

Project Inspection Report under RfS No: SECI/C&P/RfS/MNRE/97.5MW GCRT/R1/IND/082019

Dated: 29/08/2019 (Achievement Linked Incentive Scheme)

ate OF F	nspection:		
A	Name of the Successful Bidder: M/s SunSource Energy Pvt. Ltd.		
В	Name of the Building Department / Organisation: DVC- Raghunathpur Thermal Power Station, Project-2		
С	Name of the Ministry. Ministry of Power		
D	Address of SPV power plant installed: DVC- Raghunathpur Thermal Power Station, Dundumi, Purulia, West Bengal		
E	Meter Consumer Number: DVC Underta	king attached	
S. No	Component	Details	Page No.
1	Installed Project capacity in (kWp)	462.3 kWp	_
2	Whether the system is installed in shadow free area or not? If not mention the details.	YES	
3	PV modules are made in India	YES 1- Attached Undertaking form manufactures with Serial No. 2- Attached Undertaking from bidders with Serial No. 3- Attached Invoice copy of modules 4- Attached Delivery	1 2 5 3
4	Whether all major components (except inverters) are made in India	challan of modules YES	-
5	Type, Make and year of manufacturing of Modules	Poly crystalline Si, Waaree, 2021	-
6	Flash Test Report for all modules (rated output power of any supplied module shall have positive tolerance in range of 5 watt)	YES (Documents attached)	4-36

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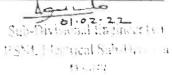
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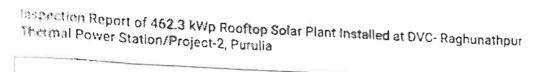


7	PV module qualification test standard (IEC 61215/IS14286 / IEC 61730 / IEC 61701/IS 61701 (for highly corrosive atmosphere)	BIS certificate attached Certificate Number: R- 72002038 Certificate issued by: BIS Certificate issued on: 30.12.2020 Certificate valid up to:21.02.2023	37
8	Wattage of each module and Total No. of modules	335 Wp, 1380 Nos	_
9	Integrated bypass diodes		
10	Representative I-V curve of modules @STC	Documents attached	38
17	Module RF identification tag (Inside /outside lamination)	YES	_
12	Whether the modules contain information about company name, sorial no and year manufacturing etc. (RFID information attached)		39
13	Warranty Certificates (Material Warranty/ Performance Warranty) signed and stamped by bidders	Signed and Stamped by bidder - attached	40-43
4 4	Protection class of Junction box of modules (IP- 65)	YES, IP-65	38
~~	ARRAY STE	RUCTURE	i.
15	Material of structure	Hot dip galvanized MS / Steel (IS 2052: 1992) / Aluminium Al Material test report attached	44-47
16	Galvanisation of mounting structure as per IS 4759	NR Test report as per IS attached	
17	Galvanisation thickness of mounting structure	1. 80 mm 2. Galvanisation test report as per IS – NR	
18	Wind load calculation sheet for wind zone of the location	ad calculation sheet for Designed to sustain wind	
19	MMS Design certified by a recognized Lab/ Institution	YES Attach Document	51-53
20	Material of fasteners (Stainless steel)	YES	
21	Load bearing capacity of the roof	OK (visual observation)	
22	Minimum clearance of the structure from the roof	600 mm	_



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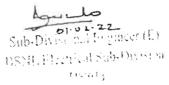




	PCU/ Inv	/erter	
23	Guaranteed Technical Particulars for PCU/ Inverter as per RfS	YES Test certificate attached	54-57
24	Make, rating of each inverter & No. of Inverters (AC capacity of inverter)	Solis; 40kW (02nos.), 80kW (01no.), 100kW (03nos.)	_
25	Combined Rated wattage of all inverters in Plant (Total AC rating)	460 kW	
26	PCU/inverter	YES	
27	Year(s) of manufacturing of inverters	2021	
28	Switching devices, inverter data sheet as per RfS	1 1 =	
29	Protection of Enclosure (IP) and Location of Inverters (outdoor/indeer)	IP-65/Outdoor type	57-59
30	Phase of inverter	3 phase	
31	Whether solar PV plant is synchronized with grid	YES	
32	Inverter standard codes IEC 61683/IS 61683, IEC 60068- 2(1, 2, 14, 30) /Equivalent BIS Std.	IEC Certificates attached Certificate Number: AK 50442845 0001/AK 50456359 0001/AK 50469617 0001 Certificate issued by: TUVRheinland/TUVRheinland/ TUVRheinland Certificate issued on: 03.09.2019/31.12.2019/29.05 .2020 Certificate valid up to: NA IEC Certificates attached	60-6
33	Anti- Islanding (IEEE 1547/UL1741/IEC 62116)	Certificate Number: AK 50442843 0001/ AK 50456354 0001/AK 50469622 0001 Certificate issued by: TUVRheinland/ TUVRheinland/ TUVRheinland Certificate issued on: 23.08.2019/31.12.2019/29.05 .2020 Certificate valid up to: NA	68-63
34	Serial Numbers of installed inverters	110212216030025 (100kW) 110BE2218090037 (80kW) 110212216030071 (100kW) 110212216030038 (100kW) 110D72213010061 (40kW)	<u> </u>



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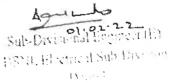




		110D72213010050 (40kW)	
	DCDB /Junction Boxes (if req	uired) (NOT APPLICABLE)	
35	GTP of JB as per RfS (duly signed by bidder and manufacturer)	NA	_
36	IP protection level	NA	
37	Bus bar material of DCDB	NA	
38	MCB/MCCB installed	NA	<u> </u>
39	Surge arrester, SPDS	NA	
40	Material of sheet and thickness	NA	
41	Test report of DCDB	NA	<u>i.</u>
42	Height of junction box	NA	
43	Glands type	NA	
44	JB Earthing provision	NA	
	AC DISTRIBUTION PAN	EL BOARD/ LT Panel	
45	All switches and the circuit breakers, connectors standards IEC 60947, part I, II and III/ IS60947 part I, II and III)	YES, (document attached)	66
46	IP protection (Minimum 54 or better)	YES	
47	Material of LT panel and its details	Detail BOM attached.	67-69
48	Change over switch	YES	
49	Proper Earthing of ACDB (As per IS 3043-1987)	YES	
50	Surge protections	YES (Data sheet attached)	70-7/
51	Height of LT panel form ground	Min. 600 mm	,
52	Test report of ACDB as per IE Rules	YES - document attached	72
	Lightening	garrester	
-53	Proper Lighting arrester installed (As per NFC 17-102:2011/ IEC 62561)	YES Document attached	73-74
	Cab	1	
54	Meets IEC 60227/IS 694, IEC	YES, document attached	75-77



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	60502/IS1554 standards (or other as applicable)	Certificate Number: Certificate issued by: Certificate issued on: Certificate valid up to:	
55	Cable dimension and Material 1- Modules to inverters, 2- Inverter to LT panels,	1- 1C x 4 sqmm, Material — Copper (All buildings) 25- 4Cx16 sqmm & 4Cx70 sqmm, Material- Copper (Admin Bldg) 25- 4Cx50 sqmm & 4Cx70, Material- Copper (Store Bldg.) 26- 3 SCx25 sqmm & 4Cx70, Material- Copper (Water Filtration Bldg.)	
56	Voltage drop in OC cable (Modules to inverters)	2.74	-
57	Voltage drop in AC cable (inverter to LT panel or T/F)	2%	
58	Cable Routing/ Marking (GI cable tray and suitably tagged and marked with proper mainer by good quality ferrule)	YES	. more :
	Solar Plant à	Aonitoring	
59	Solar Irradiance sensor mounted on Plane of the array.	NO	
60	Irradiance Sensor calibration certificate	NO Certificate Number; Sertificate issued by Certificate issued on Certificate valid up to	Adaptive at a more decided as
61	Temperature sensor	NO	
62	Online Monitoring mechanism for the installed system	YES	78
	Transformer	(If required)	
63	Transformer rating, Type etc.	Not Applicable	
	Miscella	neous	
54	Earthing and protections (Array Structure, PCU, ACDB and DCDB) IS:3043-1987	OK	
65	Earthing Resistance less than 5 ohms	YES, valuesohms Sheet attached	79
56	NOC from the Concerned DISCOM for the connectivity, technical feasibility, and synchronization of SPV plant	Under Process	_
57	Bidirectional meters installed (for net metering)	Under Process	
 58	Accuracy and burden of Meters	0.5S	101.02
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69	Danger boards and signages	YES	
70	Fire extinguishers & Sand Buckets	YES	_
71	Tools & Tackles and spares	YES	
72	0&M manual available at site	YES	
73	Display Board	YES	•
	Drawings	at Site	A
74	Layout of solar Power Array As built drawing (A3 Sheet)	Attached	80 -81
75	Shadow analysis of the roof	Attached	80-81
76	Single line diagram of plant (SLD) A 3 sheet)	Attached	82 -183
77	Structural drawing along with foundation details for the structure (A3 Sheet)	Attached	84-80
78	Itemized bill of material for complete SPV plant covering all the components and associated accessories. The country of manufacturing needs to be mentioned for all major components like modules, inverters, cables, mounting structure, switchgear, SCADA system etc.	Attached	86-88
79	Soft copy in CD of final drawing	Attached	-
80	Photo Graphs of sites	Attached	
81	Any specific problem(s)	None	_
82	Recommendations	1 **	

Format for Performance Ratio (PR)

"Performance Ratio" (PR) means the ratio of plant output versus installed plant capacity at any instance with respect to the radiation measured.

PR = Measured Output in kW | Installed capacity in kW×Measured radiation intensity in kW/m2 × 100

Parameters	Input value	Remarks, if any	
Date and Time for PR measurement	Dal- 01-02-22	Two- 12:15 pm	



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Sub-Divisional Engineer (E)
RSNL Electrical Sub-Division
Descrip

(7/-1)

Inspection Report of 462.3 kWp Rooftop Solar Plant Installed at DVC- Raghunathpur Thermal Power Station/Project-2, Purulia

A) Installed Plant Capacity in kW	462.3
B) Measured output in kW	266.34
C) Measured radiation intensity in W/m ²	710
Performance Ratio (%) (B*1000 ×100)	710 x 462.3 = 81.14 /

Declaration:

- It is to certify that all the information given above is true and correct to best of our knowledge. The plant is found to be installed as per the technical specifications mentioned in SECI's RfS No.: SECI/C&P/RfS/MNRE/97.5MW GCRT/R1/IND/082019 deted: 29/08/2019.
- 2. The Bidder declares that they including their Affiliate/Group company will not claim any subsidy/incentive using this project under any other schemes of Central/State Govt./Public sector Undertaking.

Signature of Inspecting Officer, Date & Name

Name - Agrind Proleagh Yadas

Agund Edo 01.02.22 Let a Demonstrate Division Uses

Signature of Representative of Bidder, Date & Sen

Signature of Government Building Representative, Date & Seal – Conforming Installation of rooftop solar plant at their building and its satisfactory operation

धर्मेन्द्र शर्मा/Dharmendra Sharma उप मुख्य अभियंता/Dy. Chief Engineer अक्षय कर्वा और कर्वा दक्षताRenewable Energy & Energy Efficiency दामोदर घाटी निगम/Damodar Valley Corporation

राजीव खान/Rajib Khan बिए मंडलीय अभियंता (बि)/Sr. Divisional Engineer (E) अक्षय ऊर्जा और ऊर्जा दक्षता/Renewable Energy & Energy Efficiency दामोदर घाटी निगम/Damodar Valley Corporation

