

TENDER SPECIFICATION

No. BHE/PW/PUR/PDVT-CNI/1079

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 WORKS FOR CFBC BOILER AND ITS AUXILIARIES, TURBOGENERATOR AND ITS AUXILIARIES, STATION C&I FOR 2X250 MW LIGNITE BASED BHAVNAGAR THERMAL POWER PLANT.

**AT
BHAVNAGAR ENERGY COMPANY LIMITED
DISTRICT- BHAVNAGAR, GUJRAT**

VOLUME :II – PRICE BID

BOOK NO.

**BHARAT HEAVY ELECTRICALS LIMITED
(A GOVERNMENT OF INDIA UNDERTAKING)
POWER SECTOR - WESTERN REGION
SHREEMOHINI COMPLEX**

345, KINGSWAY - NAGPUR 440 001

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AT
BHAVNAGAR ENERGY COMPANY LIMITED
DISTRICT- BHAVNAGAR, GUJRAT

EARNEST MONEY DEPOSIT:
LAST DATE FOR:
TENDER SUBMISSION:

Please see Notice Inviting Tender.
Please see Notice Inviting Tender.

THESE TENDER SPECIFICATION DOCUMENTS CONTAINING **VOLUME-I** , **VOLUME- II** AND VOLUME-IBCD ARE ISSUED TO:
M/s.

PLEASE NOTE:
THESE TENDER SPECS DOCUMENTS ARE NOT TRANSFERABLE.

For Bharat Heavy Electricals Limited

AGM (Purchase)
Place: Nagpur
Date:

BHEL : PS WR
TS : BHE/PW/PUR/PDVT-CNI/1079 (RATE SCHEDULE)
VOLUME-II- PRICE BID-1079

BHEL:PSWR:NAGPUR

RATE SCHEDULE, SECTION - A

NAME OF WORK: HANDLING AT SITE STORES/STORAGE YARD, TRANSPORTATION TO SITE OF WORK, COMPLETE ERECTION, CHECKING OF CALIBRATION, TESTING, COMMISSIONING AND HANDING OVER OF CONTROL & INSTRUMENTATION WORKS FOR CFBC BOILER AND ITS AUXILIARIES, TURBOGENERATOR AND ITS AUXILIARIES, STATION C&I FOR 2X250 MW LIGNITE BASED BHAVNAGAR THERMAL POWER PLANT

SL. NO.	DESCRIPTION	UOM	QTY	RATE IN RS. (IN FIGURES)	RATE IN WORDS	AMOUNT	APPLICABLE TERM OF PAYMENT
I1.0	Cable tray and Accessories						I1.0
I1.0.1	Perforated cable tray and accessories (with or without cover) 50mm	Meter	12120				
I1.0.2	Perforated cable tray and accessories (with or without cover) 100mm	Meter	17000				
I1.0.3	Perforated cable tray and accessories (with or without cover) 150mm	Meter	2320				
I3.0	Cable laying including earthing wires						I3.0
I3.0.1	Screened Copper Cable 2P x 0.5 sqmm armoured / unarmoured	Meter	150760				
I3.0.2	Screened Copper Cable 4P x 0.5 sqmm armoured / unarmoured	Meter	398160				
I3.0.3	Screened Copper Cable 8P x 0.5 sqmm armoured / unarmoured	Meter	113880				
I3.0.4	Screened Copper Cable 10P / 12P x 0.5 sqmm armoured / unarmoured	Meter	50800				
I3.0.5	Screened Copper Cable 20P x 0.5 sqmm armoured / unarmoured	Meter	18000				
I3.0.6	Screened Copper Cable 2P x 1 sqmm armoured / unarmoured	Meter	4000				
I3.0.7	Screened Copper Cable 2P/4C x 1.3 sqmm armoured / unarmoured	Meter	1400				
I3.0.8	Screened Copper Cable 5C/7C x 1.5 sqmm armoured / unarmoured	Meter	28000				

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SL. NO.	DESCRIPTION	UOM	QTY	RATE IN RS. (IN FIGURES)	RATE IN WORDS	AMOUNT	APPLICABLE TERM OF PAYMENT
13.0.9	Screened Copper Cable 10C/12C x 1.5 sqmm armoured / unarmoured	Meter	4000				
13.0.10	Screened Copper Cable 3C x 2.5 sqmm armoured / unarmoured	Meter	50000				
13.0.11	Copper Cable 4 triad, 0.5/1.5 sqmm armoured/unarmoured	Meter	3240				
13.0.12	Compensating cable 1P/2P x 1.5sqmm type Tx/Sx/Kx unarmoured/armoured	Meter	53400				
13.0.13	Compensating cable 4P x 1.5sqmm type Tx/Sx/Kx unarmoured/armoured	Meter	13000				
13.0.14	Compensating cable 6P x 1.5sqmm type Tx/Sx/Kx unarmoured/armoured	Meter	19000				
13.0.15	Compensating cable 1P/2P x 1.0 sqmm type Tx/Sx/Kx unarmoured/armoured	Meter	4110				
13.0.16	Laying of Optical fibre cables on cable trays, conduits etc (termination supervision by other agency) with minor civil works	Meter	1000				
13.0.17	Network UTP Cables (special termination using UTP connectors involved)	Meter	10675				
13.0.18	Cable duct 60 x 60 x 1000	Meter	360				
13.0.19	Cable duct 180 x 100 x 1000	Meter	120				
13.0.20	Cable duct 250 x 100 x 1000	Meter	100				
13.0.21	Hoses-1/4", 1/2" , 1", SS/Teflon, Braided/unbraided, upto 5M length	Meter	10				
13.0.22	Flexible pipe 1"	Meter	10				
13.0.23	Flexible pipe 2"	Meter	5				
14.0	Junction box/Push Button station						14.0

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14.0.1	Junction boxes upto 48 way	No	521				
14.0.2	Junction boxes above 48 way	No	172				
14.0.3	Fire protection switch in IP65 box	No	2				
15.0	Conduits/Impulse pipe/tubes						15.0
15.0.1	Impulse pipe CS ½" SCH 40 (D21.3 x 2.76 mm)	Meter	600				
15.0.2	Impulse pipe CS GR B/C 1/2" NB SCH 80	Meter	11200				
15.0.3	Impulse pipe CS GR B/C 1/2" NB SCH 160	Meter	2400				
15.0.4	Impulse pipe ASTM CS GR C 1" NB SCH 40	Meter	1800				
15.0.5	Impulse pipe for pre instruments CS (D16 x 2.6mm)	Meter	2280				
15.0.6	Impulse pipe SS ½" (D21.3 x 2.6 mm) Sch 40	Meter	3050				
15.0.7	Impulse pipe SS ½" Sch 80	Meter	600				
15.0.8	Impulse pipe SS 1/2" SCH 160	Meter	1200				
15.0.9	Impulse pipe AS ½" SCH 40 (D21.3 x 2.76 mm)	Meter	400				
15.0.10	Impulse pipe AS P22 1/2" NB SCH XXS	Meter	1300				
15.0.11	GI Pipe (1/2", 1") Heavy grade	Meter	4200				
15.0.12	GI Pipe (1.5 ", 2") Heavy grade	Meter	10				
15.0.13	Seamless CS tube 13.5 x 2.6/2.9 mm	Meter	440				
15.0.14	Seamless CS tube 21.3 x 2.3 mm	Meter	1920				
15.0.15	CS tube DN 80 / 88.9 x 4 mm	Meter	40				
15.0.16	AS tube-13.5x2.6mm	Meter	8				
15.0.17	Seamless AS tube 21.3 x 2.3 mm	Meter	1660				
15.0.18	Copper tube 6mm/8mm / 1/4" (Sheathed / bare)	Meter	800				
15.0.19	Copper tube 1/2" to 1" (Sheathed / bare)	Meter	100				
16.0	Miscellaneous Structural steel including frames for Panels/Racks/Instruments, supports for cable tray/pipes/tubes, Canopies etc						16.0
16.0.1	Structural steel for fabrication	Ton	44				
16.0.2	GI Strip (50X6mm)	No	2400				
16.0.3	Assembly of JB mounting frames (approx. 1100 x 500 x 800 mm)	No	2				
16.0.4	Assembly of JB mounting frames (approx. 1500 x 800 x 1800 mm)	No	4				

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SL. NO.	DESCRIPTION	UOM	QTY	RATE IN RS. (IN FIGURES)	RATE IN WORDS	AMOUNT	APPLICABLE TERM OF PAYMENT
16.0.5	Assembly of JB mounting frames (approx. 2600 x 500 x 1800 mm)	No	2				
17.0	Panels/Cubicles/Racks/Enclosures/Monitors/Computer/Computer peripheral/PLCs/UPS/Batteries						17.0
17.0.1	Assembly of local gauge board (approx. weight 650kg, 2200(L) x 300(B) x 1800(H) mm)	No	14				
17.0.2	Control Panel (approx. weight 400kg, 750(L) X 750(B) X 2415(H) mm) - one panel	No	14				
17.0.3	Control Panel (approx. weight 800kg, 1500(L) X 800(B) X 2500(H) mm) - suit of two panels	No	16				
17.0.4	Control Panel (approx. weight 1200kg, 2215(L) X 800(B) X 2500(H) mm) - suit of three panels	No	38				
17.0.5	Control Panel (approx. weight 1600kg, 3000(L) X 800(B) X 2500(H) mm) - suit of four panels	No	2				
17.0.6	Control panels for Centrifuges	No	2				
17.0.7	Unit Control panel	Set	2				
17.0.8	Electrical control panel	Set	2				
17.0.9	Transducer Panel(Approx. Dimension 750x750x2415mm,Wt-400kgs)	No	2				
17.0.10	HP dosing system (approx. weight 3000Kg, 1000(L) x 800(B) x 2000(H) mm)	No	2				
17.0.11	LP Dosing sysetm	Set	2				
17.0.12	NETWORK PANELS (approx. weight 400kg, 900 x 900 x 2500 mm)	No	8				
17.0.13	Vibration monitoring system for Fans,Blowers& Pumps	Set	2				
17.0.14	Vibration monitoring system for main turbine / generator	Set	2				
17.0.15	Load Cell Field Control Box	No	16				

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VOLUME-II- PRICE BID-1079

SL. NO.	DESCRIPTION	UOM	QTY	RATE IN RS. (IN FIGURES)	RATE IN WORDS	AMOUNT	APPLICABLE TERM OF PAYMENT
17.0.16	Proximity Sensor Amplifier Box	No	272				
17.0.17	Electronic Water Level Indicator (EWLI)	Set	4				
17.0.18	Condenser vacuum pump system	Set	2				
17.0.19	Generator Instrumentation cabinet including annunciator (approx. weight 600 Kg, 1230 x 1060 x 2550 mm)	No	2				
17.0.20	Positioner cabinets (approx. 380 x 380 x 210 mm) for LPBP CV1, LPBP CV2, Spray water CV	No	6				
17.0.21	Local Instrument racks (LIR)	No	136				
17.0.22	Local Instrument enclosures (LIE)	No	104				
17.0.23	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	43				
17.0.24	Printers (80/132 col Dot Matrix, A3 Inkjet, A3 Laserjet, etc)	Set	26				
17.0.25	Computer furniture for all Servers, PCs, Printers	Set	2				
17.0.26	Plant Control Desk / CRT desk	Set	2				
17.0.27	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	2				
17.0.28	Laboratory Setup for Customer	Set	1				

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SL. NO.	DESCRIPTION	UOM	QTY	RATE IN RS. (IN FIGURES)	RATE IN WORDS	AMOUNT	APPLICABLE TERM OF PAYMENT
17.0.29	220/240 V UPS System with batteries and ACDB	Set	2				
17.0.30	Limestone Bunker Weighing System	Set	2				
18.0	Instruments/Devices including sensors/Cells/Probes etc						18.0
18.0.1	Latching relay 24V, 5A	No	2				
18.0.2	Moisture Sensor probe and dew point monitor	Set	2				
18.0.3	Conductivity Sensor and Transmitter	No	2				
18.0.4	Air filter regulators / Lubricators (1/2", 1", 0-6KG, 0-10 KG)	No	169				
18.0.5	Solenoid valves (3 way, AC/DC, 1/4", 1/2", 1", NPT/BSP, single/dual coil)	No	358				
18.0.6	Pneumatic Pressure controller with accessories	No	2				
18.0.7	Pneumatic Temperature controller with accessories		2				
18.0.8	Heavy Duty Limit Switch	No	10				
18.0.9	Speed switch / Speed detector	No	4				
18.0.10	Pressure Switch / DP Switch / DP indicating switch	No	168				
18.0.11	Electronic Level Switch (with amplifier, etc), Capacitance or conductivity type	No	78				
18.0.12	Vacuum switch	No	2				
18.0.13	Flow switch (Mechanical / Electronic)	No	2				
18.0.14	Pressure / DP / Flow (DP type) / Level -Transmitter	No	1232				
18.0.15	Flow Transmitter (Pulse / mass flow / target type) including flanges	No	18				
18.0.16	Speed transmitter	No	6				

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SL. NO.	DESCRIPTION	UOM	QTY	RATE IN RS. (IN FIGURES)	RATE IN WORDS	AMOUNT	APPLICABLE TERM OF PAYMENT
18.0.17	Process Transmitter	No	512				
18.0.18	Electronic Level Transmitter (with amplifier, etc), Capacitance or conductivity type / Guided Wave Radar(GWR) transmitter	No	24				
18.0.19	Temperature transmitters	No	240				
18.0.20	Pressure Gauge / DP gauge/DP Indicator	No	1088				
18.0.21	Temperature Gauge (all types)	No	622				
18.0.22	Level Indicator / Level Gauge	No	8				
18.0.23	Direct Water Level Gauge (DWLG)	Set	14				
18.0.24	Flow indicator / Flow Gauge / Flow meter/Acoustic flow meter (coal)	No	16				
18.0.25	Thermocouple / RTDs with thermowell (all types) along with converters wherever applicable	No	1504				
18.0.26	MTM Thermocouple over 22 M upto 28 M length	No	400				
18.0.27	Flame Scanner Head Assembly	No	8				
18.0.28	Hydrogen Purity analyser	No	2				
18.0.29	O2 (OXYGEN) Analyzer	No	10				
18.0.30	CO Analyzer (in situ type)	Set	2				
18.0.31	Dust emission monitor (Installation at around 88 M in chimney)	Set	2				

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SL. NO.	DESCRIPTION	UOM	QTY	RATE IN RS. (IN FIGURES)	RATE IN WORDS	AMOUNT	APPLICABLE TERM OF PAYMENT	
18.0.32	SWAS Sample handling system with racks & Sample conditioning panel with chiller	Set	2					
18.0.33	SWAS Analyzer Panel including various analyzers	Nos	2					
18.0.34	Flue gas (Sox/ Nox/ CO/ Co2 combined) analyzer (In situ type)	Set	2					
18.0.35	Digital / bargraph indicators	No	2					
18.0.36	Recorder 24 / 30 Channel	No	2					
18.0.37	Recorder 3 channel	No	2					
18.0.38	Rotor Earth fault Detector	No	2					
18.0.39	I/P converters	No	42					
18.0.40	Reverse rotation indication switch	No	2					
18.0.41	Ignitor	No	8					
18.0.42	Condensor Onload Tube Cleaning System	Set	2					
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
19.0.1	Rack mounted instruments commissioning	Set	6					
19.0.2	Electrical regulating drives: (Valve, damper, scoop)	No	12					
19.0.3	Pneumatic regulating drives: (Valve, damper) incl Burner tilt	No	214					

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SL. NO.	DESCRIPTION	UOM	QTY	RATE IN RS. (IN FIGURES)	RATE IN WORDS	AMOUNT	APPLICABLE TERM OF PAYMENT	
I9.0.4	Commissioning of Hydraulic actuators	No	20					
I9.0.5	Corner nozzle valve/ Trip valves commissioning	No	162					
I9.0.6	Open/Close type pneumatic gates / dampers / valves	No	280					
I9.0.7	ERV Controller (approx. weight 25kg, 350 x 290 mm)	No	4					
I9.0.8	Limit Switches (checking and adjusting only).	No	50					
I9.0.9	Only healthiness checking of embedded RTD / T/C	No	400					
I9.0.10	Fan Lube oil skid	Set	12					
I10.0	Power Cylinders							I10.0
I10.0.1	Mill Discharge Valve power cylinders (set of four)	Set	12					
I11.0	Miscellaneous items (items not covered under above heads)							I11.0
I11.0.1	Master and Slave Clock system	Set	1					
I11.0.2	HART MANAGEMENT SYSTEM including CABINET	Set	2					
Grand Total in figures (In Rs)								
Grand Total in Words								
Rs.....								