

Bill of Quantities



SHEILD
— ASSOCIATION —

Item	Description	Unit	Estimated Quantity	Unit Rate \$	Amount \$
	<u>Civil and Miscellaneous Works</u>				
	<u>Metallic Support Structure for PV installation</u>				
	<p><u>Metallic structure for PV panels mounting with concrete curbstones</u></p> <p>Supply, install, test and commission, galvanized steel support structure for PV arrays able to withstand wind speed up to 140 km/h, with anti-rust treatment and epoxy painting at welding areas.</p> <p>Installation shall be complete with all required accessories, clamps and fittings, curbstones, according to the specifications, the drawings, to the approval of the supervision entity at SHEILD and SLWE دائرة مراقبة التنفيذ.</p>				
	Galvanized steel support structure for 40 PV panels having an estimated total area of 120 m ² , columns, concrete curbstones manpower and welding <i>Unit Rate in Words:</i>	LS	1		
	<u>Electrical Works</u>				
	<u>Electrical Panelboards</u>				
	<u>Power and Control Panelboards</u>				

Supply, transport, install, test and commission of electrical panel boards, to be sealed, vandal-proof, weatherproof IP54, entirely made of thick steel sheets, having a hinged front door with a minimum of 2 locks, complete including galvanized steel mounting chassis 400mm minimum height, accessories, galvanized steel plate for cable protection, cable glands, louvers with screens, ventilation fans, HDPE sleeves for cable's entry, internal cables, circuit breakers, selector switch, voltage protections, overload protections, surge arresters, witness lamps, earthing bar with connection to the earthing system, and all other related works.

Item shall be complete including protections, manpower, accessories, fittings and all other related works, all as specified, shown on drawings and to the satisfaction of the supervision entity at SHEILD and SLWE دائرة مراقبة التنفيذ.

	<p>30 KW Hybrid Inverter/s (parallel operation if needed), with all of the required DC cables, AC power cables, control cables, accessories, mounting fittings and protections.</p> <p><i>Unit Rate in Words:</i></p> <p>.....</p> <p>.....</p>	No	1		
	<p>30 KWH Lithium Battery bank, composed of renowned BMS and cells (6000 cycle). BMS to be compatible with the proposed inverter.</p> <p><i>Unit Rate in Words:</i></p> <p>.....</p> <p>.....</p>	No	1		
	<p>Weatherproof IP54, rust proof and vandal proof, Protection Enclosure including AC and DC protections, with AC and DC SPDs, including all required components and rewiring if needed.</p> <p><i>Unit Rate in Words:</i></p> <p>.....</p> <p>.....</p>	No	1		

	<p>4 poles MTS with enclosure rated 4x100A, with all of the required cables, accessories, mounting fittings and weatherproof IP54, rust proof and vandal proof, MTS Panel.</p> <p><i>Unit Rate in Words:</i></p> <p>.....</p> <p>.....</p>	No	1		
	<p>Supply and install wall mounted ventilation/exhaust fan (~50watt, 6 inch size)</p> <p><i>Unit Rate in Words:</i></p> <p>.....</p> <p>.....</p>	No	4		
	<p>Supply and install wall mounted split type 12000 BTU inverter type air condition</p> <p><i>Unit Rate in Words:</i></p> <p>.....</p> <p>.....</p>	No	2		
	<p>Supply and install wall mounted portable fire extinguishers. (One rated class A and one rated class C fire extinguishers)</p> <p><i>Unit Rate in Words:</i></p> <p>.....</p> <p>.....</p>	No	2		
<u>Photovoltaic (PV) Module</u>					
	<p>Supply, transport, install, test and commission a Solar Photovoltaic (PV) Module of the Mono-crystalline type, preferably not less than 650Wp, Half Cells, protected by anti-reflective coated tempered glass and having a conversion efficiency greater or equal to 21%. Lower rated PV modules may be used, but not less than 540 Wp, as long as the desired total KW is met.</p> <p>Item shall be handed over by SLWE to the contractor.</p> <p>Contractor shall install the panels complete including protections, manpower, accessories, fittings and all other related works, all as specified, and to the satisfaction of the supervision entity at SHEILD and SLWE دائرة مراقبة التنفيذ.</p>				
	650Wp, Half Cells , 21% efficiency PV Module.				

<i>Unit Rate in Words:</i>	No	40		
<u>Earthing system.</u>				
<p>Supply, transport, install, test and commission an earthing system, complete including all necessary electrodes (minimum of 3 rods), inspection pits with precast concrete handhole, bare copper conductor of 50 mm², earth bus bar with test link, excavation, backfilling, compaction, and all other related works to achieve an earth resistance of less than 5 ohms, to be proven by a certified earth resistance test, witnessed by the supervision entity at SHEILD and SLWE دائرة مراقبة التنفيذ and officially reported by the Contractor to the Client.</p> <p>Item shall be complete including protections, manpower, accessories, fittings and all other related works, all as specified, and to the satisfaction of the supervision entity at SHEILD and SLWE دائرة مراقبة التنفيذ.</p>				
Earthing system. <i>Unit Rate in Words:</i>	No	1		
<u>Lightning protection system.</u>				
<p>Supply, transport, install, test and commission an earthing system, complete including all necessary electrodes (minimum of 3 rods), inspection pits with precast concrete handhole, bare copper conductor of 50 mm², earth bus bar with test link, excavation, backfilling, compaction, and all other related works to achieve an earth resistance of less than 5 ohms, to be proven by a certified earth resistance test, witnessed by the supervision entity at SHEILD and SLWE دائرة مراقبة التنفيذ and officially reported by the Contractor to the Client.</p> <p>Item shall be complete including protections, manpower, accessories, fittings and all other related works, all as specified, and to the satisfaction of the supervision entity at SHEILD and SLWE دائرة مراقبة التنفيذ.</p>				

	Lightning protection system. <i>Unit Rate in Words:</i>	No	1		
<u>Power and Control Cables.</u>					
	Supply, install, test and commission of DC and AC power cables with all necessary lugs, connectors, cable glands, accessories and fittings. Item shall be complete including accessories, fittings and all related civil works, all as specified, and to the satisfaction of the supervision entity at SHEILD and SLWE دائرة مراقبة التنفيذ				
	<i>Unit Rate in Words:</i>	LS	1		
Total					

