Guidelines under DERC (Net Metering for Renewable Energy) Regulations, 2014

Introduction:

To promote use of Renewable Energy Generation for self consumption of the consumer, Delhi Electricity Regulatory Commission has issued DERC (Net Metering for Renewable Energy) Regulations 2014, herein after referred to as Net Metering Regulations, 2014.

For effective and proper implementation of the Net Metering Regulations, 2014, the Delhi Electricity Regulatory Commission, in exercise of powers conferred under the Electricity Act, 2003 and under Regulation 14 of the Net Metering Regulations, 2014 hereby formulate the following guidelines:

1. Available Capacity at Distribution Transformer level for Net Metering

(1) Distribution Transformer level capacity to be offered for Connecting Renewable EnergySystem for Net Metering by the Distribution Licensee shall not be less than 20% (Twenty percent) of the rated capacity of respective distribution transformer.

(2) Save as 1(1) above and the capacity specified by the Distribution Licensee under Regulation 5(1) of Net Metering Regulations, 2014, the Commission at its sole discretion may appoint an independent agency to assess capacity that may be made available for offering connectivity from any/all of the distribution transformer(s) for Renewable EnergySystem by the Distribution Licensee.

2. General Conditions

Subject to the Regulation 30 of DERC (Supply code and Performance Standards Regulations), 2007 and subsequent clarification issued/amended by the Commission from time to time , enhancement of line capacity in terms of Regulation 5(4) of the Net Metering Regulations,2014 for already installed or intention for installation of a Renewable EnergySystem of Capacity higher than the sanctioned load of the consumer of the premises, the enhancement of such line capacity shall be used only for calculation of Service Line cum Development (SLD) charges and not for levying corresponding additional fixed charges.

3. Procedure for Application and Registration

The procedure for connectivity of Renewable EnergySystem under Regulation 6 of Net Metering Regulations, 2014 is a three tier process, which is as follows;

i) Feasiblity Analysis,
ii) Registration
iii) Connection Agreement.

The procedure adopted for these processes shall be as under:

Feasibility Analysis:

(1) The consumer shall submit an application, seeking connectivity under the Net Metering Regulations, 2014 in the specified format as per Annexure – I along with an application fee of Rs. 500/- (Rupees Five Hundred) only to the concerned Distribution Licensee for feasibility analysis.

(2) The Distribution Licensee shall acknowledge the receipt of the application form and shall record time, date & serial number of the receipt which shall form the basis for drawing the priority list, for further processing of applications on first cum first serve basis. Such a priority list having validity of one hundred and eighty (180) days from the date of receipt of application shall be displayed at prominent locations in the offices of the Distribution Licensee and to be uploaded on its website.

(3) In order of priority, the Distribution Licensee shall complete the feasibility analysis for connecting the Renewable EnergySystem to the distribution system within thirty (30) days from the date of receipt of the application..

(4) On feasibility analysis, if it is found that due to certain reasons including operational constraints it is not feasible for the Distribution Licensee to provide connectivity at all or upto the applied capacity i.e. connectivity is feasible for a reduced capacity, the Distribution Licensee shall specifically record the reasons thereof and subject to clause 5 of these guidelines, intimate in writing the same to the applicant(s) specifically mentioning that:

(a) the applicant has the option, to be exercised in writing, to either

(i) accept the connectivity for the reduced capacity and approach the Distribution Licensee to process the case; or

(ii) seek refund of its application fee either within seven (7) days of the receipt of the intimation; or

(iii) to stay in the priority list till its validity i.e. upto 180 (one hundred and eighty) days under clause 3(2) of these guidelines, for re-consideration and approval in case of future availability of applied capacity at the distribution transformer level etc. within such period.

(b) If the applicant seeks refund, the Distribution Licensee shall refund the application fee within seven (7) days from the date of receipt of intimation from the applicant in this regard. Thereafter, the Distribution Licensee shall notify the updated position of the remnant applicants in the priority list.

(c) In case the consumer opts to stay in the priority list and even in the validity period of priority list of one hundred and eighty (180) days the required capacity does not get available, the Distribution Licensee shall refund the application fee on its own within seven (7) days of expiry of such 180 (one hundred and eighty) days period;

(5) The Distribution Licensee shall seek prior approval of the Commission for not providing connectivity or offering connectivity for a reduced capacity.

(6) On feasibility analysis, if it is found feasible for the Distribution Licensee to provide connectivity for the applied capacity or a reduced capacity under clause 3(4)(a)(i), the Distribution Licensee within seven (7) days from the feasibility analysis shall inform all such applicants, to apply for registration and further processing. A Registration form as per Annexure – II shall also be furnished with the Intimation Letter containing the following information:

(a) Details of documents to be submitted by the applicant;

(b) Technical specifications including the essential safety features;

(c) Allowable capacity and technical specifications of the Renewable Energy Meter and Net Meter;

(d) Relevant abstract of the applicable Rules & Regulations;

(e) List of approvals / clearances required from respective authorities / agencies for installation of Renewable EnergySystem;

(f) Model Renewable EnergySystem line diagram for grid connectivity;

(g) Model Connection Agreement;

(h) SLD charges, if applicable as per Regulation 3(4);

(i) Applicable charges as specified by the Commission from time to time;

(j) Any other information/details as may be required to ensure safe and reliable operation of the distribution system with prior approval of the Commission;

(k) Important clauses related to the technical and interconnection requirements as stipulated in Annexure –III.

Registration:

(7) The applicant, within thirty (30) days from the date of receipt of the intimation regarding feasibility and capacity under clause 3(6) of these guidelines, shall apply for registration of his scheme for installation of the Renewable EnergySystem in the format specified in Annexure-II (Registration Form) along with requisite documents and the Registration Charges as stipulated below and other applicable charges:-

Sl. No.	Capacity (kW)	Charges (Rs)
1	1 to ≤ 10	1000/-
2	> 10 to ≤ 50	3000/-
3	> 50 to ≤ 100	6000/-
4	> 100 to ≤ 300	9000/-
5	> 300 to ≤ 500	12000/-
6	> 500	15000/-

(8) At the time of submission of Registration Form, the Distribution Licensee shall perform preliminary checks of all the documents submitted along with the Registration Form in the presence of applicant or his representative, and if found complete, shall receive the form and acknowledge its receipt.

(9) The Distribution Licensee shall scrutinize the Registration Form within forty five (45) days from the date of its receipt, and shall either

(a) allot a Registration Number to the applicant, if Registration Form is found complete and in order, or

(b) intimate the applicant about the deficiencies observed in the submitted Registration Form, if any, along with the instructions to cure such deficiencies.

(10) The consumer shall re-submit the Registration Form, along with the requisite documents, after curing the deficiencies contained therein within fifteen (15) days of the receipt of intimation.

(11) Within fifteen (15) days from the date of receipt of the re-submitted Registration Form, the Distribution Licensee shall scrutinize it and shall

(a) register the scheme and assign a registration number if Registration Form is found complete and in order;

(b) give a personal hearing to the applicant and also intimate in writing the deficiencies, found if any, in the Registration Form and/or the documents submitted by the applicant giving him a final opportunity to cure the deficiencies and its re-submission.

(12) The applicant within fifteen (15) days from such intimation shall cure the deficiencies and re-submit the Registration Form along with documents to the Distribution Licensee. If the Registration Form is found complete and in order, the Distribution Licensee shall register the scheme and assign a Registration Number to it. However, if it is observed that certain deficiencies still persist, the application for registration may be rejected under intimation to the Commission.

Connection Agreement:

(13) Within thirty (30) days from the date of registration, the Distribution Licensee and the Consumer shall execute a Connection Agreement. The Connection Agreement shall include clauses relating to interconnectivity, billing and settlement, dispute resolution and Standards as per Net Metering Regulations, 2014, relevant Guidelines, Orders thereof, as amended from time to time.

In case the applicant fails to execute the Connection Agreement for reasons assigned to him, the registration shall be treated as cancelled.

(14) The applicant shall avail the connectivity of the Renewable EnergySystem within one (1) year from the date of registration, failing which the registration may be cancelled under intimation to the Commission and the Distribution Licensee can proceed for allotment of such capacity to other applicants, strictly on the basis of first come first serve basis as per the available priority list.

(15) The applicant shall obtain requisite approvals, in accordance with the provisions of the Central Electricity Authority (Technical Standards for Connectivity of Distributed Generation Resources) Regulations, 2013 for commissioning of the Renewable Energy System, and furnish copies of approvals to the Distribution Licensee.

(16) The Distribution Licensee, within fifteen (15)days from the date of installation of the Renewable Energy System shall procure, test and install the Net Meter. In case the Net Meter is procured by the applicant, the Distribution Licensee, within fifteen (15) days from the intimation from the applicant regarding procurement of the Net Meter, shall test and install the Net Meter so procured.

(17) The Distribution Licensee shall, within fifteen (15) days of receipt of the intimation under Regulation 8(2) of the Net Metering Regulations, 2014 test the Renewable Energy System in the presence of the applicant as per the provisions of the Central Electricity Authority (Technical Standards for Connectivity of Distributed Generation Resources) Regulations, 2013 and shall provide the connectivity with the distribution system.

(18) Distribution Licensee may keep the entire information regarding application and registration of the Renewable Energy System on the website or web portal for transparency and convenience.

4. Interconnectivity, Standards and Safety

The right of the Distribution Licensee to disconnect the Renewable Energy System under Regulation 7(4) of the Net Metering Regulations, 2014 shall be governed by the Central Electricity Authority (Measures relating to Safety and Electric Supply), Regulations, 2010, as amended from time to time.

5. Metering Arrangement and Standards

(1) Cost of the Net Meter, which is capable of recording both import and export of electricity, shall mean the differential cost between existing consumer meter, if removed and such a new Net Meter is installed to be borne by the consumer.
In case net metering is done with the help of two unidirectional meters, the cost of additional meter, other than the existing consumer meter shall be borne by the consumer.

(2) Meters shall be Meter Reading instrument (MRI) compliant or AMR (Automatic Meter Reading) or AMI (Advanced Metering Infrastructure) compliant for recording meter readings.

6. Procedure of billing & accounting

Procedure of billing & accounting for a Consumer as determined by the Commission from time to time, in terms of Regulation 9.2 of Net Metering Regulations, 2014 shall be as follows:

(1) **Non Time of Day Tariff Consumers:**

If during any billing period, the export of units exceeds the import of units consumed, such surplus units injected by the consumer shall be carried forward to the next billing period as energy credit and shown as energy exported by the consumer for adjustment against the energy consumed in subsequent billing periods within the settlement period.

(2) **Time of Day Tariff Consumers**

a) 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 similar time blocks in the same billing cycle. For the purpose of carry forward of surplus or set off of energy credits, the energy units shall be moderated as per the relevant rebate/surcharge percentage of ToD tariff applicable for the relevant year. Any surplus generation over consumption in any time block in a billing cycle shall be accounted as if the surplus generation/ Energy Credits occurred during the off-peak time block. For the purpose of clarity, a sample calculation of moderation of units is at Annexure IV.

b) If the consumer is injecting energy into the distribution system in the peak hours or in a time block when Distribution Licensee is having more demand than the available energy, Distribution Licensee with the approval of the Commission may propose

incentives to such consumers to increase such generation to reduce costly short term power purchase of that time block.

7. Tariff at the end of financial year for surplus energy

The Consumer shall be paid for net energy credits which remain unadjusted at the end of the financial year at the rate of Average Power Purchase Cost (APPC) of the Distribution Licensee for the respective year on provisional basis. Subsequently after true up of the power purchase cost of the Distribution Licensee, by the Commission, adjustment amount between provisional rate and trued up rate of average power purchase cost shall be credited/debited to the account of consumer in the next billing cycle after issuance of the true up order of the relevant year by the Commission.

8. Theft and Tempering of Meter(s)

Theft of electricity and tampering of meter(s) shall be settled as per the relevant provisions of the Electricity Act 2003 and the DERC Supply Code and Performance Standards Regulations, 2007 ,as amended from time to time.

9. Dispute Resolution

Any dispute in billing shall be settled as per the DERC (Guidelines for Establishment of Forum for Redressal of Grievances of the Consumers and Ombudsman) Regulations, 2003.

10. Violation of guidelines

(1) In case of violation of these guidelines by any party viz. Consumer, Distribution Licensee and/or Renewable Energy Generator, the errant party shall be liable to pay penalty as decided by the Commission.

(2) The Commission may grant compensation to the affected party.

11. Powers to amend

The Commission has powers to amend, add vary, alter, suspend, modify or repeal provision(s) of these guidelines as and when it deems fit.

Jayshree Raghuraman
Secretary

Annexure-I

Application Form Number …… ……

APPLICATION FOR INTENT TO SEEK CONNECTIVITY OF RENEWABLE ENERGY SYSTEM
(Regulation 5.1)

1.	Name Full Address of Consumer		
2.	Consumer No. (CA. No.)		
3.	Category **(Domestic / Non Domestic/Commercial etc – SPECIFY)**		
4.	Telephone No	Res:	Mob:
5.	E.mail address		
6.	Sanctioned Load		
7.	Renewable Energy Source (Solar, wind , etc.)		
8.	Capacity of Renewable Energy System proposed to be connected		
9.	Whether the Consumer is under ToD billing system		Yes/No
10.	Type of Renewable Energy System proposed (Solar, Wind, Biomass etc – specify)		
11.	Location and address of Proposed Renewable Energy System (roof top, ground mounted, any other – specify)		
12.	Capacity of Renewable Energy System proposed to be connected		
13.	Preferred mode of Communication (Post/ By Hand/ Electronic etc – specify)		

Place:
Delhi: Signature of Consumer

……

ACKNOWLEDGEMENT

Application Number……..

Received the application for connectivity of Renewable Energy System

Name …… CA. No. ……
Date……....., Time ……..., Serial no. ……..
Application Fee Paid or Not
Renewable Energy Plant Capacity……. Renewable Energy Type……
Mode of payment (Cheque / DD/RTGS/NEFT)……..
Details of Cheque/DD/RTGS/NEFT……

Name of Officer **Signature**
Seal **(Designation of Officer)**
(To be Specified at the time of Signing)

Annexure-II

APPLICATION FOR REGISTRATION OF THE SCHEME FOR RENEWABLE ENERGY SYSTEM

1	Name	
2	Address for Communication	
3	Consumer No.,	
4	Telephone No.,	
5	E-mail	
6	Renewable Energy Source	
7	Application No.	
8	Serial No. of receipt of Application	
9	Contract Demand of Consumer	
10	Capacity of Renewable Energy System to be connected (Capacity not to exceed as approved by the Discom)	
11	Technical specifications and other particulars of Renewable Panel, Grid Tied Inverter and Interlocking System etc. proposed to be installed – whether attached (Yes/No)	
12	Technical specifications and other particulars of Renewable energy meter and Net Meter to be installed – whether attached (Yes/No)	
13	whether Consumer opts to purchase meter himself or from Distribution Licensee	
14	Drawings for installing the Renewable Energy System – whether attached (Yes/No)	
15	Proposed date of completion of the installation	

Place:
Delhi: Signature of Consumer

Acknowledgement

Received the application for registration of the scheme for Renewable Energy System

Name ……..
Date ……
Registration Number……
Consumer No. ……..
Renewable Plant Capacity ……
Mode of payment (Cheque / DD/NEFT/RTGS)…….
Details of Cheque/DD/RTGS/NEFT)……..

Name of Officer **Designation of Officer**
Seal **Signature**

Annexure-III

IMPORTANT CLAUSES RELATED TO THE TECHNICAL & INTERCONNECTION REQUIREMENTS:

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	Reference to regulations
Equipment	BIS / IEC / IEEE	Reference to standards
Meters	Central Electricity authority (Installation & operation of meters) Regulation 2006	Reference to regulations and additional conditions issued by the Commission.
Safety and supply	Central Electricity Authority(measures of safety and electricity supply) Regultions,2010	Reference to regulations
Harmonic Current	IEEE 519 CEA (Technical Standards for Connectivity of the Distributed Generation Resources) Regulations 2013	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	Renewable Energy 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	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 second, the Renewable Energy system must isolate itself from the grid.
Flicker	IEEE 519 CEA (Technical Standards for Connectivity of the Distributed Generation Resources) Regulations 2013	Operation of Renewable Energy 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	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 seconds.
DC injection	IEEE 519 CEA (Technical Standards for Connectivity of the Distributed Generation Resources) Regulations 2013	Renewable Energy 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.
Power Factor	IEEE 519 CEA (Technical Standards for Connectivity of the Distributed Generation Resources) Regulations 2013	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	The Renewable Energy 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	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	Paralleling device of Renewable Energy System shall be capable of withstanding 220% of the normal voltage at the interconnection point.

Annexure - IV

Sample bill calculation and carry forward procedure as per guidelines for ToD consumers

Billing period	Brought forward unit (kwh)	injection (A)			drawl (B)			net (C)			carried forward unit (C) if B<A or billed unit if B>A
		peak	normal	offpeak	peak	normal	offpeak	peak	normal	offpeak	
1	0	200	300	500	300	200	100	-100	100	400	255
2	255	300	300	500	200	200	300	100	100	200	555
3	555	100	200	300	300	300	100	-200	-100	200	390
4#	390	100	200	300	500	300	200	-400	-100	100	-90
12*	250	200	300	600	300	200	100	-100	100	500	580

•*last billing period no energy credit carried forward and Rs.2320/- shall be paid to the consumer assuming the tariff notified by the commission is Rs.4/- per unit

•# Carried forward unit is negative in 4th. Billing period means distribution licensee shall bill for 90 unit in that period

• Balance energy credit carried forward has been calculated after considering the rebate and surcharge on

• Net surplus generation in any billing cycle for the purpose of set off and carry forward has been moderated with rebate as generation in off peak time block