

### CHECKLIST FOR STAGE - 3

(To be submitted after installation of solar PV plant and before site visit)

S.No.	Documents	Remarks	Page No.
1.	Claim letter for Subsidy (Annexure-M)	For CFA only	
2.	Solar System Warrantee Certificate for 5 / 25 years	For CFA only	
3.	Copy of PR Test report	For CFA only	
4.	Copy of Project Completion report (Annexure-J)	For CFA only	
5.	Copy of Solar System (Electrical side) testing report. (To be submitted at the time of Discom's site visit)	For CFA only	
6.	Copy of Joint Completion certificate (JCR) (Annexure-O) (To be submitted at the time of Discom's site visit)	For CFA only	
7.	Solar PV module & Solar Inverter Serial No.	For CFA / NON CFA	
8.	Solar PV module & Solar Inverter test sheet	For CFA only	
9.	Solar PV module & Solar Inverter warranty certificates	For CFA / NON CFA	
10.	Solar PV plant Insurance Cover (can be submitted along with completion report)	For CFA only	
11.	PV Syst, Stadd Pro, Final BOM, As built drawing. (For project above 3KWp)	For CFA only	
12.	User name and Password of remote monitoring system along with Open API of data logger (in installer letter head)	For CFA only	
13.	Detailed list of components to be used in Renewable Energy System signed by Registered Consumer and Solar Plant Installer with stamp	For CFA / NON CFA	
14.	Solar Plant Installation Certificate signed by Registered Consumer and Solar Plant Installer with stamp, post installation of plant	For CFA / NON CFA	
15.	Undertaking for DCR content (On the letter head of Installer) in case of CFA project	For CFA only	
16.	Electrical Inspector certificate(Above 500KWp plants)	For CFA / NON CFA	
17.	Performance Bank Guarantee for O & M phase. (can be submitted along with completion report)	For CFA only	
18.	Copy of Performance Bank Guarantee for O & M phase submitted to consumer. (can be submitted along with completion report)	For CFA only	

**(Subsidy Claim Letter on Company letter Head)**

RefNo.....

Date:.....

To,

Sub: Claim Letter for release of subsidy for Solar Power Plant of ..... kWp capacity installed at .....

Ref:

1. XXXXAllocation letter No. ....
2. XXXXSanction letter No.....

Dear Sir,

This is in reference toXXXXallocation and sanction letter, We, (Name of Company) has successfully commissioned the ..... kWp capacity rooftop solar plant installed at .....

(Name, CA No. & Address Site).

As per the sanction order,.....(Name of Company) is entitled to a subsidy of INRs

Post successful installation, commissioning and inspection of the rooftop Solar Power Plant. Therefore, kindly release the subsidy of INR .....(Rs.In words) at the earliest.

Thanks and regards,

(Signature)

**Signed and Stamp**

## PERFORMANCE RATIO TEST(PR)

User Details,Location& Plant Image

Vender Name	
Consumer name	
Address	
Plant Capacity	
Site name for Irradiance	
CA Number	

$$\text{PR} = \frac{\text{Measured Output (KW)}}{\text{Installed Plant capacity (KW)}} \times \frac{1000\text{W/m}^2}{\text{Measured radiation Intensity(W/m}^2\text{)}}$$

**Date of PR Measurement:-**

Date	Time	Irradiation (W/m <sup>2</sup> )	Active Power (KW)	PR(%)
	10:00			
	11:00			
	12:00			
	13:00			
	14:00			
	15:00			
			<b>Average</b>	

**Remark :-**The PR Test of the solar PV Plant is above 75% ,therefore the system is ok and acceptable

**Signature of inspecting officer**

**Project Completion Report for Grid-Connected Rooftop**

Financial year:			
Sanction Letter No. :			
Proposal Title :			
Installed by agency :			
Title of the Project:		SPV Capacity (kWp):	
Category of the organization/ beneficiary:		Name of the contact person:	
Address of contact person:			
State:		District/ City:	
Mobile:		Email:	
Aadhaar Card Number (For Residential)		Latitude:	
		Longitude:	
DISCOM		Sanction Load	
CA No.			

Technology Description & System Design /Specification			
(Compliance to BIS/ IEC Standards is mandatory)			
1. Solar PV Module:			
Power of each PV Module / Nos.(Wp)* / Make			
Cumulative Capacity of Modules(kWp):			
Solar cell technology:		Tilt Angle of Modules:	
Module efficiency (in %) :		Azimuth	
Indigenous or imported (Cell)		RFID passed inside or outside:	
Indigenous or imported (Module)		* Supported by Appropriate documentation	
2. Inverters:			
Type of inverter :			
Power of each PCU/Nos. of inverters (KVA)* /Make			
Capacity/Power of PCU/inverters (KVA) :		Type of Charge Controller /MPPT	
Inverter efficiency (in %)			

Grid connectivity level phase	Single Phase/ Three Phase	Grid connectivity level Voltage	220 V/ 415 V
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<b>3. Mounting Structures</b>			
Type		Surface Finish	
Material		Wind Speed Tolerance	
<b>4. Cables:</b>			
DC Cable Make		Size	
AC Cable Make (Inverter to ACDB)		Size	
AC Cable Make (ACDB to Electric Panel)		Size	
Conductor		Insulation/sheath	PVC / XLPE
<b>5. JUNCTION BOX &amp; DISTRIBUTION BOARDS</b>			
ACDB		Nos.	
DCDB		Nos.	
<b>6. EARTHING &amp; LIGHTNING PROTECTION</b>			
<b>EQUIPMENT EARTHING</b>			
AC (Nos.)		Earth Resistance	
DC (Nos.)		Earth Resistance	
<b>LIGHTNING ARRESTORS (LA)</b>			
Type			
LA (Nos.)		Earth Resistance	
<b>7. Online Monitoring Mechanism:</b>			
Web Portal :			
USER ID :		Password:	
<b>8. Weather monitoring:</b>			
Solar Irradiance (Pyranometer - Class IIInd or better)		Temperature	Ambient & Module
Wind speed sensor			
<b>9. Fire Fighting Device / System</b>			
<b>10. Danger Board</b>			

Date:.....

(Signature of Vendor With Stamp)

Annex:

1. Copy of System test & Earth test reports(annexed)

**Commissioning Test Report: Solar Project ..... kW**

**Inverter Testing(DC)Side: Nos.of Inverter..... Nos.**

Inverter S. No.	Capacity	String 1: Voc	String 2: Voc	Remark

**Inverter Testing (AC) Side – Single / Three Phase**

Inverter S. No.	Capacity	R – Y/ P-N	Y – B	B – R	R – N	Y – N	B – N	Remark

**ACDB & Meter Panel Testing – Single / Three Phase**

	R – Y/ P-N	Y – B	B – R	R – N	Y – N	B – N	Remark
ACDB I/C (V)							
ACDB O/G (V)							

**EarthingPitDetails:Nos.ofEarthPit ..... Nos.**

	Earthing AC	Earthing DC	Earthing LA	Remark
Earth Test Value (Ohm)				

Date: .....

Sign .....

Site Engineer

**Joint Commissioning Report (JCR)**

**COMMISSIONING REPORT (PROVISIONAL) FOR GRID CONNECTED SOLAR PHOTOVOLTAIC POWER PLANT (with Net-metering facility)**

Certified that a Grid Connected SPV Power Plant of ..... kWp capacity has been installed at the site.....

.....  
district..... of

..... which has been installed

by M/S .....

on..... The system is as per BIS/MNRE specifications. The system has been checked for its performance on ..... with / without installation of bi-directional meter and it is working satisfactorily. The system is suitable for installation of bi-directional and gross energy meters.

**Signature of the beneficiary**

Signature of the rep. of supplier-  
With name, seal and date

Signature of the P.O./APO  
With name, date and seal

All Pages to be Printed on Letter Head of Installer and signed by installer  
with stamp & consumer with stamp (if applicable)

## **Solar Plant Installation Certificate**

Registered Consumer Name			
Address			
BYPL CA Number		Net Metering Application No	
BYPL Sanctioned Load		Solar Capacity	
BYPL Supply Voltage		Solar Plant Connecting Voltage	
Consumer Mobile No		Solar Plant Installation Date	
Consumer Email ID		Warranty Period	
Installer Email ID		Installer Mobile No	
Total Cost of solar plant Installation (Rs.)		Financial model (CAPEX/ RESCO)	

The system has been installed with equivalent standards which correspond to the required technical & interconnectivity specifications as per **Annexure III (important clauses related to the technical & interconnection requirements) of Guidelines under DERC (Net Metering for Renewable Energy) Regulations, 2014** as under:

Parameter	Reference	Requirement	Installer Remarks
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 & Electricity Supply) Regulations, 2010	Reference to regulations	
Harmonic Current	IEEE 519 CEA (Technical Standards for connectivity of the DG 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 DG 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 DG 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 DG 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 DG Resources) Regulations, 2013	While the output of the inverter is greater than 50%, a lagging power factor of $\geq 0.9$ operates.	
Islanding and Disconnection	IEEE 519 CEA (Technical Standards for connectivity of the DG 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 DG Resources) Regulations, 2013	Inverter has the facility to automatically switch off in case of overload or overheating and restarts when normal conditions are restored.	
Paralleling Device	IEEE 519 CEA (Technical Standards for connectivity of the DG Resources) Regulations, 2013	Paralleling device of Renewable Energy System is capable of withstanding 220% of the normal voltage at interconnection point.	

The system has been installed and tested for grid stability, grid protection and specified environmental influences and is found to have equivalent standards which correspond to the required technical & interconnectivity specifications as per **Annexure III (important clauses related to the technical & interconnection requirements) of Guidelines under DERC (Net Metering for Renewable Energy) Regulations, 2014** as under:

Solar Installer's Name, Signature with stamp

Consumer's Name, Signature with stamp (if applicable)

Detail list of components to be used in Renewable Energy System

CA No: \_\_\_\_\_, Sanction Load \_\_\_\_\_ KW, Contact no of Consumer: \_\_\_\_\_

Address: \_\_\_\_\_

Company name of installer: \_\_\_\_\_ Contact no of installer: \_\_\_\_\_

Details of Solar Capacity:- Existing : \_\_\_\_\_ KW, Proposed : \_\_\_\_\_ KW, Total: \_\_\_\_\_ KW

Sr no	Name of equipment	Make	Model no	Serial no	Capacity	Quantity	Certificates	Attachments
1	Solar Inverter							
2	Solar PV modules							
3	Structure							
4	Solar cable							
5	AC cables							
6	Switches/ Circuit Breakers/ Connectors							
7	Earthing							
8	Connector & Conduits							

9	Junction Boxes/ Enclosures for Charge Controllers/ Luminaries							
10	LA							
11	Data logger							

I .....(Name of Consumer) shall comply with the terms and condition of Model Connection Agreement.

Signature of Installer  
with stamp

Signature of  
Consumer