BSES Rajdhani Power Limited

Checklist for Registration Form- Stage 2

Check list of documents to be submitted by Consumer

S. No.	DOCUMENTS	REQUIRED	SUBMITTED
1.	Registration form signed by Registered consumer on each page with stamp.	YES	
2.	Net Metering Connection Agreement on Rs.100/- non judicial stamp paper, duly attested by Notary public signed by Registered Consumer on each page with stamp.	YES	
3.	Consumer Vendor agreement.	YES	
Check list of documents to be submitted by installer for safety requirement.			
1.	SLD with Checklist		
2.	**Inverter IEC Certificates:** IEC 62116 (Utility-interconnected photovoltaic inverters - Test procedure of islanding prevention measures).		

Note: Consumer's signature must be on each page of documents and Installer's seal and signature must be on all technical documents except Registration form & Net metering connection agreement.

BSES Rajdhani Power Limited

Application for Registration
Of the Scheme for Renewable Energy System

To
The Nodal officer-Net metering cell, Renewables Department
2ND floor, C-Block, BSES Bhawan, Nehru Place
Behind DTC Bus Terminal, New Delhi-110019

I intend to register for the scheme for Renewable Energy System, in compliance of Delhi Electricity Regulatory Commission (Net Metering for Renewable Energy) Regulations, 2014.

1	Name of Registered Consumer			
2	Address of Registered Consumer			
3	CA No.		Sanctioned load as per latest Electricity Bill	
4	Net-metering Application No.	NM-	Supply voltage (230V, 415V, 11kV,33kV, 66kV)	
5	Mobile No. of Consumer:		Mobile No. of Installer:	
6	E-Mail ID of Consumer (In Capital letters)			
7	E-Mail ID of Installer (in Capital letters)			
8	Renewable Energy Source type (solar / wind / other)		Capacity of Renewable Energy System	
9	Name of solar plant Installer		Proposed date of completion of the installation	

I ……..…… (Name of Consumer) undertake that ownership of the roof/land where solar PV system is installed is with me. I shall comply with the terms and condition of Model Connection Agreement .I agree to pay the Registration charges (details as provided below) as stipulated under Delhi Electricity Regulatory Commission (Net Metering for Renewable Energy) Regulations, 2014 once this application for registration is approved. Also, I agree to pay registration charges & all other applicable charges raised by the DISCOM through my electricity bill.

S No.	Capacity (kWp)	Charges (Rs)	Please tick any one as per your plant capacity
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/-	

Enclosure: Documents as per “Checklist of Registration form” (annexure -II)

Place:

Date:

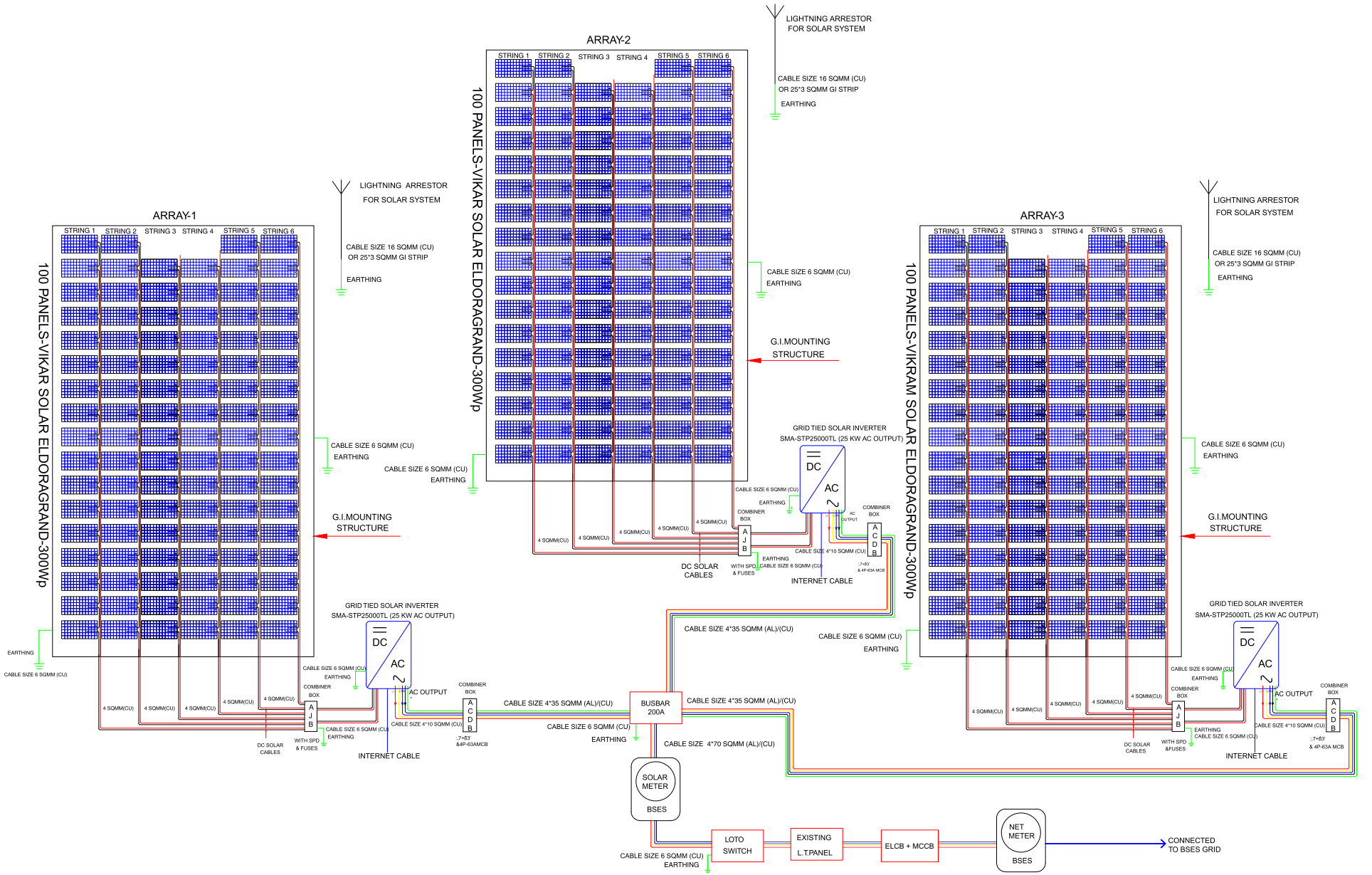
Signature of Registered Consumer with stamp

FOR OFFICE USE ONLY

Registration Number:		**Registration Date:**	

BSES

BSES Rajdhani Power Limited



SINGLE LINE DIAGRAM FOR ROOF TOP SOLAR SYSTEM-75KW

TOTAL CAPACITY OF MODULES : 90 KWp TOTAL CAPACITY OF INVERTERS : 75 KW	CLIENT NAME & ADDRESS:	INSTALLER'S DETAILS:

BSES Rajdhani Power Limited

Net Metering Model Connection Agreement For Renewable Energy

(On Rs.100/- non judicial stamp paper, duly attested by Notary public)

This Agreement is made and entered into at New Delhi on date _____ between the Registered consumer name _____CA No. _____ & applied solar capacity_____(in kWp) solar capacity found at site_____(kWp) residing at _____ __ __ _____ as first party and BSES Rajdhani Power Ltd. (herein after called as Discom) and having its registered office at BSES Bhawan, Nehru place, New Delhi, 110019 as second party of the agreement.

1. Eligibility

1.1 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.

1.2 Eligible consumer agrees that connection of Photovoltaic system to Discom's distribution system shall be bound by requirements of state Distribution Code and / or Discom's conditions of service and Delhi Electricity Regulatory Commission (Net Metering for Renewable Energy) Regulations, 2014. The grid shall continue to perform with specified reliability, security and quality as per the Central Electricity Authority (Grid Standard) Regulations 2010 as amended from time to time.

2. Technical and Interconnection Requirements

2.1 The Eligible Consumer agrees that he/she has installed or will install, prior to connection of Photovoltaic System to Discom's distribution system, an isolation device (both automatic and inbuilt within inverter and external manual relays) and agrees for the Discom to have access to and operation of this, if required, for repair and maintenance of the distribution system.

2.2 The Eligible consumer agrees that in case of a power outage on Discom's system, photovoltaic system will shut down, unless special transfer and isolating capabilities have been installed on photovoltaic system.

2.3 Technical specification of net meter and renewable energy meter should be in compliance to Discom.

2.4 All the equipment connected to distribution system must be complaint with relevant International (IEEE/IEC) or Indian standards (BIS) and installations of electrical equipment must comply with Indian Electricity Rules, 1956 and Central Electricity Authority (Technical Standards for Connectivity of the Distributed Generation Resources) Regulations, 2013.

2.5 The Eligible Consumer agrees that Discom will specify the interface/inter-connection point and metering point.

2.6 The Eligible Consumer agrees to adhere to following power quality measures as per International or Indian standards and/or other such measures provided by Commission/Discom.

A. Harmonic current: Harmonic current injections from a generating station shall not exceed the limits specified in IEEE 519.

B. Synchronization: Photovoltaic 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.

C. Voltage: 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 seconds, the Photovoltaic system must isolate itself from the grid.

D. Flicker: Operation of Photovoltaic system shouldn't cause voltage flicker in excess of the limits stated in the relevant sections of IEC 61000 standards or other equivalent Indian standards, if any.

E. Frequency: When the Distribution system frequency deviates outside the specified conditions (50.5 Hz on upper side and 47.5 Hz on lower side), the Photovoltaic system must isolate itself from the grid beyond a clearing time of 0.2 seconds.

F. DC Injection: Photovoltaic 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.

G. Power Factor: While the output of the inverter is greater than 50%, a lagging power factor of greater than 0.9 should operate.

H. Islanding and Disconnection: The Photovoltaic system in the event of voltage or frequency variations must island/disconnect itself within the stipulated Period as per applicable IEC standards / Central Electricity Authority (Technical Standards for Connectivity of the Distributed Generation Resources) Regulations, 2013.

I. Reconnection: The photovoltaic (PV) system shall be equipped with a voltage and frequency sensing and time-delay function to prevent the PV system from energizing a de-energized circuit and to prevent the PV system from reconnecting with electricity system unless voltage and frequency is within the prescribed limits and are stable for at least sixty seconds.

J. Overload and Overheat: The inverter should have the facility to automatically switch off in case of overload or overheating and should restart when normal conditions are restored.

K. Paralleling device: Paralleling device of Photovoltaic system shall be capable of withstanding 220% of the nominal voltage at the interconnection point.

2.7 As per Central Electricity Authority (Technical Standards for Connectivity of the Distributed Generation Resources) Regulations, 2013, measurement of Harmonic current injection, Direct Current injection and flicker shall be done with calibrated meters before the Commissioning of the project and once in a year in presence of the parties concerned.

It shall be the responsibility of the Eligible Consumer to ensure that the annual measurement of Harmonic Current Injection, Direct Current injection and flicker, be done every year within 30 days from the commencement of respective year and shall submit the report thereto within 7 days from the date of such measurement.

2.8 The Eligible Consumer agrees to furnish all the data such as voltage, frequency, and breaker, isolator position in his system, as and when required by the Discom. He/she shall also provide facilities for online transfer of the real time operational data.

3. Safety

3.1 The Eligible Consumer shall comply with the Central Electricity Authority (Measures Relating to Safety and Electricity Supply) Regulations 2010.

3.2 The Eligible Consumer agrees that the design, installation, maintenance and operation of the Photovoltaic System are performed in a manner conducive to the safety of the Photovoltaic System as well as the Discom's distribution system.

3.3 Due to Discom's obligation to maintain a safe and reliable distribution system, The Eligible consumer agrees that if it is determined by Discom that eligible consumer's photovoltaic System either causes damage to and/or produces adverse effects affecting other distribution systems' consumers or Discom's assets, eligible consumer will have to disconnect photovoltaic system immediately from the distribution system upon direction from the Discom and correct the problem at his own expense prior to a reconnection.

3.4 The eligible Consumer agrees that any change/ alteration/ modification/ addition/ reduction/ removal of capacity in the Photovoltaic System post Net metering shall be carried out only after securing prior permission from Discom, which shall be issued post receipt of necessary Test Certificate(s) and other documents as notified by DISCOM time to time.

4. Clearances and Approvals

4.1 The Eligible Consumer agrees to attain all the necessary approvals and clearances (environmental and grid connected related) before connecting the photovoltaic system to the distribution system.

5. Access and Disconnection

5.1 Discom shall have access to metering equipment and disconnecting means of Photovoltaic System, both automatic and manual, at all times.

5.2 In emergency or outage situation, where there is no access to a disconnecting means, both automatic and manual, such as a switch or breaker, Discom may disconnect service to the premise.

6. Liabilities

6.1 The Eligible Consumer and Discom 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 Discom's distribution system.

6.2 Discom and the 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.

6.3 Discom shall not be liable for delivery or realization by the Eligible Consumer for any fiscal or other incentive provided by the central government.

7. Commercial Settlement

7.1 All the commercial settlement under this agreement shall follow the Net metering regulations of Delhi Electricity Regulatory Commission (Net Metering for Renewable

Energy) Regulations, 2014 and subsequent amendments.

8. Conditions For System Connectivity

8.1 The parties shall abide by the Central Electricity Regulatory Commission Regulations in respect of procedure of grant of Connectivity. The consumer shall submit the following documents to Discom for the grant of connectivity:

Synchronization Circuit Details

Safety Report

Protection Circuit Details

Test Certificates of System

Schematic diagram of Renewable Energy system

9. Connection Costs

9.1 The Eligible Consumer shall bear all costs related to setting up of Photovoltaic System including metering and interconnection costs as per estimate by BRPL. The eligible consumer agrees to pay the actual cost of modifications and upgrades to the distribution facilities required to connect photo-voltaic system in case it is required.

9.2 Cost for interconnection equipment including the isolators, meters etc. are also to be borne by the eligible consumer.

10. Termination

10.1 The term of this Agreement shall be the life of a typical solar Photovoltaic power plant, which is 25 years or till the validity of license with BRPL, whichever is earlier, unless this Agreement is otherwise terminated as per the provisions of the clause.

10.2 Discom has the right to terminate Agreement on 30 days prior written notice, If the Eligible Consumer breaches any term of this Agreement and does not remedy the breach within 30 days of receiving written notice from Discom of the breach.

10.3 That during the validity of this agreement the Eligible Consumer shall be liable to ensure the continuous connection of solar photovoltaic power plant with DISCOM Grid. In case of any disconnection of plant from DISCOM Network, the Eligible Consumer shall be under a mandate intimate the said disconnection to DISCOM in at least 3 days in advance, except the situation beyond control. Whereas all the eventuality of disconnections, where the same could not be informed in advance, the same shall be communicated within 2 days of such disconnection, without fail and shall rectify the default causing such disconnection. Further in case of failure from the side of consumer in rectifying the said default within 3 days, the same shall be termed as breach of NM Model Connection Agreement and BRPL shall be having all rights, as available, given the breach committed by eligible consumer/s including the termination of this agreement and necessary post termination obligations shall follow.

10.4 The Eligible Consumer agrees that upon termination of this Agreement, consumer must disconnect the Photovoltaic System from Discom's distribution system in a timely manner and to Discom's satisfaction

11. That the consumer, for setting up/installation of solar photovoltaic power plant and during the tenure of the installation of the same, shall be liable to take all permissions / permits / approvals as required under the provisions of relevant laws.

12. That upon setting up and during the period of installation of solar photovoltaic power plant, the consumer/s shall jointly and severally, keep BRPL/ its employees/ directors/ officers/ associates indemnified from all cost consequences, liabilities, penalties, claim of damages/compensation etc from any person/agency/land owning agency/court or any other judicial-quasi-judicial authority citing the establishment and/or operation & maintenance of solar photovoltaic power plant.

13. Governing Law and Jurisdiction

This Agreement shall be governed by the laws of India, and courts in Delhi shall have exclusive jurisdiction to rule on any matters or disputes arising from or relating to anything contained within this Agreement.

14. This agreement shall be governed by the and Delhi Electricity Regulatory Commission (Net Metering for Renewable Energy) Regulations, 2014 and any other order/directions in related to establishment/ maintaining/ functioning of solar photovoltaic power plant. Further in case of any change in the above laws, the eligible consumers shall be liable to comply the same.

In the witness, where of Mr./Ms._____and Mr./Ms. _____ for and on behalf of _____(The Eligible Consumer/Registered consumer) and Head of Department on behalf of BSES Rajdhani Power Limited agree to this agreement.

Date:

_____ _____

Name & Signature of
Registered Consumer

Signature of Head (Renewable)
BSES Rajdhani Power Limited

BSES Rajdhani Power Limited

Check list I: Single Line Diagram (SLD)

S. No.	PARAMETERS	REMARKS
1.	Array Configuration (as per MPPT range) – No. of modules per string and no. of strings	No. of modules per string - No. of strings-
2.	Module Sizing	
a)	Rating of module	
b)	No of modules	
3.	Inverter Sizing	
a)	Rating of inverter	
b)	No. of inverter	
c)	Inverter Type (1-Phase/3-Phase)	
4.	AJB Circuit Diagram	
a)	SPDs	
b)	Fuses	
5.	ACDB Circuit Diagram	
a)	SPDs	
b)	MCB/MCCBs	
6.	DC Cable Sizing Marking	
a)	DC Cable size, type (Cu) and length from Module to Inverter	
7.	AC Cable Sizing Marking	
a)	AC Cable size, type (Cu) and length from Inverter to ACDB	
b)	AC Cable size, type (Cu/Al) and length from ACDB to LT panel	
8.	Manual Isolation Switch (LOTO) at Solar Meter Output	
9.	Lightning Arrestor	

10.	Earth Pits	
a)	DC Earth Pit (Array structure & AJB) (Nos.)	
b)	Conductor /Strip size & type (Cu/Al/GI)	
c)	AC Earth Pit (Inverter, ACDB & LT Panel) (Nos.)	
d)	Conductor /Strip size & type (Cu/Al/GI)	
e)	LA Earth Pit (Nos.)	
f)	Conductor/Strip size & type (Cu/GI)	
11.	Solar Meter	
12.	Net Meter	
13.	ELCB + MCCB box	
14.	Data logger	
15.	LT Panel	
16.	HT Panel, CB, Transformer with rating (if applicable)	
17.	Plant Capacity Rating (DC)	
18.	Plant Capacity Rating (AC)	
19.	Consumer's Signature	
20.	Installer's seal with signature	
21.	ELCB Placed	
22.	MCCB placed after / before ELCB	
23.	Voltage drop from Inverter to ACDB	
24.	Voltage drop from ACDB to LT panel.	

Checked By :

Signature: