regulations shall qualify towards compliance of Renewable Power Purchase Obligation (RPPO) of the distribution licensee:

Provided that where an eligible consumer is an obligated entity, the quantum of electricity generated by him over and above his Renewable Power Purchase Obligation shall qualify towards compliance of Renewable Power Purchase Obligation of the distribution licensee.

13. Participation under Renewable Energy Certificate Mechanism.- (1) Nothing contained in these regulations shall apply to the Solar PV generator intending to sell power under Renewable Energy Certificate mechanism and he shall be free to sell power under such mechanism, as per the provisions of the Central Electricity Regulatory Commission (Terms and Conditions for recognition and issuance of Renewable Energy Certificate for Renewable Energy Generation) Regulations, 2010.

(2) The eligibility for Renewable Energy Certificate and issue of such certificate for Renewable Energy shall be as per the eligibility criteria specified under the Central Electricity Regulatory Commission (Terms and Conditions for recognition and issuance of Renewable Energy Certificate for Renewable Energy Generation) Regulations, 2010.

14. Penalty or Compensation.- In case of failure of net metering system, the provisions of penalty or compensation shall be applicable as per the provisions of the HPERC(Distribution Performance Standards) Regulations, 2010.

15. Power to remove difficulties.- If any difficulty arises in giving effect to any of the provisions of these regulations, the Commission may, by a general or special order, make such provisions not being inconsistent with the provisions of these regulations or the Act, as may appear to be necessary or expedient for the purpose of removing the difficulties.

16. **Powers to give directions.-** The Commission may from time to time issue such directions/ guidelines/ orders as it may consider deemed fit or appropriate for the implementation of these regulations and also removal of difficulty, if any.
17. **Powers to relax.-** The Commission may by general or special order, for reasons to be recorded in writing, may relax any of the provisions of these regulations on its own motion or on an application made before it by an interested person.
18. **Powers to amend.-** Subject to the provisions of Electricity Act, 2003, 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/-
Secretary

Form-1
Net Metering Application

To
Designated Officer
(Name of office)

Date:

I/we herewith apply for a solar energy net- metering connection at the service connection and for the Rooftop Solar PV Plant of which details are given below.

1	Name of applicant	
2	Address of applicant	
3	K-Number (A/C No.)	
4	Sanctioned Contract Demand(kVA)	
5	Applicable tariff / Category	
6	Telephone number(s)	
7	Email ID	
8	Rooftop Solar PV Plant Capacity (Watts)	
9	Solar grid inverter make and type	
10	Solar grid inverter has automatic isolation protection (Y/N)	
11	Has a Solar Generation Energy Meter been installed (Y/N)	
12	Expected date of commissioning of Solar PV System	

Name:

Signature

Net Metering Application Acknowledgement

Received an application for a solar energy net – metering connection from,

Name.

Date:

K-Number (A/C No.)

Application registration no.:

Solar Plant Capacity

Name of Officer

Signature

Designation/ Distribution Licensees

FORM-2

Net Metering Connection Agreement

This Agreement is made and entered into at (location).....on this (date)day of (month)..... Between who is a consumer of the distribution licensee with sanctioned contract demand of kVA at and intends to install Rooftop Solar PV Grid Interactive System at his premises(address)..... as **First party, and.**

..... distribution Licensee (herein after called as..... (*Name of Discom*) and having its registered office at(address)..... as **Second party** of the agreement.

And whereas, the(*Name of Discom*).....agrees to facilitate the Rooftop Solar PV Energy Generator for the electricity generated from his Rooftop Solar PV Grid Interactive System of capacity.....watts and as per conditions of this agreement and net- metering regulations/ orders issued by the Himachal Pradesh Electricity Regulatory Commission.

Both the party hereby agrees to as follows:

1. Eligibility

1.1 Eligibility for net- metering shall be as specified in the Himachal Pradesh Electricity Regulatory Commission (Rooftop Solar PV Grid Interactive System based on Net Metering) Regulations, 2015. First Party 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 First Party agrees that his Solar PV generation plant and net- metering system will conform to the Standards and requirements mentioned in the following Regulations, codes and any other relevant provisions and also that he shall be continued to be governed by all such regulations, codes and other relevant provisions.-

- (i) the Central Electricity Authority (Technical Standards for connectivity of the Distributed Generating Resources) Regulations, 2013;
- (ii) the Central Electricity Authority (Installation and Operation of Meters) Regulation 2006;
- (iii) the Himachal Pradesh Electricity Distribution Code, 2008;
- (iv) the Himachal Pradesh Electricity Supply Code, 2009;
- (v) 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 Second Party's distribution system, an isolation device (both automatic and inbuilt within inverter in case of Solar PV Generation and external manual relays) and agrees for the Second Party to have access to and operation of

- this, if required and for repair (*Name of Discom*).....and maintenance of the distribution system.
- 2.3 First Party agrees that in case of a power outage on Second Party's system, Photovoltaic System will shut down, automatically and his plant will not inject power into Licensee's distribution system.
 - 2.4 All the equipment connected to distribution system must be compliant with relevant international (IEEE/IEC) or Indian standards (BIS) and installations of electrical equipment must comply with the 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 agrees to comply with the relevant CEA regulations in respect of operation and maintenance of the plant, drawing and diagrams, site responsibility schedule, harmonics, synchronization, voltage frequency, flicker etc.
 - 2.7 Due to Second Party obligation to maintain a safe and reliable distribution system, eligible consumer agrees that if it is determined by the Second Party that First Party's Photovoltaic System either caused damage to and/or produces adverse effects affecting other consumers or Second Party's assets, First Party will have to disconnect Photovoltaic System immediately from the distribution system upon direction from the Second Party and correct the problem at his own expense prior to a reconnection.

3. Clearances and Approvals

- 3.1 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 Second Party shall have access to metering equipment and disconnecting means of Photovoltaic System, both automatic and manual, at all times.
- 4.2 In emergency or outage situation, where there is no access to a disconnecting means, both automatic and manual, such as a switch or breaker, Second Party may disconnect service to the premise.

5. Liabilities

- 5.1 First Party and Second Party will indemnify each other for damages or adverse effect from either party's negligence or intentional misconduct in the connection and operation of Photovoltaic System or Second Party distribution system.
- 5.2 Second Party and First Party 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 Second Party shall not be liable for delivery or realization by First Party for any fiscal or other incentive provided by the Central/State Government beyond the scope specified by the Commission in its relevant order.

6. Commercial Settlement

6.1 All the commercial settlement under this agreement shall follow the Net –Metering Regulations and relevant Orders of Himachal Pradesh Electricity Regulatory Commission.

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 in case it is required.

8. Termination

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

8.2 Second Party has the right to terminate Agreement on 30 days prior written notice, if eligible consumer breaches a term of this Agreement and does not remedy the breach within 30 days of receiving written notice from Second Party of the breach

8.3 First Party agrees that upon termination of this Agreement, he must disconnect the Photovoltaic System from Second Party's distribution system in a timely manner and to Second Party's satisfaction.

In the witness, whereof of Mr.....for and on behalf of First Party and Mr.....for and on behalf of Second Party sign this agreement in two originals.

First Party
Name

Second Party
Name

Address
Designation

K-Number (A/C No.) of consumer

Office Address

❖ Discom :- Distribution Licensee of the area.