



S.N.	DESCRIPTION	UNIT	QTY.	RATE IN FIGURE	RATE IN WORDS	Remarks
1	Solar PV module, bifacial half cut, Mono half cut, at least 450Wp, efficiency at least 21%, IEC 61215-2:2021 certification	Wp	1			
2	Module mounting structure: For ground mounted and flat roof mounted system, the PV module structure must be made of MS hot-dip galvanized suitable sections of rectangular tubes, angles and channels. The minimum standards to be followed are: Vertical leg (Main leg): Minimum 80mmx40mmx6mm Rectangular Hollow Section Rafter: Minimum 80mmx40mmx2mm Rectangular Hollow Section Purlin: Minimum 80mmx40mmx2mm Rectangular Hollow Section Column bracing or supporting bracing: Minimum 40mmx40mmx5mm angle Base plate: Minimum 200mmx200mmx6mm	kWp	1			
3	Module mounting structure (anodized aluminum or GI) suitable for industrial shed or GI sheet, either pasting type or others	kWp	1			
4	IP65 DC Combiner Boxes with 20A string fuse, 20A DC Breakers, 40kA/1000V DC, Type I+II SPD with earth bar	Set	1			
5	IP54 AC DB Box with 32-63A, 25kA 4P MCCB, 40kA 3P+N Type I+II AC SPDs with earth bar, phase indicators etc. individually for incoming and outgoing circuits	Set	1			
6	IP54 AC DB Box with 125A, 25kA 4P MCCB, 40kA 3P+N Type I+II AC SPDs with earth bar, phase indicators etc. individually for incoming and outgoing circuits	Set	1			
7	5kW VFD controller, 3-phase, hybrid type (Solar +Grid input) and a bypass function, with remote controller, advanced MPPT function, including SPD, MCB/MCCB, with protection function- dry run protection, low/over voltage protection, overload protection with IP54 polycarbonate box	Set	1			
8	8kW VFD controller, 3-phase, hybrid type (Solar +Grid input) and a bypass function, with remote controller, advanced MPPT function, including SPD, MCB/MCCB, with protection function- dry run protection, low/over voltage protection, overload protection with IP54 polycarbonate box	Set	1			
9	10kW VFD controller, 3-phase, hybrid type (Solar +Grid input) and a bypass function, with remote controller, advanced MPPT function, including SPD, MCB/MCCB, with protection function- dry run protection, low/over voltage protection, overload protection with IP54 polycarbonate box	Set	1			

2/2/2023
[Signatures]

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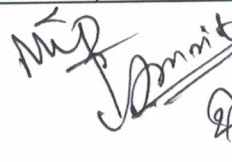


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S.N.	DESCRIPTION	UNIT	QTY.	RATE IN FIGURE	RATE IN WORDS	Remarks
10	15kW VFD controller, 3-phase, hybrid type (Solar +Grid input) and a bypass function, with remote controller, advanced MPPT function, including SPD, MCB/MCCB, with protection function- dry run protection, low/over voltage protection, overload protection with IP54 polycarbonate box	Set	1			
11	18kW VFD controller, 3-phase, hybrid type (Solar +Grid input) and a bypass function, with remote controller, advanced MPPT function, including SPD, MCB/MCCB, with protection function- dry run protection, low/over voltage protection, overload protection with IP54 polycarbonate box	Set	1			
12	20kW VFD controller, 3-phase, hybrid type (Solar +Grid input) and a bypass function, with remote controller, advanced MPPT function, including SPD, MCB/MCCB, with protection function- dry run protection, low/over voltage protection, overload protection with IP54 polycarbonate box	Set	1			
13	25kW VFD controller, 3-phase, hybrid type (Solar +Grid input) and a bypass function, with remote controller, advanced MPPT function, including SPD, MCB/MCCB, with protection function- dry run protection, low/over voltage protection, overload protection with IP54 polycarbonate box	Set	1			
14	30kW VFD controller, 3-phase, hybrid type (Solar +Grid input) and a bypass function, with remote controller, advanced MPPT function, including SPD, MCB/MCCB, with protection function- dry run protection, low/over voltage protection, overload protection with IP54 polycarbonate box	Set	1			
15	40kW VFD controller, 3-phase, hybrid type (Solar +Grid input) and a bypass function, with remote controller, advanced MPPT function, including SPD, MCB/MCCB, with protection function- dry run protection, low/over voltage protection, overload protection with IP54 polycarbonate box	Set	1			
16	50kW VFD controller, 3-phase, hybrid type (Solar +Grid input) and a bypass function, with remote controller, advanced MPPT function, including SPD, MCB/MCCB, with protection function- dry run protection, low/over voltage protection, overload protection with IP54 polycarbonate box	Set	1			


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17	60kW VFD controller, 3-phase, hybrid type (Solar +Grid input) and a bypass function, with remote controller, advanced MPPT function, including SPD, MCB/MCCB, with protection function- dry run protection, low/over voltage protection, overload protection with IP54 polycarbonate box	Set	1			
18	DC UV Standard multi strand cable 2 core 4 Sq. mm copper	Mtrs.	1			
19	DC UV Standard multi strand cable 2 core 16 Sq. mm copper	Mtrs.	1			
20	DC UV Standard multi strand cable 2 core 10Sq. mm copper	Mtrs.	1			
21	DC UV Standard multi strand cable 2 core 6 Sq. mm copper	Mtrs.	1			
22	DC UV Standard multi strand cable 2 core 20 Sq. mm copper	Mtrs.	1			
23	DC UV Standard multi strand cable 2 core 25 Sq. mm copper	Mtrs.	1			
24	DC UV Standard multi strand cable 2 core 35 Sq. mm copper	Mtrs.	1			
25	DC UV Standard multi strand cable 2 core 50 Sq. mm copper	Mtrs.	1			
26	6sqmm, 2C, ABC cable	Nos.	1			
27	10sqmm, 2C, ABC cable	Nos.	1			
28	16sqmm, 2C, ABC cable	Nos.	1			
29	20sqmm, 2C, ABC cable	Nos.	1			
30	25sqmm, 2C, ABC cable	Nos.	1			
31	35sqmm, 2C, ABC cable	Nos.	1			
32	50sqmm, 2C, ABC cable	Nos.	1			
33	70sqmm, 2C, ABC cable	Nos.	1			
34	6sqmm, 2C, ABC cable	Nos.	1			
35	10sqmm, 4C, ABC cable	Nos.	1			
36	16sqmm, 4C, ABC cable	Nos.	1			
37	20sqmm, 4C, ABC cable	Nos.	1			
38	35sqmm, 4C, ABC cable	Nos.	1			
39	70sqmm, 4C, ABC cable	Nos.	1			
40	ABC cable connector 6sqmm	Nos.	1			
41	ABC cable connector 10sqmm	Nos.	1			
42	ABC cable connector 16sqmm	Nos.	1			
43	ABC cable connector 20sqmm	Nos.	1			
44	ABC cable connector 35sqmm	Nos.	1			
45	ABC cable connector 50sqmm	Nos.	1			
46	ABC cable connector 25sqmm	Nos.	1			
47	ABC cable connector 35sqmm	Nos.	1			
48	ABC cable connector 50sqmm	Nos.	1			
49	ABC cable suspension clamp	Nos.	1			
50	Solar grid-tied inverter, 5kW, 3-phase, IEC 62116:2014, IEC 61727:2004, The Inverter must have a rated AC output voltage of a) Three Phase 400±10% VAC (L-L), b) Single Phase 230±10% VAC (L-N) efficiency: at least 95% or above warranty: at least 5+5 years	Nos.	1			
51	Solar grid-tied inverter, 6kW, 3-phase, 3-phase, IEC 62116:2014, IEC 61727:2004, The Inverter must have a rated AC output voltage of a) Three Phase 400±10% VAC (L-L), b) Single Phase 230±10% VAC (L-N) efficiency: at least 95% or above warranty: at least 5+5 years	Nos.	1			


 K. Prasad Rajwanshi

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S.N.	DESCRIPTION	UNIT	QTY.	RATE IN FIGURE	RATE IN WORDS	Remarks
52	Solar grid-tied inverter, 10kW, 3-phase, 3-phase, IEC 62116:2014, IEC 61727:2004, The Inverter must have a rated AC output voltage of a) Three Phase 400±10% VAC (L-L), b) Single Phase 230±10% VAC (L-N) efficiency: at least 95% or above warranty: at least 5+5 years	Nos.	1			
53	Solar grid-tied inverter, 12kW, 3-phase, 3-phase, IEC 62116:2014, IEC 61727:2004, The Inverter must have a rated AC output voltage of a) Three Phase 400±10% VAC (L-L), b) Single Phase 230±10% VAC (L-N) efficiency: at least 95% or above warranty: at least 5+5 years	Nos.	1			
54	Solar grid-tied inverter, 15kW, 3-phase, 3-phase, IEC 62116:2014, IEC 61727:2004, The Inverter must have a rated AC output voltage of a) Three Phase 400±10% VAC (L-L), b) Single Phase 230±10% VAC (L-N) efficiency: at least 95% or above warranty: at least 5+5 years	Nos.	1			
55	Solar grid-tied inverter, 20kW, 3-phase, 3-phase, IEC 62116:2014, IEC 61727:2004, The Inverter must have a rated AC output voltage of a) Three Phase 400±10% VAC (L-L), b) Single Phase 230±10% VAC (L-N) efficiency: at least 95% or above warranty: at least 5+5 years	Nos.	1			
56	Solar grid-tied inverter, 25kW, 3-phase, 3-phase, IEC 62116:2014, IEC 61727:2004, The Inverter must have a rated AC output voltage of a) Three Phase 400±10% VAC (L-L), b) Single Phase 230±10% VAC (L-N) efficiency: at least 95% or above warranty: at least 5+5 years	Nos.	1			
57	Solar grid-tied inverter, 40kW, 3-phase, 3-phase, IEC 62116:2014, IEC 61727:2004, The Inverter must have a rated AC output voltage of a) Three Phase 400±10% VAC (L-L), b) Single Phase 230±10% VAC (L-N) efficiency: at least 95% or above warranty: at least 5+5 years	Nos.	1			
58	Solar grid-tied inverter, 50kW, 3-phase, 3-phase, IEC 62116:2014, IEC 61727:2004, The Inverter must have a rated AC output voltage of a) Three Phase 400±10% VAC (L-L), b) Single Phase 230±10% VAC (L-N) efficiency: at least 95% or above warranty: at least 5+5 years	Nos.	1			
59	Solar grid-tied inverter, 100kW, 3-phase, 3-phase, IEC 62116:2014, IEC 61727:2004, The Inverter must have a rated AC output voltage of a) Three Phase 400±10% VAC (L-L), b) Single Phase 230±10% VAC (L-N) efficiency: at least 95% or above warranty: at least 5+5 years	Nos.	1			

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S.N.	DESCRIPTION	UNIT	QTY.	RATE IN FIGURE	RATE IN WORDS	Remarks
60	Solar grid-tied inverter, 150kW, 3-phase, 3-phase, IEC 62116:2014, IEC 61727:2004, The Inverter must have a rated AC output voltage of a) Three Phase 400±10% VAC (L-L), b) Single Phase 230±10% VAC (L-N) efficiency: at least 95% or above warranty: at least 5+5 years	Nos.	1			
61	Solar grid-tied inverter, 200kW, 3-phase, 3-phase, IEC 62116:2014, IEC 61727:2004, The Inverter must have a rated AC output voltage of a) Three Phase 400±10% VAC (L-L), b) Single Phase 230±10% VAC (L-N) efficiency: at least 95% or above warranty: at least 5+5 years	Nos.	1			
62	Solar grid-tied inverter, 6kW, 1/3-phase, with off grid operation (without battery mode) warranty: at least 5+5 years	Nos.	1			
63	Solar grid-tied inverter, 10kW, 1/3-phase, with off grid operation (without battery mode) warranty: at least 5+5 years	Nos.	1			
64	Solar grid-tied inverter, 15kW, 3-phase, with off grid operation (without battery mode) warranty: at least 5+5 years	Nos.	1			
65	Solar grid-tied inverter, 25kW, 3-phase, with off grid operation (without battery mode) warranty: at least 5+5 years	Nos.	1			
66	Solar grid-tied inverter, 50kW, 3-phase, with off grid operation (without battery mode) warranty: at least 5+5 years	Nos.	1			
67	Lighting Arrester (Franklyn Type) complying with IEC 62305	Nos.	1			
68	Lightning arrestor, ESE type, complying with IEC 62305 / IS 3043	Nos.	1			
69	IP54 AC DB Box with 50A, 25kA 4P MCCB, 40kA 3P+N Type I+II AC SPDs with earth bar, phase indicators etc. individually for incoming and outgoing circuits	Nos.	1			
70	1-phase outdoor junction box Polycarbonate (PC) or FRP, IP 65 rated with terminal bolcks, neutral links and earth busbars, along with DIN rail for 6A, SP MCB, pole or wall mounting for light distribution	Nos.	1			
71	3-phase power supply, outdoor junction box Polycarbonate (PC) or FRP, IP 65 rated with terminal bolcks, neutral links and earth busbars, along with DIN rail for 6A SP MCBs, 30A MCCB, suitable size MCBs, pole or wall mounting for light distribution	Nos.	1			
72	cable lug, Cu.	Nos.	1			
73	Ring Type- 4 Sq.mm.	Nos.	1			
74	Cu, Ring Type- 70 Sq.mm.	Nos.	1			
75	Cu, Ring Type- 70 Sq.mm.	Nos.	1			
76	Bi - Metallic Ring Type -35 Sq.mm, Long Barrel type	Nos.	1			
77	Bi - Metallic Ring Type - 240 Sq.mm, Long Barrel type	Nos.	1			
78	Al Ring Type - 35 Sq.mm, Long Barrel type	Nos.	1			
79	Al Ring Type - 240 Sq.mm, Long Barrel type	Nos.	1			

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List of Solar Items						
S.N.	DESCRIPTION	UNIT	QTY.	RATE IN FIGURE	RATE IN WORDS	Remarks
80	Al Ring Type - 400 Sq.mm, Long Barrel type	Nos.	1			
81	Al Ring Type - 400 Sq.mm, Long Barrel type	Nos.	1			
82	Al Ring Type - 300 Sq.mm, Long Barrel type	Nos.	1			
83	32 mm for 1RX 4X 35 sqmm	Nos.	1			
84	82 mm for 6RX 3.5X 400 sqmm	Nos.	1			
85	70 mm for 6RX 3.5X 300 sqmm	Nos.	1			
86	MC4 Connector, as per IEC 62852	Nos.	1			
87	3-phase power supply, outdoor junction box Polycarbonate (PC) or FRP, IP 65 rated with terminal bolcks, neutral links and earth busbars, along with DIN rail for MCB, suitable size MCBs, pole or wall mounting for light distribution	Set	1			
88	1-phase power supply, outdoor junction box Polycarbonate (PC) or FRP, IP 65 rated with terminal bolcks, neutral links and earth busbars, along with DIN rail for MCB, suitable size MCBs, pole or wall mounting for light distribution	Set	1			
89	Remote monitoring unit/ controller to restrict back feed to the grid for 3 phase grid-tied inverter and/or diesel generator controller (eg. wattmon or equivalent)	set	1			
90	Remote monitoring unit/ controller to restrict back feed to the grid for 1 phase grid-tied inverter and/or diesel generator controller (eg. wattmon or equivalent)	set	1			

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S.N.	DESCRIPTION	List of High Mast Items		RATE IN FIGURE	RATE IN WORDS	Remarks
		UNIT	QTY.			
1	Design, Supplying, Delivery, Installation, Testing and Commissioning of 16 meter High Mast Pole (Approved make: Volmount, Bajaj, Lysaght and Kesselec or equivalent) system, Mast shaft shall be hot dip galvanised and suitable for wind velocity 50 m/s as per IS 875. It shall also include all accessories for high mast including head frame, trailing cable, double drum winch, galvanised lantern carriage arrangement suitable for 10 luminaires & its control gear boxes each accomodating following items. i. Lifting system comprising doubledrum winch having 50:1 gear ratio with SWG 500 kg capacity and having self lubricating system in a permanent oil bath. ii. SS wire with 6mm diameter having 7/19 construction and a AISI 316 grade verification of required length. iii. Flexible copper 5 core 4sq mm EPR insulated PCP sheathed/PVC trailing cable of required length for all the luminaires connection with FLP Fittings and Glands iv. Integral Power tool installed inside the base compartment for its operation having reversible, single speed 2 HP FLP motor. v. Door opening at the base of the mast, locking mechanism in the door panel, manual handle, junction box, base plate and other required accessories.	Set	1			
2	Design, Supply, delivery, installation, testing and commissioning of 12.5 m high mast lighting system comprising tapered octagonal hot-dip galvanised high tensile steel mast shaft with suitable base plate, designed to withstand wind velocity of 50 m/s as per IS 875 Part 3 and galvanised as per IS 4759, including internal motorized raising and lowering mechanism with stainless steel wire rope, pulley system, oil-lubricated gear arrangement, motorized winch with manual override of suitable lifting capacity, complete with head frame/lantern carriage for luminaire mounting, IP66 rated Junction Box, suspension system, EPR insulated trailing cable, weatherproof service door, control gear, internal wiring, earthing and lightning protection system, as per approved drawings, specifications and instructions, etc. all complete.	Set	1			

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List of High Make Items

S.N.	DESCRIPTION	UNIT	RATE IN FIGURE	RATE IN WORDS	Remarks
3	Supply, Delivery, Installation, Commissioning and Testing of LED Flood light luminaire 1 set of 350W (Approved Make: KESSELEC, CREE, DISANO, ABACUS, GE, NERI and PHILIPS or equivalent), electrical Class I, with pressure die casted Aluminium body, toughened glass protector, IP66, IK 08, each LED with a specific lens, the luminaire shall have a Lumen Output >120 lm/W at CCT of 3000 K and Colour Rendering Index greater than or equal to 70, a driver (efficiency greater than or equal to 90%) with internal surge protection of 4 kV and external surge protection of 10 kV, Power Factor >0.95, a residual flux of 70% (L70) @ 50,000 hours at Ta 25 degree C	Set	1		
4	Supply, delivery, installation, testing and commissioning of 100W LED Flood Light suitable for outdoor highmast, the luminaire shall have high-pressure die-cast aluminium housing with integrated heat sink, polycarbonate lens with precision optics providing uniform light distribution, having following technical specifications: Wattage: 100W ±10% inclusive of driver losses, Input voltage: 120–270V AC, 50Hz, Frame Color: Black, IP Rating: IP66, Luminous flux: not less than 12,000 lumens, Efficacy: greater than or equal to 120 lm/W, CCT: 4000K, CRI: greater than or equal to 70, Power factor: greater than or equal to 0.90, THD: less than or equal to 10%, Driver: Isolated constant current flicker-free LED driver, SPD: 6kV on Differential Mode & 10kV on Common Mode, Operating temperature: –10°C to +45°C, Flexible Fixture Wire Length: 2meter, Beam Angle: 110x40D, etc. all complete. (Heritage, Wipro, Kesselec, Novarix, or equivalent)	Set	1		

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List of High Value Items				
S.N.	DESCRIPTION	UNIT	QTY/NO. RATE IN FIGURE	RATE IN WORDS
5	Supply, Delivery, Installation, Commissioning and Testing of dust vermin and Flame proof IP 67 outdoor stand mounted feeder pillar [Approved switch gear make: Schneider ACTI9, Legrand DPX3, and Siemens 3VL] of suitable size complete with the following: i. Canopy at Top ii. Hinged door openable on both side with heavy duty locking system - 2nos iii. 32A 4P MCB incomer - 1nos iv. Astronomical Timer Switch (Yearly, Weekly time switch)- 1 nos v. 25A TPN contactor - 1 nos vi. 6A 16A, SP, MCB for Luminaries and motor - 5 nos vii. Heavy duty godown lock-2 nos viii. Power tool control, Push Button for Up and Down	Set	1	
6	Supply, delivery, installation, testing and commissioning of IP54 Rated Feeder Panel, floor mounted, free-standing, dust and vermin proof, fabricated from 2.0 mm CRCA sheet steel with 7-tank process powder coating, double-door with 4 mm toughened glass viewing panel, and removable bottom gland plates as required. The panel shall be fully compartmentalized, including all necessary accessories for internal wiring (power and signal cables), astronomical timer, excluding protective devices, and measuring instruments. Circuit labeling shall be provided, and the system SLD shall be accessible via QR code affixed on the panel. The inside of the panel shall be well illuminated with LED lighting, provided with automatic door switch and minimum 5-hour battery backup, having following technical specifications: -Degree of Protection: Minimum IP54 (higher IP rating if required by site conditions). -Main Busbar: TPN Cu (25 x 3 mm, single run), -Earth Busbar: Cu (25 x 3 mm, single run). -Busbar Protection: Full shrouding with flame-retardant, non-tracking acrylic covers. -Ventilation: Filtered exhaust ventilation system with suitable provisions. -Other Provisions: Spare housing for future energy meter expansion and internal document holder, the panel shall undergo the verifications and testing (mandatory), manufacturer shall provide Certificates of Conformity, type test reports, and routine test reports prior to dispatch, etc. all complete	Set	1	
7	Supply, Delivery, Installation, Commissioning and Testing of LED aviation obstruction light all complete.	Set	1	
8	Supply, Delivery, Installation, Commissioning and Testing of 1200mm lighting protection finial as per drawing, specification and instruction all complete.	Set	1	

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