

TENDER SPECIFICATION

NO: BHE/PW/PUR/NST-ELE U # 3 & 5/1579

FOR HANDLING AT SITE STORES/STORAGE YARD, TRANSPORTATION TO SITE OF WORK, COMPLETE ERECTION, CHECKING OF CALIBRATION, TESTING, COMMISSIONING AND HANDING OVER OF LT POWER TRANSFORMERS, DAVR, ELECTROSTATIC PRECIPITATOR, SOOT BLOWER SYSTEM, DRIVES FOR ID FANS, CABLING PACKAGE, AND ASSOCIATED EQUIPMENTS UNIT #3 & 5 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 Government of India Undertaking)

Power Sector - Western Region

345-Kingsway, Nagpur-440001

TECHNICAL CONDITIONS OF CONTRACT (TCC)
Chapter-XI: Schedule of items Quantities and Factor for
deriving Item Rate from the accepted Lumpsum Price

JOB: FOR HANDLING AT SITE STORES/STORAGE YARD, TRANSPORTATION TO SITE OF WORK, COMPLETE ERECTION, CHECKING OF CALIBRATION, TESTING, COMMISSIONING AND HANDING OVER OF LT POWER TRANSFORMERS, DAVR, ELECTROSTATIC PRECIPITATOR, SOOT BLOWER SYSTEM, DRIVES FOR ID FANS, CABLING PACKAGE, AND ASSOCIATED EQUIPMENTS UNIT #3 & 5 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
SECTION-E1 : CABLE TRAYS AND ACCESSORIES				
E1.1	Ladder type 600(W) x 120 (H) mm	Mtrs.	1080	0.000005941936
E1.2	Ladder type 450(W) x 120 (H) mm	Mtrs.	3250	0.000004772311
E1.3	Ladder type 300(W) x 120 (H) mm	Mtrs.	2000	0.000004295080
E1.4	Ladder type 150(W) x 120 (H) mm	Mtrs.	6000	0.000003431519
SECTION-E1B : CABLE TRAY SUPPORT AND ACCESSORIES				
E1B.1	Single Support Channel(SC1)	No	2000	0.000005740749
E1B.2	Cantilever Arms for 600mm CableTrays	No	1600	0.000007050407
E1B.3	Cantilever Arms for 300mm CableTrays	No	500	0.000004377232
E1B.4	Cantilever Arms for 150mm CableTrays	No	200	0.000004908663
SECTION-E2A : LT POWER CABLES (XLPE Armoured/ Un-armoured)				
E2A.1	3C X 300 sq.mm Aluminium Armoured	Mtrs.	2000	0.000002792484
E2A.2	3C X 35 sq.mm Aluminium Armoured	Mtrs.	3050	0.000001249891
E2A.3	3C X 10 sq.mm Aluminium Armoured	Mtrs.	12000	0.000000784022
E2A.4	2CX120 sq.mm Aluminium Armoured	Mtrs.	18000	0.000001554410
E2A.5	3C X 50 sq.mm Copper Armoured	Mtrs.	800	0.000001683399
E2A.6	1CX 70 sq.mm Copper Armoured	Mtrs.	300	0.000000920374
SECTION-E2B : LT CONTROL CABLES (Generally PVC Sheath, XLPE Insulated Unarmoured/Armoured, Screened/Unscreened)				
E2B.1	12C X 2.5 sq.mm Copper, 1.1KV Armoured PVC Insulated	Mtrs.	6000	0.000000977187
E2B.2	10C X 2.5 sq.mm Copper	Mtrs.	42200	0.000000977187
E2B.3	7C X 2.5 sq.mm Copper	Mtrs.	18600	0.000000852198
E2B.4	5C X 2.5 sq.mm Copper, 1.1KV Armoured PVC Insulated	Mtrs.	10000	0.000000790840
E2B.5	4C X 1.5 sq.mm Copper (Screened)	Mtrs.	19000	0.000000681759
E2B.6	3C X 2.5 sq.mm Copper, 1.1KV Armoured PVC Insulated	Mtrs.	131800	0.000000790840
E2B.7	2CX2.5 sq.mm Copper Armoured/Un-armoured	Mtrs.	13000	0.000000736299
SECTION-E3 : JUCTION BOXES AND PUSH BUTTON				
E3.1	Junction Boxes 485X150X360 mm approx.	Nos.	64	0.000061176479
E3.2	Start Stop Push Button Station 180X100X250 mm approx.	Nos.	124	0.000038303475
E3.3	Junction Boxes for Hopper, Support & Shaft Heaters 500X150X300 mm approx.	Nos.	96	0.000061176479
SECTION-E4 : STRUCTURAL STEEL				
E.4.1	Structural Steel fabrication & installation (MS angle, Channel, Plate etc)	MT	24	0.000928009918
SECTION-E5 A : SWITCHGEARS / MCC /PCC				
E5A.1	Soot Blower Motor control Center, double front, Approx overall dimension 2000(L) x2600(H) x1000(W) mm, Approx weight 11.4 MT, shall be supplied in eight to ten loose shipping sections	set	2	0.009470287130
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	2	0.006938826242
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	4	0.008012596166
SECTION-E5 B : STARTER PANEL/BOXES/POWER DISTRIBUTION BOX/MARSHALLING BOXES				
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	56	0.000639716897

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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	4	0.000738640082
E5B.3	IOS PANEL overall dimension approx.1000 x500 x2050 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	2	0.001102926471
E5B.4	STATCON PANEL overall dimension approx.1000x650x2000 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	6	0.000732822408
SECTION-E5C: PANELS				
E5C.1	Generator, Generator Transformer, UAT Transformer- Control, protection & Metering panels. Approx dimension of each panel 1000 x1000 x2295(H), approx weight 600kg each panel	set	2	0.003975948459
SECTION-E5D : DIGITAL AUTOMATIC VOLTAGE REGULATOR FOR BRUSHLESS EXCITATION SYSTEM				
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	2	0.006095695279
SECTION-E5E : MISCELLANEOUS EQUIPMENT				
E5E.1	Ash Level Indicator comprising of level probe with extension lagging pipe, Electronic Unit, Interconnecting Cabling, Conduit, etc.	Set	112	0.000069130330
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	4	0.001513231571
SECTION-E 6 : EQUIPMENT EARTHING MATERIALS				
E6.1	75 x 10 mm GI earthing flat	Mtrs.	1000	0.000005544971
E6.2	65 x 10 mm GI earthing flat	Mtrs.	2520	0.000005431344
E6.3	50 x 6 mm GI earthing flat	Mtrs.	4200	0.000003695132
E6.3	30 x 5 mm GI earthing flat	Mtrs.	5400	0.000003009828
E6.4	25 x 6 mm GI earthing flat	Mtrs.	3000	0.000002943152
E6.5	GI earthing wire Diameter 3.15mm or 8 SWG	Mtrs.	9900	0.000000562451
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	2	0.110654251892
SECTION- E8 :OIL FILLED TRANSFORMERS (GT, UAT)				
SECTION-E 9 : ONLY TESTING & COMMISSIONING				
E9.1	Heating elements for Hopper Heater of ESP [Refer Clause 2.9.10 (3 to 5)]	Nos.	1344	0.000031258636
E9.2	Heating elements for Support Insulator Heater, Shaft Insulator Heaters of ESP [Refer Clause 2.9.10 (3 to 5)]	Nos.	280	0.000021611750

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E9.3	High Voltage Rectifier Transformers (95 KV peak, 1000 mA) including oil filtration.	Nos.	40	0.000473072350
E9.4	Testing & Commissioning of Collecting, Emitting, GD Screen Motor	Nos.	120	0.000044587018
E9.5	Testing and commissioning of 6.6 & 11 KV HT motors including dryout.	Nos.	34	0.000360145841
E9.6	Testing and commissioning of 415 V LT motors including dry out.	Nos.	400	0.000119662284
E9.7	Generator System Testing	Set	2	0.012738643934
E9.8	Testing & Commissioning of Soot Blower Control Panel, including mounting of mimic	Nos.	2	0.000725118534
E9.9	Testing & Commissioning of Wall, Long Retractable, Air Heater Soot Blower	Nos.	152	0.000060608347
E9.10	Testing & Commissioning of Furnace Temperature Probe (including Solenoids, Thermocouples, JB etc)	Nos.	2	0.000080788404
E9.11	Thermostats including Calibration	Nos.	64	0.000023384323
E9.12	Electrically (LT) Operated Valves, Dampers and Gates with Actuators, Limit Switches, etc. (Regulating & ON/OFF Type).	Nos.	410	0.000075388875
E9.13	Electrical Operated Hoist at various area like ESP, Mill, IDF, PAF, FDF, Vacuum Pumps, BFP, CW & ACW area	Nos.	40	0.000201800570