

6.5 MWp(DC) / 5 MW(AC) Grid Connected Groung mounted Solar Power Plant, at Nalanda University - Rajgir, BIHAR							
BOQ							
Sl. No	Name of Work	S//O	Unit	Qty	weightage in %	Rate/Unit	Total
(A)	Supply, installation, testing & commissioning:-						
1	Installation & commissioning of BHEL supplied items :						
1(a)	PV Modules with required nos of SS 304 nuts, bolts & washers as per Technical spec	I	Nos	20000	6.8692%	₹0.00	₹6.87
1(b)	Optimizer (4:1) with MC-4 connectors	I	Nos	5000	1.2822%	₹0.00	₹1.28
1(c)	Inverter & Accessories (50kVA- 200kVA)	I	Nos	50	0.9312%	₹0.02	₹0.93
1(d)	Erection of Module Mounting Structure with necessary SS 304 nuts , bolts & washers, as per drg No-24012100001, Rev 01 , tightening to required torque, drilling holes in case of any mismatch, all complete as per Technical spec.	I	Per Module	20000	14.6542%	₹0.00	₹14.65
2	ACDB supply & installation						
2(a)	Supply of ACDB/ACCB (50kVA-200kVA)	S	Nos	50	4.2360%	₹0.08	₹4.24
2(b)	ACDB/ACCB (50kVA-200kVA)	I	Nos	50	0.5136%	₹0.01	₹0.51
3	DC cabling						
3(a)	Supply of DC cable (4sqmm)	S	RMT	55000	7.5561%	₹0.00	₹7.56
3(b)	DC cable Laying through conduit pipe/ cable tray as per requirement - 8x4 Sq mm DC	I	RMT	6875	0.6297%	₹0.00	₹0.63
4	AC power Cabling (From Inverter to ACDB)						
4(a)	Supply of PVC sheathed XLPE copper conductor unarmoured 4core power cable of 1.1 KV grade of following size						
4 a (i)	16 Sqmm to 35 Sqmm	S	RMT	55	0.3705%	₹0.01	₹0.37
4a (ii)	Above 35 Sqmm to 95 Sqmm	S	RMT	55	0.7100%	₹0.01	₹0.71
4(b)	Laying and fixing of PVC sheathed XLPE copper conductor unarmoured 4core power cable of 1.1 KV grade of following size (including supply of accessories such as lugs, gland).						
4(b1)	16 Sqmm to 35 Sqmm	I	RMT	55	0.0083%	₹0.00	₹0.01
4(b2)	Above 35 Sqmm to 95 Sqmm	I	RMT	55	0.0176%	₹0.00	₹0.02
5	AC LT power Cabling (From ACDB to LT Panel)						
5(a)	Supply of PVC sheathed / XLPE, Armoured Aluminium conductor 4 core power cable of 1.1 KV grade of following size						
	Above 95 Sqmm to 185 Sqmm	S	RMT	3000	11.6089%	₹0.00	₹11.61
5(b)	Laying of PVC sheathed / XLPE, Armoured Aluminium conductor 4 core power cable of 1.1 KV grade of following size direct in ground including excavation of trench up to 1m, sand cushioning, protective covering and refilling the trench etc as required						
	Above 95 Sqmm to 185 Sqmm	I	RMT	3000	4.8084%	₹0.00	₹4.81
6	AC LT power bus duct (From LT Panel to Transformer)						
6(a)	Busduct - 3200A	S	RMT	12	2.2912%	₹0.19	₹2.29
6(b)	Busduct - 3200A	I	RMT	12	0.2720%	₹0.02	₹0.27
7	AC - HT (11kV) 3Core power cabling from Transformer to HT Panel						

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7(a)	Supply of PVC insulated and PVC sheathed / XLPE, 3core Armoured Aluminium conductor power cable of 11 kV grade of following size						
	Above 35 Sqmm to 95 Sqmm	S	RMT	900	2.8850%	₹0.00	₹2.89
7(b)	Laying of PVC insulated and PVC sheathed / XLPE, Armoured power cable of 11 KV grade of following size direct in ground including excavation, sand cushioning, protective covering and refilling the trench etc as required						
	Above 35 Sqmm to 95 Sqmm	I	RMT	900	1.4425%	₹0.00	₹1.44
8	Supply & Installation of Conduits along with all accessories for cable laying						
	Supplying and fixing of following sizes of medium class HDPE/uPVC conduit along with accessories in surface/recess including jointing with all bends, adhesives etc., cutting the wall and making good the same in case of recessed conduit as required.						
8(a)	50 mm	S&I	RMT	3000	0.8243%	₹0.00	₹0.82
9	Supply & Installation of GI cable tray, including jointing, welding, bending & applying cold galvanised paint at welding locations , all complete as per drgs & tech. spec.						
9(a)	up to 35sqmm	S&I	RMT	700	0.4488%	₹0.00	₹0.45
9(b)	above 35sqmm upto 95sqmm	S&I	RMT	700	0.4808%	₹0.00	₹0.48
9(c)	above 95sqmm	S&I	RMT	600	0.6512%	₹0.00	₹0.65
10	Supply and installation of Earthing Strips						
10(a)	25x5 mm GI Strip	S&I	RMT	1500	1.1128%	₹0.00	₹1.11
10(b)	Earthing Wire (Green 2.5 Sqmm)	S&I	RMT	2000	0.3206%	₹0.00	₹0.32
11	Construction of Earth Pits with 300 thk alternate layers of charcoal & salt, including exaction, back filling,75 dia 3 m long tapered GI pipe with holes at regular intervals at right angles to each other, and testing megger value as per design, including all material, cost of consummables etc. as per drawings & technical specs, all complete.						
11(a)	For chemical Earthing / Conductor Earthing (Pipe) (as per Approved Documents)	S&I	Nos.	70	1.7015%	₹0.02	₹1.70
12	Integration of Power						
12(a)	Supply of LT Panel having rating of (415 volt, 3200 Amp, 2000kVA)	S	No	3	8.2430%	₹2.75	₹8.24
12(b)	Installation & commissioning of LT panel having rating of (415 volt, 3200 Amp, 2000kVA) including termination of incoming & outgoing cables/busduct etc, including all material consummables etc.	I	No.	3	0.2061%	₹0.07	₹0.21
13	Supply & Installation of :-						
13(a)	Rating board / Name Plate	S&I	No.	14	0.0192%	₹0.00	₹0.02
13(b)	Display board	S&I	No.	2	0.0046%	₹0.00	₹0.00
13(c)	Danger Board	S&I	No.	60	0.0481%	₹0.00	₹0.05

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14	Fire fighting System						
14(a)	Portable Fire extinguisher	S&I	Set	10	0.3091%	₹0.03	₹0.31
14(b)	Fire Bucket set	S&I	Set	6	0.0330%	₹0.01	₹0.03
15	Lightning Protection						
15(a)	Lightning Arrestor - ESE type	S&I	Nos	6	0.8930%	₹0.15	₹0.89
15(b)	Event Counter	S&I	Nos	6	0.1511%	₹0.03	₹0.15
15(c)	Mast (10 meter long)	S&I	Nos	6	0.2610%	₹0.04	₹0.26
15(d)	Earthing strip (Cu 20 X 3)	S&I	RMT	80	0.1051%	₹0.00	₹0.11
15(e)	Earthing pit (Cu plate type 600 X 600 X 3.15)	S&I	Set	12	0.6481%	₹0.05	₹0.65
16	Supply & installation of Surveillance System						
16(a)	CCTV based including mounting accessories, cables, storage devices, etc as per technical specification	S&I	Set	1	1.3738%	₹1.37	₹1.37
17	Net Metering including supply & installation of net meters, gross meters, CT, and items & accessories alongwith liaising with all related local / Govt authorities to get their approval.	S&I	Set	1	1.3738%	₹1.37	₹1.37
(B)	Civil Work:-						
1	Construction of foundation for inverter, ACDB, LT panel, etc. with all materials, with necessary formwork, mixing , placing & compaction & curing of concrete, all complete as per drgs. & spec.						
1(a)	RCC / PCC M20 (1:1.5:3)	S&I	Cum	30	0.8600%	₹0.03	₹0.86
2	Earth Work:-						
2(a)	Excavation of earth	I	Cum	30	0.0235%	₹0.00	₹0.02
2(b)	Back filling / disposal of surplus earth	I	Cum	30	0.0283%	₹0.00	₹0.03
(C)	Operation & Maintenance						
1	Comprehensive Operation & maintenance of plant for 5 years, after commissioning & handing over (including deputation of 1 Engineer + 1 Supervisor + 2 Electricians), as per Technical Specs,	O	Month	60	18.7924%	₹0.31	₹18.79
Total							₹100.00