

Bill of Quantities

Supply and delivery of substation materials

Schedule of quantities and Rates / Price (s)					
Item No.	Description	Unit	Qty	Rate/unit. (Excl VAT)	Total Price (Excl VAT)
Material for 3kV DC Traction substation					
1.	Holding coil contactor, DC, 25KA, 3 pole 25A, 110V DC.	Each	10	R.....	R.....
2.	Current Monitor Relay – OCP /D 11 Pin Relay (220 VAC coil supply)	Each	15	R.....	R.....
3.	Fuse NH00 Din 80A for 400 VAC Circuit	Each	5	R.....	R.....
4.	Fuse HH00 Din 40Amp for 110V DC Circuit	Each	5	R.....	R.....
5.	Delay on Timer -DP1 (Rectifier fan fail) 220V AC coil 0 to 60 seconds.	Each	15	R.....	R.....
6.	Delay on Timer - DP2 (Rectifier Diode and Over temp trips) 220V AC coil	Each	15	R.....	R.....
7.	Delay on Timer DP1 (Rectifier fan Running Time) 220VAC coil 0 to 30 second	Each	15	R.....	R.....
8.	110V DC Battery under Voltage (Type = RHOMBERSP200) Relay	Each	15	R.....	R.....
9.	Diode Monitor Card, Cathode Left Dual	Each	10	R.....	R.....
10.	Diode Monitor Card, Anode Left Dual	Each	10	R.....	R.....
11.	Diode Monitor Card, Cathode Left Single	Each	10	R.....	R.....
12.	Diode Monitor Card, Anode Left Single	Each	10	R.....	R.....
13.	24 Way Diode Monitor Card	Each	5	R.....	R.....
14.	Fan Controller Card – 18/24 (50/80 degree Celsius)	Each	10	R.....	R.....
15.	Power Supply PSU 120/24 VDC 18/24 Diode React	Each	5	R.....	R.....
16.	Digital Ampere Meter (0 – to 4000A)	Each	10	R.....	R.....
17.	Digital Voltmeter (0 – to 4000V)	Each	10	R.....	R.....
18.	3kV DC Undervoltage Receiver Cards	Each	10	R.....	R.....
19.	Interval Timer 0 – 30 sec 110VDC Coil IPI	Each	10	R.....	R.....

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20.	3kV DC Undervoltage Transmitter.	Each	10	R.....	R.....
21.	3kV DC Undervoltage Electronic Card	Each	10	R.....	R.....
22.	Drop type fault Annunciator 110V DC	Each	6	R.....	R.....
23.	DeHn Guard 4 pole Arrestor 400V AC	Each	5	R.....	R.....
24.	DeHn Guard Surge Arrestor 110V DC 150V N – PE	Each	5	R.....	R.....
25.	Main Current Breaker 400V AC 100A 3 pole CB 25 KA	Each	5	R.....	R.....
26.	Manual Motor Starter 17 – 23A Rectifier fans	Each	5	R.....	R.....
27.	Contactor 4KW, 3 Poles, 110V DC coil for track breaker	Each	15	R.....	R.....
28.	Bucket Grease for HT Switch gear	Each	1	R.....	R.....
29.	95mm ² Lug (12 X 95)	Each	200	R.....	R.....
30.	95mm ² single core, Flexible copper cable with yellow insulation, drum	Each	1	R.....	R.....
31.	ECR Card for Track breakers	Each	20	R.....	R.....
32.	Cable Tiles	Each	100	R.....	R.....
33.	NO-Volt coil 110V ABB	Each	5	R.....	R.....
34.	Tripping Coil 110V ABB	Each	6	R.....	R.....
35.	Closing Coil 110V ABB	Each	6	R.....	R.....
36.	Diode Board 10 Way for indication	Each	10	R.....	R.....
37.	110V DC Battery Undervoltage (type – AC /DC Dynamic VCP1)	Each	10	R.....	R.....
Material for 11kV Distribution Substation					
38.	35mm ² four Core, LV ABC Cable, 500m drum.	Each	1	R.....	R.....
39.	11kV ABC Cable Single Core XLPE, cable Joints.	Each	50	R.....	R.....
40.	11kV ABC Cable Single Core XLPE, cable Terminations.	Each	50	R.....	R.....
41.	Screw Ferrule (50 – 70 mm size)	Each	100	R.....	R.....

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42.	Lugs 35 mm (12 * 35)	Each	100	R.....	R.....
43.	Lugs 50 mm (12 * 35)	Each	100	R.....	R.....
44.	Lugs 70 mm (12*35)	Each	100	R.....	R.....
45.	Insulation Tapes Nitto	Each	15	R.....	R.....
46.	Strain Clamp	Each	10	R.....	R.....
47.	Buckle 19mm	Each	300	R.....	R.....
48.	Strap Stainless steel	Each	5	R.....	R.....
49.	11kV Fuse 10A	Each	50	R.....	R.....
50.	AQ Protection Relay	Each	3	R.....	R.....
51.	Surge Arrestor for 11kV transmission line, rating 12KV	Each	20	R.....	R.....
52.	Siemens Relay 75 R – 1102 IN 1/5A (Argus relay)	Each	3	R.....	R.....
53.	Heat shrinks for Lugs – Red colour	M	100	R.....	R.....
54.	Heat shrinks for Lugs – Black colour	M	100	R.....	R.....
55.	HT Padlock	Each	150	R.....	R.....
56.	Drill bits for drilling steel railway rails and mild steel or galvanised structural steel.	Each	20	R.....	R.....
57.	12V, 400ah maintenance-free batteries	Each	2	R.....	R.....
58.	Ohte Material				
59.	95mm ² Lugs	Each	200	R.....	R.....
60.	95mm ² Ferrules	Each	200	R.....	R.....
61.	1KG bonding putty	Each	20	R.....	R.....
62.	Worm Bolts	Each	200	R.....	R.....

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63.	Permit Books and Certificates of authority				
64.	Supply and delivery of electrical permit books	Each	400	R.....	R.....
65.	Supply and delivery of C GREEN certificate of authority.	Each	300	R.....	R.....
66.	Supply and delivery of A BROWN certificate of authority.	Each	200	R.....	R.....
67.	Supply and delivery of A RED certificate of authority.	Each	200	R.....	R.....
68.	Supply and delivery of B Grey certificates of authority.	Each	100	R.....	R.....
69.	Supply and delivery of Electrical Control fault Logging Books.	Each	20	R.....	R.....
70.	Supply and delivery of substation logging books.	Each	25	R.....	R.....
71.	Heavy duty extension cord, 15m in length, Black. 220V – 250V, 3 X 2,5mm ² , flexible 3 core	Each	4	R.....	R.....
	Total Excluding VAT			R.....	
	VAT @ 15%			R.....	
	GRAND TOTAL			R.....	