SOLAR POWER GENERATION - CHECK LIST

(Annexure to Circular No: B2 - 13958 / 2017 / CEI Dated 24 / 07 / 2018)

A	**Installation Details**	
1.	Name & Address of Installation	
2.	Contact Number	
3.	Classification (LT/MV/HT/EHT)	
4.	Date of receipt of completion report	
5.	Date of Inspection	
6.	Name of Inspecting Officer	
7.	Capacity of Solar System	
B.	**SPV Module**	
1.	Details of MNRE approval test for SPV Module	
2.	Maximum output (20% Peak Power)	
3.	Type of SPV module	Thin film or Polycrystalline
4.	Degree of protection (IP)	
5.	Orientation	Towards south
6.	Inclination angle	
7.	Total number of PV modules	
8.	Wattage of each module	
9.	Total installed capacity	
10.	Type of system	Grid interactive system / Off grid system
C.	**Mounting Structures**	
1.	The mounting structures shall be designed and constructed as per IS 2062: 1992 and IS 4759.	
D.	**Whether DCDB provided** If yes, details of switch board	Yes / No
E.	**Power and Control Cables**	
1.	Rating of Power cables for inter connection of Modules (panels with in array).	
2.	(I) Array & charge controller.	
	(ii) Charge controller & battery.	
3.	Type of Cable	
4.	Size of Cable	
5.	Whether the connection properly terminated, soldered in outdoor and indoor elements	
F.	**DC combiner box details** (Verify with manufacture date sheet)	
1.	I - V curve details submitted	Yes / No
2.	Optimum power to be delivered by SPV panel (optimum power 2.25V/cell)	
3.	Standard irradiance or light intensity of SPV panel : (1000W/rn2 at 25°C and AM 1.5)	
4.	Details of MNRE approval test for SPV Module	
G.	**Inverter**	
1.	Make	
2.	Serial Number	

3.	Specification	
4.	Total number of inverter	
5.	Power quality of inverter	
(I)	AC voltage	
(ii)	Frequency	
6.	Type of inverter	
7.	Whether automatic syncrhonisation for inverter to output of grid done	
8.	Details of over voltage protection provided	
9.	Details of under voltage protection provided	
10.	Maximum power output of the inverter system	
11.	Type of installation - Indoor / out door	
12.	Degree of protection for inverter panel.	
H.	**Batteries :-**	
1.	Type of battery	
2.	Output voltage	
I.	**Metering Parameter Provided**	
1.	DC Battery voltage	
2.	DC current	
3.	AC system voltages	
4.	Current and	
5.	Frequency	
6.	Solar gross generation	
7.	Consumer load consumption	
8.	Export of energy to grid	
9.	Import of energy from grid	
J.	Test result	
1.	Earth resistance	
2.	Insulation Resistance value	
3.	Total voltage harmonic distortion	
4.	Individual voltage harmonic distortion	
5.	Total current harmonic distortion	
K.	**Earthing**	
1.	Details of earthing Equipment earthing System earthing: (AC Supply - Neutral to be earthed and DC Supply - Negative to be earthed)	
2.	No. of earth pits	
3.	Details of lightning protection if any	
L.	Junction Boxes	
1.	Whether FRP Junction boxes are provided Rating of Fuses for solar arrays	
M.	**Parameters to be measured and monitored**	
1.	Solar system temperature	
2.	Ambient temperature	
3.	Solar irradiation/isolation	
4.	DC current and voltages	
5.	DC injection into the grid (One time measurement at the time of installation.)	
6.	Efficiency of the inverter	
7.	Solar system efficiency	
8.	Display of I-V curve of the solar system	
N.	**N Protection and control**	

1.	Fuse rating on inverter input side (DC)	
2.	Fuse rating on inverter output side (AC)	
3.	Rating of Isolator provided for AC & DC	
4.	Earth Fault protection details	
0.	**Remarks**	

Signature of Inspecting Officer

File No. B2-9455/2021/CEI, Thiruvananthapuram Date : 20 / 12 / 2021

CIRCULAR

Subject :- Installation of Solar Energy System - guide lines - clarification issued - regarding

Reference :- Circular No. B2-12439/2020/CEI dated 14.10.2020.

For the effective implementation of Solar Projects, the following clarifications on the above guide lines are issued.

A. Guidelines for scrutiny / inspection of Solar Energy System

1. Up to 5kW solar plants, two numbers of earth electrodes are sufficient and LA shall be provided in lightning prone area.
2. Above 5kW and up to 100kW solar plants, three numbers of earth electrodes are sufficient and LA shall be provided.
3. These earth electrodes shall be interconnected to existing earth electrodes and total earth resistance shall be less than 5Ω.
4. Equipotential bonding shall be done as per IEC TR 63227:2020.
5. Lockable CB/SFU shall be installed at the point of interconnection with the grid connected SPV system which should be accessible to the utility staff to isolate the system at the time of maintenance of distribution system.

Chief Electrical Inspector