श्यामा प्रसाद मुखर्जी महिला महाविद्यालय
SHYAMA PRASAD MUKHERJI COLLEGE FOR WOMEN

दिल्ली विश्वविद्यालय University of Delhi

पंजाबी बाग (पश्चिम), नई दिल्ली-110026 PUNJABI BAGH (West), New Delhi-110026

दूरभाष Phone : 25224499, फैक्स Fax : 25221672

E-mail : spmcollegedu@gmail.com Website : http://spm.du.ac.in

संदर्भ सं. Ref. No SPMC/2021/1446 दिनांक Dated 21/12/202

COMPLETION & PERFORMANCE CERTIFICATE

This is to certify that **M/S HFM Roof Top Solar Private Limited** (A Project Company of HFM Solar Power Private Limited), having its Registered office at A-69, FIEE Complex, Okhla Industrial Area, Phase-II, New Delhi - 110020 has Successfully Designed, Supplied, Installed, Tested & Commissioned **101.50 kWp** Rooftop Grid Connected Solar Power Plant under **RESCO** model on the roof of our college buildings situated at **Shyama Prasad Mukherji College (For Women)**, Road No. 57, Punjabi Bagh (West), New Delhi – 110026.

The works mentioned above have been Completed and Commissioned on **23.09.2020** in accordance with the specifications, provisions and conditions of the contract.

The overall performance of the plant is excellent. We congratulate HFM Roof Top Solar for their excellent work & wish them all the success in their future endeavors.

Aurthorized Signatory

Sadhna

Principal
S P M College(For Women)
Punjabi Bagh, New Delhi-?

HFM ROOF TOP SOLAR PRIVATE LIMITED
Regd. Office : A-69, FIEE Complex, Phase-II,
Okhla Industrial Area,
New Delhi - 110020

Solar Plant Installation Certificate

Registered Consumer Name	M/s. PRINCIPAL		
Address	SPM COLLAGE F WOMEN RD-5 P BAGH WEST PUNJABI BAGH NEW DELHI 110026		
BRPL CA Number	100001611	Net Metering Application No	NM-2782
BRPL Sanction Load	257 .00 (KW)	Solar Capacity	100.00 KW (Approx)
BRPL Supply Voltage	HT(11KV)	Solar Plant Connecting Voltage	440V (3-Phase)
Consumer Mobile No	9013312681/9910380370	Solar Plant Installation Date	30th Sep'2020
Consumer Email ID	spmcollegedu@gmail.com	Warranty Period	25 years
Installer Email ID	Solarpower@hfmgroup.net	Installer Mobile No	9818097665
Total Cost of solar plant Installation (Rs.)		Financial model (CAPEX/ RESCO)	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	ok
Overall Grid Standards	Central Electricity Authority (Grid Standard) Regulations 2010	Reference to regulations	OK
Equipment	BIS / IEC / IEEE	Reference to standards	OK
Meters	Central Electricity authority (Installation & operation of meters) Regulation 2006	Reference to regulations and additional conditions issued by the Commission.	OK
Safety and Supply	Central Electricity Authority (Measures of Safety & Electricity Supply) Regulations, 2010	Reference to regulations	OK
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	OK
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.	OK

Principal (For Women)
SPM College
Punjabi Bagh, New Delhi-1

HFM Roof Top Solar Private Limited New Delhi

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.	OK
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.	OK
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.	OK
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.	OK
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 > 0.9 operates.	OK
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.	OK
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.	OK
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.	OK

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:**

Roof Top Solar Private Limited New Delhi

Principal
S.P.M. College(For Women)
Punjabi Bagh, New Delhi-26

Solar Installer Name, Signature with stamp

Consumer Name, Signature with stamp (if applicable)