

TENDER SPECIFICATION

NO: BHE/PW/PUR/BINT-CNI761

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 BOILER AND ITS AUXILIARIES, TURBOGENERATOR AND ITS AUXILIARIES, STATION C&I, FOR 2X250 MW

AT

BINA POWER SUPPLY COMPANY LTD

BINA THERMAL POWER PROJECT (2x250 MW)

BINA, DISTT: SAGAR,

MADHYA PRADESH

VOLUME- II - PRICE BID



BHARAT HEAVY ELECTRICALS LIMITED

(A Govt. of India Undertaking)

POWER SECTOR - WESTERN REGION

345, KINGS WAY - NAGPUR 440 001

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THESE TENDER DOCUMENTS CONTAINING VOLUME-II PRICE BID IS ISSUED TO:

M/s.....

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(THESE TENDER DOCUMENTS ARE NOT TRANSFERABLE)

FOR BHARAT HEAVY ELECTRICALS LIMITED

AGM (PURCHASE)

PLACE: NAGPUR

DATE :

BHARAT HEAVY ELECTRICALS LIMITED : PSWR : Nagpur
T.S. No. BHE/PW/PUR/BINT-CNI/761
VOLUME-II-PRICE BID

Rate Schedule C&I Works for 2 x 250 MW BINA PROJECT

SN	DESCRIPTION	TOTAL QTY	UOM	Rate in Rs.	Total Price in Rs.	Applicable TOP
A-1	CABLE TRAY AND ACCESSORIES					I.1.0
A-1.1	GI earthing wire 8 SWG	5000	Meters			
A-1.2	GI Pipe (1/2", 1") Heavy grade	6388	Meters			
A-1.3	GI Pipe (1.5 ", 2")	20	Meters			
A-1.4	Copper tube 6mm/8mm / 1/4" (Sheathed / bare)	5500	Meters			
A-1.5	Copper tube 1/2" to 1" (Sheathed / bare)	300	Meters			
A-1.6	Hoses- 1/2" to 1", SS/Teflon, Braided/unbraided, upto 5M length	180	Nos			
A-1.7	Perforated cable tray and accessories (with or without cover) 50mm	5350	Meters			
A-1.8	Perforated cable tray and accessories (with or without cover) 100mm	8000	Meters			
A-1.9	Perforated cable tray and accessories (with or without cover) 150mm	3050	Meters			
A-1.10	Cable duct 60 x 60 x 1000	360	Nos			
A-1.11	Cable duct 180 x 100 x 1000	120	Meters			
A-1.12	Cable duct 250 x 100 x 1000	360	Meters			
A-3	CABLE LAYING (CONTROL AND SIGNAL CABLES)					I.3.0

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A-3.1	Screened Copper Cable 2P x 0.5 sqmm armoured / unarmoured	108454	Meters			
A3.2	Screened Copper Cable 4P x 0.5 sqmm armoured / unarmoured	240984	Meters			
A-3.3	Screened Copper Cable 8P x 0.5 sqmm armoured / unarmoured	233284	Meters			
A-3.4	Screened Copper Cable 10P / 12P x 0.5 sqmm armoured / unarmoured	31228	Meters			
A-3.5	Screened Copper Cable 14P x 0.5 sqmm armoured / unarmoured	1602	Meters			
A-3.6	Screened Copper Cable 1P/2C x 1.5 sqmm armoured / unarmoured	1306	Meters			
A-3.7	Screened Copper Cable 2P/4C x 1.5 sqmm armoured / unarmoured	3000	Meters			
A-3.8	Screened Copper Cable 5C/7C x 1.5 sqmm armoured / unarmoured	2600	Meters			
A-3.9	Screened Copper Cable 10C x 1.5 sqmm armoured / unarmoured	11600	Meters			
A-3.10	Screened Copper cable 3C x 1.5 sq. mm armoured/ unarmoured	12000	Meters			
A-3.11	Screened Copper cable 3C x 2.5 sq. mm armoured/ unarmoured	8000	Meters			
A-3.12	Compensating cable 2P x 1.0/1.3/2.08 sqmm type Tx/Sx/Kx unarmoured/armoured	22940	Meters			

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A-3.13	Compensating cable 4P x 1.0/1.3/2.08 sqmm type Tx/Sx/Kx unarmoured/armoured	14498	Meters			
A-3.14	Compensating cable 6P x 1.0/1.3/2.08 sqmm type Tx/Sx/Kx unarmoured/armoured	23150	Meters			
A-3.15	Copper Cable 2 or 3 triad, 0.5/1.5 sqmm armoured/unarmoured	6090	Meters			
A-3.16	Laying, etc of Optical fibre cables on cable trays, conduits etc (termination supervision by other agency) with minor civil works	5000	Meters			
A-3.17	Network UTP Cables (special termination using UTP connectors involved)	9500	Meters			
A-3.18	2P/ 4C x 1.5 sqmm control cable	100	Meters			
A-3.19	5C X1.5 control cable	1000	Meters			
A-3.20	Flame scanner cable	4000	Meters			
A-4	JUNCTION BOX/PUSH BUTTON STATION(LOCAL)					1.4.0
A-4.1	Assembly of JB mounting frames (approx 1600 x 1700 x 850)	4	Nos			
A-4.2	Assembly of JB mounting frames (approx 1500 x 800 x 1800)	4	Nos			

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A-4.3	Assembly of JB mounting frames (approx 1100 x 800 x 300)	4	Nos			
A-4.4	Assembly of JB mounting frames (approx 1600 x 150 x 1800)	8	Nos			
A-4.5	Assembly of local gauge board 1400 x 450 x 1900 mm	40	Nos			
A-4.6	FSSS Local Oil Gun Maintenance Switch Box	24	Nos			
A-4.7	Junction boxes upto 48 way	434	Nos			
A-4.8	Junction boxes above 48 way	25	Nos			
A-4.9	CJCB Junction boxes upto 48 way	5	Nos			
A-4.10	CJCB Junction boxes above 48 way	24	Nos			
A-4.11	2PB or 3PB Pushbutton box	20	Nos			
A-5	CONDUITS/IMPULSE PIPE/TUBES					1.5.0
A-5.1	Impulse pipe CS ½" SCH 40 (D21.3 x 2.76 mm)	100	Meters			
A-5.2	Impulse pipe CS ½" SCH 80 (D21.3 x 3.73 mm)	7500	Meters			

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A-5.3	Impulse pipe CS 3/4" SCH 80 (D25 x 4 mm)	3400	Meters			
A-5.4	Impulse pipe CS 1/2" SCH 160 (D21.3 x 4.78 mm)	2002	Meters			
A-5.5	Impulse pipe AS 1/2" SCH 40 (D21.3 x 2.76 mm)	100	Meters			
A-5.6	Impulse pipe ASTM A 335 P22 1/2 " Sch XXS	1600	Meters			
A-5.7	Impulse pipe ASTM A 335 P22 3/4 " Sch 80	606	Meters			
A-5.8	Impulse pipe CS 1" SCH 40 (D33.4 x 3.37 mm)	50	Meters			
A-5.9	Impulse pipe CS 1" SCH 80 (D33.4 x 4.55 mm)	1000	Meters			
A-5.10	Impulse pipe SS 1/4" (D12.7/13.5 x 2.1/2.6 mm)	100	Meters			
A-5.11	Impulse pipe SS 1/2" SCH 160	100	Meters			
A-5.12	Impulse pipe ASTM A 106 Gr C 1" NB SCH 80	250	Meters			
A-5.13	Impulse pipe ASTM A 106 Gr C 1/2" NB SCH 160	800	Meters			
A-5.14	Impulse pipe ASTM A 106 Gr C 1/2" NB SCH 80	5500	Meters			

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A-5.15	Impulse pipe ASTM A 106 Gr C 3/4" NB SCH 80	2800	Meters			
A-5.16	Impulse pipe ASTM A 335 P22 1/2" NB XXS	1100	Meters			
A-5.17	Impulse pipe ASTM A312 TP316 1/2" SCH 80	700	Meters			
A-5.18	ASTM A312 TP316 1/2" NB SCH 160	1200	Meters			
A-5.19	Impulse pipe CS 16 X 2.6	2400	Meters			
A-5.20	SS tube D6 x 1.0/1.5mm	100	Meters			
A-5.21	Impulse pipe CS 1/4" (D13.5 x 2.6 mm)	660	Meters			
A-5.22	Impulse pipe CS 1/4" (D13.5 x 2.9 mm)	1600	Meters			
A-5.23	CS tube DN 80	160	Meters			
A-5.24	Impulse pipe A213 TP316 1/2" NB SCH 160	1502	Meters			
A-5.25	Impulse pipe A213 TP316 1/2" NB SCH 40	1200	Meters			
A-5.26	2" CS Pipe	200	Meters			

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A-5.27	2" SS Pipe	300	Meters			
A-6	MISCELLANEOUS STRUCTURAL STEEL INCLUDING FRAMES FOR PANELS/RACKS/INSTRUMENTS, SUPPORT FOR CABLE TRAY/PIPES/TUBES, CANOPIES ETC.					1.6.0
A-6.1	Structural steel for fabrication	31.42	Tons			
A-6.2	MS Flat 50 x 6 mm	100	Meters			
A-7	PANELS/CUBICLES/DESKS/RACKS/ENCLOSURES/COMPUTERS/COMPUTER PERIPHERALS/PLCS/UPS/BATTERIES					1.7.0
A-7.1	Control Panel (approx L1000 X B1000 X H2500, 400Kg) - one panel	23	Nos			
A-7.2	Control Panel (approx L1000 to 1500 X B1000 X H2500, 800 Kg) - suit of two panels	40	Nos			
A-7.3	Control Panel (approx L1500 to 2250 X B1000 X H2500, 1200 Kg) - suit of three panels	22	Nos			
A-7.4	Control Panel (approx L2250 to 3000 X B1000 X H2500, 1600 Kg) - suit of four panels	4	Nos			
A-7.5	Control Panel (approx L3750 X B800 X H2415, 2000 Kg) - suit of five panels	2	Nos			
A-7.6	Grevemetric Feeder control panels(1200 x 2365 x 600)	6				

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A-7.7	Unit Control panel	2	Set			
A-7.8	Electrical control panel 1900x1000x2355	2	Set			
A-7.9	Master and Slave Clock system	1	Set			
A-7.10	Generator Instrumentation cabinet including annunciator (1230 x 1060 x 2550, 600 Kgs)	2	No			
A-7.11	120 KVA UPS with inverter, bypass line equipment, ACDB and 750 AH Battery system	1	Set			
A-7.12	Vibration monitoring system for Fans and Pulverisers	2	Set			
A-7.13	Vibration monitoring system for main turbine	2	Set			
A-7.14	Vibration monitoring system for BFP/CEP/ACWP/CWP	2	Set			
A-7.15	DC motor starter box for scanner fan	2	No			
A-7.16	Control panels for Centrifuges	4	Nos			
A-7.17	Positioner cabinets (380x380x210) for LPBP CV1, LPBP CV2, Spray water CV	6	Nos			
A-7.18	Control Panel for HP dosing system (1000x800x2000, 3.0 MT)	2	No			
A-7.19	Burner Tilt Shear Pin Failure Indication Box	8	Nos			

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A-7.20	Air Heater Rotor Stoppage Alarm Box	4	Sets			
A-7.21	Condenser Vacuum pump system	2	Set			
A-7.22	Local Instrument racks (LIR)	60	Nos			
A-7.23	Local Instrument enclosures (LIE)	52	Nos			
A-7.24	NETWORK PANELS (800x800x2100)	6	Nos			
A-7.25	Power Distribution Panel	2	Nos			
A-7.26	WALL MOUNTED NETWORK ENCLOSURES (500x600x600)	2	Sets			
A-7.27	Electronic Water Level Indicator (EWLI)	8	Sets			
A-7.28	Hydrogen Purity analyzer	2	No			

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A-7.29	SWAS Sample handling system with racks & Sample conditioning panel with chiller	2	Sets			
A-7.30	Analyzer Panel including various analyzers	2	Sets			
A-7.31	Furnace Temperature probe	4	Nos			
A-7.32	Steam tube leak detection system	2	Set			
A-7.33	Plant Control Desk / CRT desk	2	Sets			
A-7.34	Computer furniture for all Servers, PCs, Printers	2	Sets			
A-8	INSTRUMENTS/DEVICES - INCLUDING SENSORS/CELLS/PROBES ETC.					1.8.0
A-8.1	Direct Water Level Gauge	4	Sets			
A-8.2	Solenoid valves (3 way, AC/DC, 1/4", 1/2", 1", NPT/BSP, single/dual coil)	230	Nos			
A-8.3	HEA Exciter system	24	Sets			
A-8.4	Flame Scanner Head Assembly	40	Nos			
A-8.5	Relay / Latch relay with base	4	Nos			
A-8.6	Air filter regulators / Lubricators (1/2", 1", 0-6KG, 0-10 KG)	200	Nos			

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A-8.7	Speed Regulators / Air lock valves in oil gun corner rack	24	Nos			
A-8.8	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	36	Sets			
A-8.9	Printers (80/132 col Dot Matrix, A3 Inkjet, A3 Laserjet, etc)	10	Sets			
A-8.10	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	10	Nos			
A-8.11	Laboratory Setup for Customer	1	Set			
A-8.12	Coal Bunker Level Monitoring Strain gauge (8 per set)	2	Sets			
A-8.13	CO Analyzer (in situ type)	2	Sets			
A-8.14	O2 (OXYGEN) Analyzer	4	Nos			
A-8.15	Flue Gas Analyzer-SOX/NOX/COwith Panel	2				
A-8.16	Dust emission monitor (Installation at around 50 M in chimney)	2	Sets			
A-8.17	Console inserts (to be mounted on Backup desk)	4	Sets			
A-8.18	Vertical indicators (moving coil / bar graph)	12	Nos			
A-8.19	Digital / bargraph indicators	8	Nos			

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A-8.20	Recorder 24 / 30 Channel	4	Nos			
A-8.21	Recorder 3 channel	6	Nos			
A-8.22	Speed switch / Speed detector	6	Nos			
A-8.23	Moisture Sensor probe and dew point monitor	2	Set			
A-8.24	Rotor Earth fault Detector	2	Nos			
A-8.25	Pressure Switch / DP Switch / DP indicating switch	350	Nos			
A-8.26	Temperature Switch / Thermostat	80	Nos			
A-8.27	Float type Level Switch	80	Nos			
A-8.28	Electronic Level Switch (with amplifier, etc), Capacitance or conductivity type	20	Nos			
A-8.29	Electronic Level Transmitter (with amplifier, etc), Capacitance or conductivity type	12	Nos			
A-8.30	Guided Wave Radar type level Transmitters	12	Nos.			
A-8.31	Flow switch (Mechanical / Electronic)	26	Nos			

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A-8.32	Pressure Gauge / DP gauge	800	Nos			
A-8.33	Temperature Gauge (all types)	750	Nos			
A-8.34	Level Indicator / Level Gauge	32	Nos			
A-8.35	Flow indicator / Flow Gauge / Flow meter/Acoustic flow meter (coal)	12	Nos			
A-8.36	Pressure / DP / Flow (DP type) / Level -Transmitter	633	Nos			
A-8.37	Level Transmitter (displacer type)	12	Nos			
A-8.38	Flow Transmitter (Pulse / mass flow / target type) including flanges	4	Nos			
A-8.39	Thermocouple / RTDs with thermowell (all types) along with converters wherever applicable	1000	Nos			
A-8.40	MTM Thermocouple upto 17 M length	112	Nos			
A-8.41	MTM Thermocouple over 17 M upto 22 M length	140	Nos			
A-8.42	Thermocouple assy with 6 / 9 Cr-Al MI T/C along with integral JB	4	Nos			
A-8.43	I/P converters	130	Nos			
A-8.44	Pneumatic Pressure controller with accessories	2	Nos			
A-8.45	Pneumatic Temperature controller with accessories	14	Nos			

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A-8.46	SADC Power Cyliner	112	Nos			
A-9	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 controller, power cylinders, pressure and temperature gauges/transmitters etc.					1.9.0
A-9.1	Fan & Mill Lube oil skid	24	Sets			
A-9.2	Rack mounted instruments commissioning	6	Sets			
A-9.3	Coal Feeder local instruments commissioning	12	Nos			
A-9.4	Electrical regulating drives: (Valve, damper, scoop)	12	Nos			
A-9.5	Pneumatic regulating drives: (Valve, damper) incl SADC, Burner tilt	280	Nos			
A-9.5	Commissioning of Hydraulic actuators	28	Nos			
A-9.7	ERV Controller	4	Nos			
A-9.8	Corner valve/ Trip valves commissioning	80	Nos			
A-9.9	Open/Close type pneumatic gates / dampers / valves	120	Nos			
A-9.10	Only healthiness checking of embedded RTD / T/C	600	Nos			

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A-9.11	Limit Switches (checking and adjusting only).	90	Nos			
A-9.12	LP dosing system	2	Set			
GRAND TOTAL IN FIGURES IN RUPEES						
GRAND TOTAL IN WORDS IN RUPEES						

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