HYBRID ROOFTOP SOLAR POWER ELECTRICAL INSTALLATION CERTIFICATE for DESIGN AND CONSTRUCTION (Annex 3)

(Less Than or Equal 1.0 MW Supply - LV Metered Customers with Hybrid Inverters Type I/Type II)

(REQUIREMENTS FOR ELECTRICAL INSTALLATIONS - BS 7671 [IET WIRING REGULATIONS)

DETAILS OF THE CUSTOMER			
Name of the Customer		Customer Electricity Account No. and Electric Utility	
Address of the Customer		Contact No./ Email/ Fax	
DETAILS OF THE CONTRACTOR			
Name of the Contractor		SEA Registration No.	
Address of the Contractor		Contact No./ Email/ Fax	

Description of the installation:
Extent of installation covered by this Certificate:

…… kW hybrid rooftop solar power electrical installation (Type I/Type II) at the above address.

(Use continuation sheet if necessary) see continuation sheet No: .....

DESIGN AND CONSTRUCTION					
DETAILS OF THE HYBRID INVERTER					
1.	Brand(s) of the Inverter(s)	a.	2.	Country of Origin	
3.	Number of Inverters		4.	Model No. & Serial No	
5.	Reputed Independent Agency of Submitting Test Reports	b.			
6.	Rated Output Voltage (AC) and Rated Input Voltage (DC)	Output (AC) Input (DC)	7.	Rated Power Output (W)	
8.	Max. input voltage (DC)		9.	Max. input current (DC)	
10.	Max. output voltage (AC)		11.	Max. output current (AC)	
12.	Rated Power Frequency		13.	Max. Efficiency	
14.	Operating temperature range		15.	Degree of Protection (IP)	
16.	Supported Standards				
DETAILS OF THE SOLAR PANELS					
1.	Brand of the Panel				
2.	Country of Origin				
3.	Reputed Independent Agency of Submitting Test Reports	b.			
4.	Model No. & Serial No.		5.	Peak Power (W) /Panel	
			6.	No. Of Panels	
7.	Panel Efficiency		8.	PV Cell Type	
9.	Panel Open Circuit Voltage (DC)		10.	Panel Rated Voltage (V_{MPP})	
11.	Panel Short Circuit Current (DC)		12.	Panel Rated Current (I_{MPP})	
13.	Supported Standards				
Details of the PV Array					

1.	Number of Strings		2.	String Voltage (V_{mp})	

DETAILS OF THE BATTERY BANK (IF AVAILABLE)

1.	Brand of the Battery				
2.	Country of Origin				
3.	Reputed Independent Agency of Submitting Test Reports	b.			
4.	Model No. & Serial No.		5.	Peak Output Power [kVA]	
6.	Battery Type		7.	Nominal Voltage [V]	
8.	Usable Energy [kWh]		9.	Operating Voltage Range [V]	
10.	Supported Standards				

External Automatic Back Feed Protection: Available ☐ Not Available ☐

Main Protective Conductors

Earthing conductor	Material ..... csa ..... mm^2	Connection / continuity verified ☐

SCHEDULES

The attached Schedules are part of this document and this Certificate is valid only when they are attached to it.

..... Schedules of Inspections are attached.

(Enter quantities of schedules attached).

FOR DESIGN and CONSTRUCTION

I/We being the person(s) responsible for the design and construction of the electrical installation (as indicated by my/our signatures below), particulars of which are described above, having exercised reasonable skill and care when carrying out the design and construction hereby CERTIFY that the work for which I/we have been responsible is to the best of my/our knowledge and belief in accordance with the latest edition of BS 7671 & SLS 1680 standards, except for the departures, if any, detailed as follows:

Details of departures from BS 7671 (Regulations 120.3 and 120.4):

Details of permitted exceptions (Regulation 411.3.3). Where applicable, a suitable riskassessment(s) must be attachedto this Certificate.

The extent of liability of the signatory or signatories is limited to the work described above as the subject of this Certificate.

For the DESIGN and CONSTRUCTION of the installation:

Signature: ..... Date: ..... Name (IN BLOCK LETTERS): .....

The extent of liability of the signatory or signatories is limited to the work described above as the subject of this Certificate.

For the DESIGN and CONSTRUCTION of the installation:

Signature: ..... Date: ..... Name (IN BLOCK LETTERS): .....

PARTICULARS OF SIGNATORY TO THE ELECTRICAL INSTALLATION CERTIFICATE

Designer / Contractor

Name: ..... Company: .....

Address: .....

..... Postcode: ..... Tel No: .....

a. If there are more than one hybrid inverter in the installation, provide the particulars of each hybrid inverter in the same format in additional sheets.

b. The test certificates/ compliance certificates from independent agencies or accredited agency or one of the following institutions in Sri Lanka, should be submitted to prove the mentioned values.

i. Department of Electrical Engineering, University of Moratuwa
ii. National Engineering Research and Development Centre (NERD)
iii. Arthur C Clarke Institute for Modern Technologies

SCHEDULE OF INSPECTIONS (for new installation work only) for

HYBRID ROOOF TOP SOLAR POWER INSTALLATION LESS THAN OR EQUAL TO 1 MW SUPPLY

NOTE 1: This form is suitable for many types of smaller installation, not exclusively domestic. All items inspected in order to confirm, as appropriate, compliance with the relevant clauses in BS 7671. The list of items and associated examples where given are not exhaustive.

NOTE 2: Insert ✓ to indicate an inspection has been carried out and the result is satisfactory, or N/Ato indicate that the inspection is not applicable to a particular item.

ITEM NO	DESCRIPTION	Outcome See Note 2
1.0	**OTHER PART 7 SPECIAL INSTALLATIONS OR LOCATIONS (SECTION 712)**	
1.1	Any connections with Earth on the D.C. side is electrically connected so as to avoid corrosion	
1.2	The protective measures of non-conducting location and earth-free local equipotential bonding are not on the D.C. side. (712.410.3.6)	
1.3	PV A.C. supply is connected to supply side of protective device (712.411.3.2.1.1)	
1.4	RCD is in place and it is type B to IEC 60775 (712.411.3.2.1.2) or	
1.5	Protection by the use of Class II or equivalent insulation has been adopted on D.C. side of cell (712.412)	
1.6	Overloaded protection is omitted from the PV array string if the cable current-carrying capacity is rated to at least 1.25 of the short circuit current. Short circuit current protection is provided at connection to the mains(712.433.1),(712.434.1)	
1.7	To minimize voltage induced by lighting, the area of all wiring loops are as small as possible (712.444,4,4)	
1.8	PV modules comply with the requirements of the relevant equipment standards. (712.511.1)	
1.9	PV modules have been installed in such a way that there is enough heat dissipation under conditions of maximum solar radiation for the site.(712.511.2.1)	
1.10	The selection and erection of equipment shall facilitate safe maintenance (712.513.1)	
1.11	PV string cables ,PV array cables and PV main D.C. cables have been selected and erected so as to minimize the risk of Earth faults and short circuits. (712.522.8.1)	
1.12	Wiring systems withstand the expected external influences such as wind, temperature and solar radiation. (712.522.8.3)	
1.13	Isolation for maintenance on D.C. and A.C. sides is provided (712.537.2.1.1)	
1.14	A switch-disconnector is provided on the D.C. side of the the PV convertor. (712.537.2.2.5)	
1.15	All junction boxes carry label warning about energization after loss of mains.(712.537.2.2.5.1)	
1.16	Protective bonding conductors run in close contact with D.C. and A.C. PV system cables (712.54)	
1.17	Electrical Single line diagram of the installation is attached with the certificate.	

Inspected by Designer / Contractor:

Name (Capitals) ..... **Signature** ..... **Date** .....