

TENDER SPECIFICATION

No. BHE/PW/PUR/NST-CLE U#4/1581

FOR

HANDLING AT SITE STORES/STORAGE YARD, TRANSPORTATION TO SITE OF WORK, COMPLETE ERECTION, CHECKING OF CALIBRATION, TESTING, COMMISSIONING AND HANDING OVER OF CONTROL & INSTRUMENTATION & ELECTRICAL WORKS FOR BOILER AND ITS AUXILIARIES, TURBOGENERATOR AND ITS AUXILIARIES, STATION C&I FOR UNIT #4 OF 5x270 MW RATTANINDIA NASIK POWER LTD., NASHIK.

AT

SPECIAL ECONOMIC ZONE

RATTANINDIA NASIK POWER LTD

(Formerly known as Indiabulls RealTech Ltd)

SINNAR

DISTRICT- NASHIK,

MAHARASHTRA.

Chapter XI of Volume I A

‘Schedule of Items and Quantities and Factors for Deriving Item Rates from Total Lumpsum Price’

BHARAT HEAVY ELECTRICALS LIMITED

(A Govt. of India Undertaking)

POWER SECTOR - WESTERN REGION

345, KINGS WAY - NAGPUR 440 001

Job: HANDLING AT SITE STORES/STORAGE YARD, TRANSPORTATION TO SITE OF WORK, COMPLETE ERECTION, CHECKING OF CALIBRATION, TESTING, COMMISSIONING AND HANDING OVER OF CONTROL & INSTRUMENTATION & ELECTRICAL WORKS FOR BOILER AND ITS AUXILIARIES, TURBOGENERATOR AND ITS AUXILIARIES, STATION C&I FOR UNIT #4 OF 5x270 MW RATTANINDIA NASIK POWER LTD., NASHIK AT SPECIAL ECONOMIC ZONE RATTANINDIA NASIK POWER LTD (Formerly known as Indiabulls RealTech Ltd) SINNAR DISTRICT- NASHIK, MAHARASHTRA.

PART B: Schedule of items & Quantities and Factors to derive Item Rate based on quoted total lumpsum price

SL. NO	DESCRIPTION	UOM	QTY	Factor for deriving item rate from accepted Lumpsum price
BOQ OF C&I PACKAGE				
I1.0	Cable tray and Accessories			
I1.0.1	Perforated cable tray and accessories (with or without cover) 50mm	Mtrs	3071	0.000002589049
I1.0.2	Perforated cable tray and accessories (with or without cover) 100mm	Mtrs	2200	0.000002904786
I1.0.3	Perforated cable tray and accessories (with or without cover) 150mm	Mtrs	2200	0.000003716683
I1.0.4	Perforated cable tray and accessories (with or without cover) 300mm	Mtrs	2000	0.000006458639
I1.0.5	600 mm wide Perforated Type Cable Trays complete with Coupler Plates, Fasteners, Clamps & Fixing Hardwares and accessories.	Mtrs	3200	0.000004972868
I2.0	Cable laying including earthing wires			
I2.0.1	Screened Copper Cable 2P x 0.5 sqmm armoured / unarmoured	Mtrs	50000	0.000000460075
I2.0.2	Screened Copper Cable 4P x 0.5 sqmm armoured / unarmoured	Mtrs	100000	0.000000541265
I2.0.3	Screened Copper Cable 8P x 0.5 sqmm armoured / unarmoured	Mtrs	98000	0.000000625837
I2.0.4	Screened Copper Cable 10P / 12P x 0.5 sqmm armoured / unarmoured	Mtrs	11000	0.000000739728
I2.0.5	Screened Copper Cable 16P x 0.5 sqmm armoured / unarmoured	Mtrs	1000	0.000000691616
I2.0.6	Screened Copper Cable 20P/24P x 0.5 sqmm armoured / unarmoured	Mtrs	5000	0.000001714004
I2.0.7	Screened Copper Cable 4P x 1.5 sqmm armoured / unarmoured	Mtrs	4400	0.000000595391
I2.0.8	Screened Copper Cable 2P/4C x 1.3 sqmm armoured / unarmoured	Mtrs	9000	0.000000525027
I2.0.9	Screened Copper Cable 16C x 2.5 sqmm armoured / unarmoured	Mtrs	2000	0.000000706651
I2.0.10	Screened Copper Cable 19C x 2.5 sqmm armoured / unarmoured	Mtrs	4000	0.000000778068
I2.0.11	Screened Copper Cable 2C/3C x 6 sqmm armoured / unarmoured	Mtrs	7100	0.000000496159
I2.0.12	Copper Cable 2 or 3 triad, 0.5/1.5 sqmm armoured/unarmoured	Mtrs	2500	0.000000902108
I2.0.13	Copper Cable 4 triad, 0.5/1.5 sqmm armoured/unarmoured	Mtrs	1000	0.000000902108
I2.0.14	Compensating cable 1P/2P x 0.5 sq mm type Tx/Sx/Kx unarmoured/armoured	Mtrs	3000	0.000000496159
I2.0.15	Compensating cable 1P/2P x 1.3 sqmm type Tx/Sx/Kx unarmoured/armoured	Mtrs	6500	0.000000496159
I2.0.16	Compensating cable 4P x 1.3 sqmm type Tx/Sx/Kx unarmoured/armoured	Mtrs	7500	0.000000608923

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12.0.17	Compensating cable 6P x 1.3 sqmm type Tx/Sx/Kx unarmoured/armoured	Mtrs	8000	0.000000608923
12.0.18	Laying of Optical fibre cables on cable trays, conduits etc (termination supervision by other agency) with minor civil works	Mtrs	10500	0.000000929171
12.0.19	Network UTP Cables (special termination using UTP connectors involved)	Mtrs	8000	0.000000622454
12.0.20	Cable duct 60 x 60 x 1000	Mtrs	160	0.000004480467
12.0.21	Cable duct 180 x 100 x 1000	Mtrs	85	0.000005142013
12.0.22	Cable duct 250 x 100 x 1000	Mtrs	70	0.000007453663
12.0.23	Hoses-1/4", 1/2", 1", SS/Teflon, Braided/unbraided, upto 5M length	Mtrs	68	0.000007160478
12.0.24	Flexible pipe 1"	Mtrs	50	0.000001623794
12.0.25	Flexible pipe 2"	Mtrs	50	0.000002413138
12.0.26	1C x 35 sqmm Al. PVC (A/UA) cable	Mtrs	3100	0.000000721686
12.0.27	1C x 120 sqmm Al. cable	Mtrs	1100	0.000001097564
14.0	Junction box/Push Button station			
14.0.1	Junction boxes upto 48 way	No	285	0.000036237658
14.0.2	Junction boxes above 48 way	No	10	0.000045947342
14.0.3	CJCB Junction boxes upto 48 way	No	10	0.000046638958
14.0.4	CJCB Junction boxes above 48 way	No	45	0.000046638958
14.0.5	Fire protection switch in IP65 box	No	2	0.000048623594
14.0.6	FSSS Local Oil Gun Maintenance Switch Box	No	12	0.000046278115
15.0	Conduits/Impulse pipe/tubes			
15.0.1	Impulse pipe CS 1/2" SCH 80 (D21.3 x 3.73 mm)	Mtrs	2500	0.000005683277
15.0.2	Impulse pipe CS 1/2" SCH 160 (D21.3 x 4.78 mm)	Mtrs	1300	0.000007126649
15.0.3	Impulse pipe CS GR C 3/4" NB SCH 80	Mtrs	2400	0.000008344494
15.0.4	Impulse pipe ASTM CS GR C 1" NB SCH 80	Mtrs	1100	0.000009878077
15.0.5	Impulse pipe SS 1/2" (D21.3 x 2.6 mm) Sch 40	Mtrs	500	0.000010659904
15.0.6	Impulse pipe SS 1/2" SCH 160	Mtrs	1200	0.000010659904
15.0.7	Impulse pipe AS 1/2" SCH 160 (D21.3 x 4.78 mm)	Mtrs	200	0.000009434541
15.0.8	Impulse pipe ASTM A 335 P22 1/2 " Sch XXS	Mtrs	800	0.000009434541
15.0.9	GI Pipe (1/2", 1") Heavy grade	Mtrs	3000	0.000003382903
15.0.10	Seamless CS tube 13.5 x 2.6 mm	Mtrs	250	0.000006765806
15.0.11	Seamless CS tube 21.3 x 2.3 mm	Mtrs	400	0.000007216860
15.0.12	CS tube 33.7 x 3.38 mm	Mtrs	5	0.000009231567
15.0.13	CS tube D16 x 2.6	Mtrs	1900	0.000006585385
15.0.14	CS tube DN 80	Mtrs	20	0.000014042807
15.0.15	Seamless AS tube 13.5 x 2.6 mm	Mtrs	100	0.000009111286
15.0.16	Seamless AS tube 21.3 x 2.3 mm	Mtrs	410	0.000007588979
15.0.17	SS tube 6mm x 1.5 mm	Mtrs	500	0.000003935444

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15.0.18	Copper tube 3/8" (Sheathed / bare)	Mtrs	300	0.000004521814
15.0.19	Copper tube 6mm / 8mm / 1/4" (Sheathed /bare)	Mtrs	2400	0.000003085208
15.0.20	Copper tube 1/2" to 1" (Sheathed / bare)	Mtrs	180	0.000007713019
15.0.21	2" Impulse Pipe CS SCH-40	Mtrs	190	0.000007231895
15.0.22	2" Impulse Pipe CS SCH-160	Mtrs	25	0.000024807956
15.0.23	2" Impulse Pipe SS SCH-40	Mtrs	30	0.000020658262
16.0	Miscellaneous Structural steel including frames for Panels/Racks/Instruments, supports for cable tray/pipes/tubes, Canopies etc			
16.0.1	Aluminium strip (25 x 3 mm)	Mtrs	350	0.000000778068
16.0.2	Assembly of JB mounting frames (approx. 1100 x 765 x 500 mm)	No	1	0.000180541781
16.0.3	Assembly of JB mounting frames (approx. 1100 x 1515 x 500 mm)	No	4	0.000181323608
16.0.4	Assembly of JB mounting frames (approx. 1700 x 1600 x 718 mm)	No	2	0.000182751945
16.0.5	Assembly of JB mounting frames (approx. 1700 x 1600 x 850 mm)	No	4	0.000182751945
16.0.6	Assembly of JB mounting frames (approx. 2600 x 1700 x 620 mm)	No	1	0.000277668689
17.0	Panels/Cubicles/Racks/Enclosures/Monitors/Computer/Computer peripheral/PLCs/UPS/Batteries			
17.0.1	Assembly of local gauge board (approx. weight 650kg, 2200(L) x 300(B) x 1800(H) mm)	No	7	0.000292760948
17.0.2	Control Panel (approx. weight 400kg, 900(L) X 900(B) X 2500(H) mm) - one panel	No	9	0.000420598602
17.0.3	Control Panel (approx. weight 800kg, 900(L) X 900(B) X 2500(H) mm) - suite of two panels	No	28	0.000638669559
17.0.4	Control Panel (approx. weight 1200kg, 2700(L) X 1000(B) X 2500(H) mm) - suit of three panels	No	5	0.000774493119
17.0.5	Control Panel (approx. weight 1600kg, 3600(L) X 1000(B) X 2500(H) mm) - suit of four panels	No	1	0.000861166856
17.0.6	Control Panel (approx. weight 2000kg, 4500(L) X 1000(B) X 2500(H) mm) - suit of five panels	No	2	0.000979395562
17.0.7	Control Panel for HP dosing system (approx. weight 3000Kg, 1000(L) x 800(B) x 2000(H) mm)	No	1	0.000445596001
17.0.8	Gravimetric Coal feeder control panel(Approx weight 300 kg, approx. 1200 x 600 x 2315)	No	6	0.000485279710
17.0.9	Control panels for Centrifuges	No	2	0.000504345752
17.0.10	Transducer and AVT panel	No	1	0.000504526173
17.0.11	Unit Control panel	No	1	0.000645277496
17.0.12	Generator control panel (approx. 3080(L) x 1000(B) x 2355(H) mm)	Set	1	0.001458407128

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17.0.13	NETWORK PANELS (approx. weight 400kg, 900 x 900 x 2500 mm)	No	4	0.000416548139
17.0.14	Vibration monitoring system for Fans and Pulverisers	Set	1	0.001487372296
17.0.15	Vibration monitoring system for main turbine / generator	Set	1	0.001551117468
17.0.16	Vibration monitoring system for pumps	Set	1	0.001093564784
17.0.17	DC motor starter box for scanner fan (approx. weight 50kg, 375(L) x 900(B) x 1120(H) mm)	No	1	0.000371318724
17.0.18	Burner Tilt Shear Pin Failure Indication Box	No	4	0.000085485962
17.0.19	Air Heater Rotor Stoppage Alarm Box	Set	4	0.000173689523
17.0.20	Steam leak detection (STLD) system panel (approx weight 200kg, approx. 800(L) x 2315(B) x 800(H) mm)	Set	1	0.001815581558
17.0.21	Electronic Water Level Indicator (EWLI)	Set	4	0.000750267774
17.0.22	LP Dosing system	Set	1	0.000417215699
17.0.23	Condenser vacuum pump system	Set	1	0.000335178042
17.0.24	Generator Instrumentation cabinet including annunciator (approx. weight 600 Kg, 1000 x 800 x 2200 mm)	No	1	0.000693032812
17.0.25	Positioner cabinets (approx. 380 x 380 x 210 mm) for LPBP CV1, LPBP CV2, Spray water CV	No	3	0.000139005745
17.0.26	Local Instrument racks (LIR)	No	65	0.000288421811
17.0.27	Local Instrument enclosures (LIE)	No	45	0.000328164157
17.0.28	max Engineering / operator / storian / LAN / WAN / Shift in charge / stn in charge / gateway / interface PC / HART etc., PC/Server Station with ASCII Keyboard, Mouse & 21" Colour Monitor, individual UPS	Set	16	0.000171634973
17.0.29	Printers (80/132 col Dot Matrix, A3 Inkjet, A3 Laserjet, etc)	Set	6	0.000086250498
17.0.30	Computer furniture for all Servers, PCs, Printers	Set	1	0.001437711279
17.0.31	LVS (Large Video Screen) made up of 5X1 matrix. Each LVS of DLP/LCD type, Rear projection type, 67 inches diagonal size, with 1024x768 resolution non interlaced	Set	4	0.000104208452
17.0.32	2 X 120 KVA, 220/240 V UPS System and ACDB	Set	1	0.001686865853
17.0.33	Condenser online tube cleaning system	Set	1	0.002985502225
18.0	Instruments/Devices including sensors/Cells/Probes etc			
18.0.1	Latching relay 24V, 5A	No	2	0.000012516742
18.0.2	Furnace Temperature probe including local panel/box and all accessories	No	2	0.000143119355
18.0.3	Moisture Sensor probe and dew point monitor	Set	1	0.000109260254
18.0.4	Air filter regulators / Lubricators (1/2", 1", 0-6KG, 0-10 KG)	No	100	0.000012685887
18.0.5	Speed Regulators / Air lock valves in oil gun corner rack	No	12	0.000019135955

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18.0.6	Solenoid valves (3 way, AC/DC, 1/4", 1/2", 1", NPT/BSP, single/dual coil)	No	55	0.000012866308
18.0.7	CWP Butterfly valves	No	3	0.000077536140
18.0.8	Pneumatic Pressure controller with accessories	No	3	0.000079595952
18.0.9	Pneumatic Temperature controller with accessories	No	4	0.000096841240
18.0.10	Heavy Duty Limit Switch	No	36	0.000010028428
18.0.11	Speed switch / Speed detector	No	6	0.000022492547
18.0.12	Pressure Switch / DP Switch / DP indicating switch	No	135	0.000028452471
18.0.13	Temperature Switch / Thermostat	No	11	0.000028515618
18.0.14	Float type Level Switch	No	25	0.000066026752
18.0.15	Electronic Level Switch (with amplifier, etc), Capacitance or conductivity type	No	25	0.000079782387
18.0.16	Vacuum switch	No	3	0.000030115355
18.0.17	Flow switch (Mechanical / Electronic)	No	1	0.000046443501
18.0.18	Pressure / DP / Flow (DP type) / Level Transmitter	No	300	0.000028019459
18.0.19	Level Transmitter (displacer type)	No	3	0.000075837171
18.0.20	Flow Transmitter (Pulse / mass flow / target type) including flanges	No	2	0.000058163381
18.0.21	Speed transmitter	No	5	0.000022349713
18.0.22	Position Transmitters	No	3	0.000039277761
18.0.23	Electronic Level Transmitter (with amplifier, etc), Capacitance or conductivity type / Guided Wave Radar(GWR) transmitter	No	16	0.000094613035
18.0.24	Pressure Gauge / DP gauge/DP Indicator	No	409	0.000023229268
18.0.25	Temperature Gauge (all types)	No	278	0.000024907188
18.0.26	Level Indicator / Level Gauge	No	22	0.000069850184
18.0.27	Direct Water Level Gauge (DWLG)	Set	2	0.000170949372
18.0.28	Flow indicator / Flow Gauge / Flow meter/Acoustic flow meter (coal)	No	6	0.000072529443
18.0.29	Thermocouple / RTDs with thermowell (all types) along with converters wherever applicable	No	550	0.000017699349
18.0.30	MTM Thermocouple upto 17 M length	No	41	0.000068497023
18.0.31	MTM Thermocouple over17M upto 22 M	No	81	0.000077776702
18.0.32	Purge meter for mill	No	12	0.000044924954
18.0.33	SADC Cylinders	No	56	0.000135936324
18.0.34	HEA Exciter system	Set	12	0.000124017229
18.0.35	Flame Scanner Head Assembly	No	20	0.000112684503
18.0.36	Hydrogen Purity analyser	Set	1	0.000335832070
18.0.37	O2 (OXYGEN) analyser	Set	6	0.000371465317
18.0.38	CO Analyzer (in situ type)	Set	1	0.000053156685
18.0.39	Flue Gas Analyzer (SOX/NOX/CO)	Set	1	0.002227964968

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18.0.40	Dust emission monitor (Installation at around 88 M in chimney)	Set	1	0.000645277496
18.0.41	SWAS Sample handling system with racks & Sample conditioning panel with chiller	Set	1	0.002368945576
18.0.42	SWAS Analyzer Panel including various analyzers	Set	1	0.003405140082
18.0.43	Console inserts (to be mounted on Backup desk)	Set	2	0.000158770920
18.0.44	Vertical indicators (moving coil / bar graph)	No	2	0.000056720009
18.0.45	Digital / bargraph indicators	No	7	0.000056720009
18.0.46	Recorder 24 / 30 Channel	No	1	0.000117860345
18.0.47	Recorder 3 channel	No	1	0.000117860345
18.0.48	Rotor Earth fault Detector	No	1	0.000212953752
18.0.49	I/P converters	No	98	0.000022334678
18.0.50	Reverse Rotation Indication System (Rack, Sensors, etc)	No	3	0.000079412523
19.0	Commissioning and Testing activities for Equipments erected by other agencies, like control valves, on/off valves, electrical/pneumatic valves, actuators, solenoid valves, valves, limit switches, ERV controllers, power cylinders, Pressure & Temperature Guages/Transmitters,etc			
19.0.1	Rack mounted instruments commissioning	Set	3	0.000382798042
19.0.2	Coal Feeder local panel/ instruments commissioning	No	6	0.000087425493
19.0.3	Pneumatic regulating drives: (Valve, damper) incl Burner tilt	No	109	0.000032448807
19.0.4	Commissioning of Hydraulic actuators	No	14	0.000061235057
19.0.5	Corner Nozzle valve/ Trip valves commissioning	No	44	0.000026711403
19.0.6	Open/Close type pneumatic gates / dampers / valves	No	49	0.000044239352
19.0.7	ERV Controller (approx. weight 25kg, 400 x 350 x 270 mm)	No	2	0.000053332596
19.0.8	Limit Switches (checking and adjusting only).	No	35	0.000010392278
19.0.9	Only healthiness checking of embedded RTD / T/C	No	257	0.000011020747
19.0.10	Fan Lube oil skid	Set	10	0.000377279399
19.0.11	Pulveriser Lube oil skid	Set	6	0.000451189067
19.0.12	HEA Advance / Retract System	No	12	0.000137553352
110.0	Power Cylinders			
110.0.1	Mill Discharge Valve power cylinders (set of four)	Set	6	0.000240249270
111.0	Miscellaneous items (items not covered under above heads)			
111.0.1	Master and Slave Clock System	Set	1	0.001399101077
111.0.2	HART Management System including Cabinet	Set	1	0.001540055375

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BOQ OF ELECTRICAL PACKAGE				
SL. NO.	DESCRIPTION	UOM	QTY	
SECTION-E1 : CABLE TRAYS AND ACCESSORIES				
E1.1	Ladder type 600(W) x 120 (H) mm	Mtrs.	1740	0.000003931204
E1.2	Ladder type 450(W) x 120 (H) mm	Mtrs.	1625	0.000003157376
E1.3	Ladder type 300(W) x 120 (H) mm	Mtrs.	1000	0.000002841639
E1.4	Ladder type 150(W) x 120 (H) mm	Mtrs.	3000	0.000002270304
SECTION-E1B : CABLE TRAY SUPPORT AND ACCESSORIES				
E1B.1	Single Support Channel(SC1)	No	4000	0.000003798098
E1B.2	Cantilever Arms for 600mm CableTrays	No	2800	0.000004664572
E1B.3	Cantilever Arms for 300mm CableTrays	No	750	0.000002895991
E1B.4	Cantilever Arms for 150mm CableTrays	No	200	0.000003247587
SECTION-E2A : LT POWER CABLES (XLPE Armoured/ Un-				
E2A.1	3C X 300 sq.mm Aluminium Armoured	Mtrs.	1000	0.000001847516
E2A.2	3C X 35 sq.mm Aluminium Armoured	Mtrs.	1525	0.000000826932
E2A.3	3C X 10 sq.mm Aluminium Armoured	Mtrs.	6000	0.000000518712
E2A.4	2CX120 sq.mm Aluminium Armoured	Mtrs.	9000	0.000001028403
E2A.5	3C X 50 sq.mm Copper Armoured	Mtrs.	400	0.000001113742
E2A.6	1CX 70 sq.mm Copper Armoured	Mtrs.	150	0.000000608923
SECTION-E2B : LT CONTROL CABLES (Generally PVC Sheath,				
E2B.1	12C X 2.5 sq.mm Copper, 1.1KV Armoured PVC Insulated	Mtrs.	3000	0.000000646510
E2B.2	Screened Copper Cable 10C x 2.5 sqmm armoured / unarmoured	Mtrs.	22100	0.000000646510
E2B.3	Screened Copper Cable 7C x 2.5 sqmm armoured / unarmoured	Mtrs.	13300	0.000000563817
E2B.4	Screened Copper Cable 5C x 2.5 sqmm armoured / unarmoured	Mtrs.	11500	0.000000523222
E2B.5	Screened Copper Cable 2P/4C x 1.5 sqmm armoured / unarmoured	Mtrs.	16100	0.000000451054
E2B.6	3C X 2.5 sq.mm Copper, 1.1KV Armoured PVC Insulated	Mtrs.	76400	0.000000523222
E2B.7	2CX2.5 sq.mm Copper Armoured/Un-armoured	Mtrs.	16400	0.000000487138
SECTION-E3 : JUCTION BOXES AND PUSH BUTTON				
E3.1	Junction Boxes 485X150X360 mm approx.	Nos.	32	0.000040474557
E3.2	Start Stop Push Button Station 180X100X250 mm approx.	Nos.	65	0.000025341703
E3.3	Junction Boxes for Hopper, Support & Shaft Heaters 500X150X300 mm approx.	Nos.	48	0.000040474557
SECTION-E4 : STRUCTURAL STEEL				
E.4.1	Structural Steel fabrication & installation (MS angle, Channel, Plate etc)	MT	29	0.000613974366
SECTION-E5 A : SWITCHGEARS / MCC /PCC				

Job: HANDLING AT SITE STORES/STORAGE YARD, TRANSPORTATION TO SITE OF WORK, COMPLETE ERECTION, CHECKING OF CALIBRATION, TESTING, COMMISSIONING AND HANDING OVER OF CONTROL & INSTRUMENTATION & ELECTRICAL WORKS FOR BOILER AND ITS AUXILIARIES, TURBOGENERATOR AND ITS AUXILIARIES, STATION C&I FOR UNIT #4 OF 5x270 MW RATTANINDIA NASIK POWER LTD., NASHIK AT SPECIAL ECONOMIC ZONE RATTANINDIA NASIK POWER LTD (Formerly known as Indiabulls RealTech Ltd) SINNAR DISTRICT- NASHIK, MAHARASHTRA.

PART B: Schedule of items & Quantities and Factors to derive Item Rate based on quoted total lumpsum price

SL. NO	DESCRIPTION	UOM	QTY	Factor for deriving item rate from accepted Lumpsum price
E5A.1	Soot Blower Motor control Center, double front, Approx overall dimension 12000(L)x2600(H)x1000(W) mm, Approx weight 11.4 MT, shall be supplied in eight to ten loose shipping sections	set	1	0.006265572619
E5A.2	ESP LT main Switch Board, Double front, Draw out Type Approx overall dimension 16000(L) x2400(H) x1700(W) mm, approx WT 13 MT, shall be supplied in eight to ten loose shipping sections.	set	1	0.004590749902
E5A.3	Auxiliary Control Panel, Approx overall dimension 7000(L)x1700(W)x2400(H) mm, Approx weight of each panel 6.5 and supplied in loose shipping sections	set	2	0.005301159559
SECTION-E5 B : STARTER PANEL/BOXES/POWER DISTRIBUTION				
E5B.1	Electronic Control Panel, Overall Dimensions Approx. 700(L)X650(W)X2000(H) mm, Approx. Weight of each panel 0.3 MT. BAPCON Controller approx dimension 280x210x210 mm, rotary switches, etc along with cables and connectors, shall be supplied loose for mounting in the panel at site	Nos	28	0.000423238770
E5B.2	RAPPER CONTROL PANEL Overall dimension approx.1000X650X2000 mm, approx.Weight of each panel 0.30 MT. 32 Nos. RAPCON Electronic modules for each panel (along with cables connectors) size 280 x 210 x 210 mm shall be supplied loose for mounting in the panel at site	Nos	2	0.000488686669
E5B.3	IOS PANEL overall dimension approx.1000x500x2050 mm,approx. Weight of panel 0.2 MT along with loose accessories such as IOS PC, Computer Furniture, Data Logger PC, Printer -4 Nos. PC termination box, peripheral cables etc.	set	1	0.000729699723
E5B.4	STATCON PANEL overall dimension approx.1000 x650 x2000 mm, approx. Weight of panel 0.3 MT STATCON CONTROLLER for each panel (along with cables connectors) size approx. 280 x 210 x 210 mm shall be supplied loose for mounting in the panel at site.	set	0	
E5B.5	DC motor starter panels, etc (DC JOP, DC EOP, Seal oil panel), including resistance boxes. Approx weight 0.5 MT and approx. dimension 1000x800x2200 mm each.	Nos	3	0.000484837677
SECTION-E5C: PANELS				
E5C.1	Generator, Generator Transformer, UAT Transformer- Control, protection & Metering panels. Approx dimension of each panel 1000x1000x2295(H), approx weight 600kg each panel	set	1	0.002630500370
SECTION-E5D : DIGITAL AUTOMATIC VOLTAGE REGULATOR				
E.5D.1	Transportation from store / storage yard to erection site, Erection, Assembly, Testing & Commissioning of Digital Excitation Equipments / System, System consist of DAVR panels & accessories as per tender specification.	Set	1	0.004032931728

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PART B: Schedule of items & Quantities and Factors to derive Item Rate based on quoted total lumpsum price

SL. NO	DESCRIPTION	UOM	QTY	Factor for deriving item rate from accepted Lumpsum price
SECTION-E5E : MISCELLANEOUS EQUIPMENT				
E5E.1	Ash Level Indicator comprising of level probe with extension lagging pipe, Electronic Unit, Interconnecting Cabling, Conduit, etc.	Set	56	0.000045736850
E5E.2	Opacity Monitor consisting of Transmitter & Receiver, Electronic Unit, Air Blower unit, Weather Proof housings, Junction boxes, flexible hoses, mounting flanges with pipe for Transmitter, Receiver & Air blower, interconnected cables etc. for mounting on ESP outlet duct.	Set	2	0.001001158906
SECTION-E 6 : EQUIPMENT EARTHING MATERIALS				
E6.1	75 x 10 mm GI earthing flat	Mtrs.	500	0.000003668571
E6.2	65 x 10 mm GI earthing flat	Mtrs.	1260	0.000003593395
E6.3	50 x 6 mm GI earthing flat	Mtrs.	2100	0.000002444711
E6.3	30 x 5 mm GI earthing flat	Mtrs.	2700	0.000001991312
E6.4	25 x 6 mm GI earthing flat	Mtrs.	1500	0.000001947199
E6.5	GI earthing wire Diameter 3.15mm or 8 SWG	Mtrs.	5000	0.000000372119
SECTION -E7 : IPBD BUS DUCTS				
E7.1	Isolated Phase Bus Duct (16.5 KV) for interconnection of Generator, Generator Transformers, UAT-1 and UAT-2 along with all accessories & auxiliaries as described in the Tender Specification.	set	1	0.073209211227
SECTION- E8 :OIL FILLED TRANSFORMERS (GT, UAT)				
			NIL	
SECTION-E 9 : ONLY TESTING & COMMISSIONING				
E9.1	Heating elements for Hopper Heater of ESP alongwith conduiting & cabling of heater integral cable	Nos.	672	0.000020680814
E9.2	Heating elements for Support Insulator Heater & Shaft Insulator Heaters of ESP alongwith conduiting & cabling of heater integral cable	Nos.	140	0.000014298404
E9.3	High Voltage Rectifier Transformers (95 KV peak, 1000 mA) including oil filtration.	Nos.	20	0.000312986198
E9.4	Testing & Commissioning of Collecting, Emitting, GD Screen Motor	Nos.	60	0.000029498915
E9.5	Testing and commissioning of 6.6 &11 KV HT motors including dryout.	Nos.	17	0.000238273654
E9.6	Testing and commissioning of 415 V LT motors including dry out.	Nos.	200	0.000079168954
E9.7	Generator System Testing	Set	1	0.008427928060
E9.8	Testing & Commissioning of Soot Blower Control Panel, including mounting of mimic	Nos.	1	0.000479740770
E9.9	Testing & Commissioning of Wall, Long Retractable, Air Heater Soot Blower	Nos.	76	0.000040098678
E9.10	Thermostats including Calibration	Nos.	32	0.000015471144
E9.11	Electrically (LT) Operated Valves, Dampers and Gates with Actuators, Limit Switches, etc. (Regulating & ON/OFF Type).	Nos.	205	0.000049877524

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PART B: Schedule of items & Quantities and Factors to derive Item Rate based on quoted total lumpsum price

SL. NO	DESCRIPTION	UOM	QTY	Factor for deriving item rate from accepted Lumpsum price
E9.12	Electrical Operated Hoist at various area like ESP, Mill, IDF, PAF, FDF, Vacum Pumps, BFP, CW & ACW area	Nos.	20	0.000133511910