SCHEDULE OF ITEMS FOR ELECTRICAL WORKS OF 20 kWp BUILDING INTEGRATED SOLAR PHOTOVOLTAIC POWER PLANT AT THE SEMINAR HALL, STATE LEVEL ENERGY PARK COMPLEX AT SIDDU-KANU UDYAN, RANCHI, JHARKHAND

Sl. No.	Description of Items	Unit	Qty.	Rate	Amount
1	Supply and fitting of 20 kWp Solar PV Modules on the roof structure with stainless steel nuts & bolts for fixing up with module mounting structure as per specification.	Set	1		
2	Design, fabrication, supply, fitting & fixing of hot dip galvanized MS angle frame for Module mounting on the roof integrated with RCC portion of the roof in such a manner to make it completely water proof.	Set	1		
3	Supply & installation of Junction Boxes made of Thermo Plastic with adequate size current collection terminal having 650V grade insulation as per specification.				
3.1	Sub Array Junction Box for 20 kWp Solar PV Array	Set	1		
3.2	Main Junction Boxes for 20 kWp Solar PV Array	Set	1		
4	Supply, installation, testing & commissioning of low maintenance tubular plate type lead acid battery bank comprising of 120 nos. 600 Ah, 2 V batteries connected in series by means of tinned copper bus of appropriate size in each bank with required size Wooden Rack as per specification.	set of 2 Banks	1		
5	Design, manufacture, supply and installation & interconnection of Plant Controlling Unit complete along with the equipment as detailed below as per specification.				
5.1	Design, manufacture, testing, supply, fitting, fixing & connection and installation of Charge Controlling Unit suitable to charge a 240V, 600 AH battery bank from a 20 kWp SPV Array as per specification.	No.	1	Included in Sl.No.5.4.	
5.2	Design, manufacture, supply, testing, fitting, fixing & connection and installation of Auxiliary Battery Charger as per specification.	No.	1	Included in Sl.No.5.4.	
5.3	Design, manufacture, supply, fitting, fixing & connection of Battery Protection Control Panel suitable for protection of the Battery Banks against any malfunctioning of the system as per specification.	No.	1	Included in Sl.No.5.4.	

Sl. No.	Description of Items	Unit	Qty.	Rate	Amount
5.4	Design, manufacture, supply and installation of 25 KVA, 3-phase, 50 Hz, 240 V DC input and 415 V, 3Φ, 4 wire 50 Hz AC output Inverter along with all protection and controlling arrangement as per specification.	No.	1		
6	Design, manufacture, supply, installation, interconnection, and interfacing of Computer Aided Data Acquisition Unit as per specification. Any accessories, not mentioned in the technical specification but required to complete the system, shall have to be supplied with this system.	No.	1		
7	Supply, laying and connecting armoured PVC sheathed PVC insulated copper conductor cable including supply and fixing of compression type best quality cable glands made of brass as required.				
	a) 1 Cx 4 sq.mm	Metre	60		
	b) 2 Cx 2.5 Sq.mm	Metre	300		
	c) 2 C x 6 Sq.mm	Metre	30		
	d) 2 Cx 10 Sq.mm	Metre	200		
	e) 2 C x25 Sq.mm	Metre	200		
	g) 3.5 Cx16 Sq.mm	Metre	50		
	h) 3.5C x 25 sq.mm	Metre	40		
	Total cost of cables				
8	Providing and fixing lightning conductor finial, made of 25 mm dia. 300 mm long copper tube, having single prong at top, with 85 mm dia. 3 mm thick copper base plate including holes etc. complete as required.**(LCFCU)**	No.	4		
9	Riveting, sweating and soldering copper (with another copper/GI tape, base of the finial; or any other metallic object) as required.(**LCRSS)**	Each	40		
10	Providing & fixing copper tape 20 mm x 3 mm thick on parapet or surface of wall for lightning conductor complete as required for horizontal run.**(LCCUTSURH)**	Meter	40		
11	Providing & fixing copper tape 20 mm x 3 mm thick on parapet or surface of wall for lightning conductor complete as required for vertical run.**(LCCOTSURV)**	Meter	100		

Sl. No.	Description of Items	Unit	Qty.	Rate	Amount
12	Providing & fixing testing joint, made of 20 mm x 3 mm thick copper strip, 125 mm long, with 4 Nos. of tinned brass bolts, nuts, check nuts and spring washers etc. complete as required.**(LCTJCU)**	Each	12		
13	Providing and laying copper tape 32 mm x 6 mm from earth electrode directly in ground as required. for kightning conductor **(LCEARCUT)**	Meter	50		
14	Earthing with copper. earth plate 600 mm x 600 mm x 3 mm thick including accessories & providing masonary enclosure with cover plate having locking arrangement and watering pipe etc including charcoal and salt). complete as required.**(EARCUPL + EARCHARPL)**	Set	6		
15	Supplying and laying 8 SWG copper wire at 0.50 metre below ground level for conductor earth electrode, including soldering etc. as required.(**EAR8GCUWR**)	Meter	40		
16	Providing & fixing 25 mm x 5 mm copper strip on surface or in recess for connections etc. as required.**(EARCUSTSUR)**	Meter	40		
17	Providing & fixing earth bus in the Control Room & Battery Room with 50mm x 5 mm thick copper strip on surface for connections etc. as required **(EARBUS)**.	Meter	30		
	All related items like Exhaust Fan for battery room and light point etc, have been included in the wiring estimate for the Seminar Hall.				
	TOTAL		-		