



TENDER SPECIFICATION

NO: BHE/PW/PUR/DBBDT-ELE/983

FOR HANDLING AT SITE STORES/STORAGE YARD, TRANSPORTATION TO SITE OF WORK, COMPLETE ERECTION, CHECKING OF CALIBRATION, TESTING, COMMISSIONING AND HANDING OVER OF DAVR, ELECTROSTATIC PRECIPITATOR, SOOT BLOWER SYSTEM, VARIABLE FREQUENCY DRIVES FOR ID FANS, CABLING PACKAGE, AND ASSOCIATED EQUIPMENTS FOR ELECTRICAL PACKAGE FOR 2X600 MW DBPL RAIGARH PROJECT.

AT

BARADARHA IN JANJGIR - CHAMPA DISTRICT IN CHHATTISGARH STATE

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

ADDL. GENERAL MANAGER (PURCHASE)

PLACE: NAGPUR

DATE :

TS NO BHE/PW/PUR/DBBDT-ELE/983

BHARAT HEAVY ELECTRICALS LIMITED

POWER SECTOR, WESTERN REGION

Sl. No.	Description of items	UOM	Quantity	Unit Rate in Figure (in Rs)	Unit Rate in words(in Rs)	Total amount
SECTION-E1A: CABLE TRAYS AND ACCESSORIES						
E1A.1	Ladder type 600(W) x 120 (H) mm	Mtr	20000			
E1A.2	Ladder type 450(W) x 120 (H) mm	Mtr	1380			
E1A.3	Ladder type 300(W) x 120 (H) mm	Mtr	11950			
E1A.4	Ladder type 150(W) x 120 (H) mm	Mtr	9900			
SECTION-E1B: FLEXIBLE CABLE TRAY SUPPORT AND ACCESSORIES						
E1B.1	Base plate for double support channel	No	100			
E1B.2	Base plate for single support channel	No	175			
E1B.3	Double support channel	Mtr	3400			
E1B.4	Single support channel	Mtr	3380			

Sl. No.	Description of items	UOM	Quantity	Unit Rate in Figure (in Rs)	Unit Rate in words(in Rs)	Total amount
E1B.5	Canti lever arm (C/A) – for 600 mm wide cable trays	No	6220			
E1B.6	Canti lever arm (C/A) – for 450 mm wide cable trays	No	320			
E1B.7	Canti lever arm (C/A) – for 300 mm wide cable trays	No	5070			
E1B.8	Canti lever arm (C/A) – for 150 mm wide cable trays	No	1000			
E1B.9	90 Degree Angle fitting	No	2220			
E1B.10	Clamp for double channel (CC2)	No	50			
E1B.11	Clamp for single channel (CC1)	No	4800			
E1B.12	Beam clamp	No	250			
E1B.13	Tray clamp for ladder type cable tray	No	3500			
SECTION-E2A : LT POWER CABLES (Generally Unarmoured/Armoured)						
E2A.1	3.5C X 120sqmm Aluminium	Mtrs.	6000			
E2A.2	3C X 50sqmm Aluminium	Mtrs.	6000			

Sl. No.	Description of items	UOM	Quantity	Unit Rate in Figure (in Rs)	Unit Rate in words(in Rs)	Total amount
E2A.3	3C X 50sqmm Copper	Mtrs.	800			
E2A.4	3C X 10 sqmm Aluminium	Mtrs.	2000			
E2A.5	3C X 6 sqmm Aluminium	Mtrs.	32000			
E2A.6	3C X 2.5sqmm Copper	Mtrs.	211200			
E2A.7	2C X 120sqmm Aluminium	Mtrs.	100000			
E2A.8	2C X 2.5sqmm Copper	Mtrs.	42400			
E2A.9	1C X 70 sqmm Copper multistranded	Mtrs.	200			
SECTION-E2B : LT CONTROL CABLES (Generally Unarmoured/Armoured, Screened/Unscreened)						
E2B.1	14C ,2.5 sqmm Copper	Mtrs.	10800			
E2B.2	12C ,2.5 sqmm Copper, 1.1kV Armoured PVC insulated	Mtrs.	2000			
E2B.3	10C ,1.5 sqmm Copper	Mtrs.	46000			
E2B.4	10C ,2.5 sqmm Copper	Mtrs.	53000			

Sl. No.	Description of items	UOM	Quantity	Unit Rate in Figure (in Rs)	Unit Rate in words(in Rs)	Total amount
E2B.5	7C, 1.5 sqmm Copper	Mtrs.	42000			
E2B.6	5C, 4 sqmm Copper, 1.1kV Armoured PVC insulated	Mtrs.	10000			
E2B.7	5C ,2.5 sqmm Copper, 1.1kV Armoured PVC insulated	Mtrs.	12000			
E2B.8	4C ,1.5 sqmm Copper(Screened)	Mtrs.	108000			
E2B.9	3C 2.5 sqmm Copper	Mtrs.	63600			
SECTION-E2C : HT POWER CABLES						
E2A.1	3C X 300sqmm HT XLPE 6.6kV Grade	Mtrs.	5000			
E2A.2	1C X 630sqmm HT XLPE 6.6 kV Grade	Mtrs.	5000			
SECTION-E3 : JUNCTION BOXES AND PUSH BUTTON						
E3.1	Start Stop Push Button Station 180X100X250 mm approx.	Nos.	336			
E3.2	Junction box for Hoper ,Support& Shaft heaters 450X150X300 mm approx.	Nos.	208			
E3.3	Junction box for Hopper thermostat, ALI-high, start stop push button 300x150x400 mm	Nos.	64			

Sl. No.	Description of items	UOM	Quantity	Unit Rate in Figure (in Rs)	Unit Rate in words(in Rs)	Total amount
SECTION-E4 : STRUCTURAL STEEL						
E.4.1	Structural Steel fabrication & installation (MS angle, Channel, Plate etc)	MT	30			
SECTION-E5 A:SWITCHGEARS / MCC /PCC						
E5A.1	Soot Blower Motor control Center, double front, Approx overall dimension 18000(L)x2400(H)x1000(W),approx WT 11.4 T approx., shall be supplied in eight to ten loose shipping sections	Nos	2			
E5A.2	LT main Switch Board, double front, Approx overall dimension 10400(W)x1700(D)x2450(H),approx weight 8.0 MT, shall be supplied in eight to ten loose shipping sections	Nos	8			
E5A.3	Auxiliary Control Panel, Approx Overall Dimension 12600X1700X2450 mm, approx Weight of each panel 9.0 MT and supplied in loose shipping sections	Nos	8			
SECTION-E5 B : STARTER PANEL/BOXES/POWER DISTRIBUTION BOX/MARSHALLING BOXES						

Sl. No.	Description of items	UOM	Quantity	Unit Rate in Figure (in Rs)	Unit Rate in words(in Rs)	Total amount
E5B.1	Electronic Control Panel, Overall dimensions approx.600X550X2000mm, approx.Weight of each panel 0.3MT. BAPCON CONTROLLER approx .dimension 280 x 210 x 210 mm, 5 Kg appr., rotary switches, etc along with cables and connectors, shall be supplied loose for mounting in the panel at site	Nos	160			
E5B.2	RAPPER CONTROL PANEL Overall dimension approx.1000X650X2000 mm, approx.Weight of each panel 0.30 MT. 2 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	8			
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 -1 No. PC termination box, peripheral cables etc.	set	2			
E5B.4	DC motor starter panels, etc (DC JOP, DC EOP, Seal oil panel), including resistance boxes. Approx weight 0.5 MT and approx. dimension	Nos	6			

	1000x800x2200 mm each.					
SECTION-E5C: PANELS						
E5C.1	Generator ,Generator Transformer ,UAT Transformer- Control ,protection & Metering panels .Approx dimension of each panel 1000x1000x2300(H),approx weight 600kg each panel	set	2			
SECTION-E5D : DIGITAL AUTOMATIC VOLTAGE REGULATOR FOR BRUSHLESS EXCITAION SYSTEM						
E5D.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			
SECTION-E5E : VARIABLE FREQUENCY DRIVE SYSTEM FOR ID FANS						
E5E.1	Transportation from stores / storage yards to erection site , erection , assembly , testing & commissioning of VARIABLE FREQUENCY DRIVE of ID FANS consist of Load Converter Inverter Panels,Adapter Panels,Control Panels. Reactors ,Transformers, Vacuum Breakers, flexible coupling and associated accessories, as per tender specification.	Set	4			

SECTION- E 5F: MISCELLANEOUS EQUIPMENTS						
E5F.1	Ash Level Indicator comprising of level probe with extension lagging pipe, Electronic Unit, Interconnecting Cabling, Conduit, etc.	Set.	320			
SECTION-E 6 : EARTHING PROTECTION STRIPS						
E6.1	65 x 12 mm/ 10 mm GI earthing flat	Mtrs.	2700			
E6.2	50 x 6 mm GI earthing flat	Mtrs.	12500			
E6.3	30 X 5 mm GI earthing flat	Mtrs.	9700			
E6.4	25 X 3 mm GI earthing flat	Mtrs.	1700			
E6.5	GI wire 3.15 dia	Mtrs.	18000			
E6.6	GI earthing wire 8 SWG	Mtrs.	4000			
SECTION -E7 :HT 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			

SECTION- E8 :OIL FILLED TRANSFORMERS(GT,ST,UAT)					
E8.1	1-phase 250 MVA, 420/√3 /21 KV, ONAN/ONAF/OFAP Cooled Generator Transformer including all accessories, piping, cabling etc. as described in Tender Specification.	No	7		
E8.2	90/45-45 MVA, 400/11.5-11.5 kV, 3-phase Station Transformer (ST) , OLTC , ONAN/ONAF/OFAP including all accessories, piping, cabling etc as described in tender specification. Also including two nos Neutral Grounding Transformer (NGR) for each ST.	No	2		
E8.3	12.5/16 MVA, 3-phase 11/6.9 kV Unit Auxiliary Transformer (UAT) including all accessories, piping, cabling etc as described in tender specification. Also including one Neutral Grounding Transformer (NGR) for each UAT.	No	4		
E8.4	12.5/16 MVA, 11/6.9 kV, 3-phase Station Auxiliary Transformer (SAT) , ONAN/ONAF cooled, including all accessories, piping, cabling etc as described in tender specification.	No	2		
E8.5	25.2/31.5 MVA, 3-phase 21/11.5 kV ONAN/ONAF cooled Unit Transformer (UT) including all accessories, piping, cabling etc as described in tender specification.	No	4		
SECTION-E 9 : ONLY TESTING & COMMISSIONING					
E9.1	Heating elements for Hopper Heater of ESP	No	3840		

E9.2	Heating elements for Support Insulator Heater, Shaft Insulator Heaters of ESP	No	800			
E9.3	High Voltage Rectifier Transformers (95 KV peak, 1000 mA) including oil filtration.	No	160			
E9.4	Testing & Commissioning of Collecting, Emitting, GD Screen Motor	No	336			
E9.5	Testing and commissioning of 6.6 & 11KV HT motors including dryout.	No	52			
E9.6	Testing and commissioning of 415 V LT motors including dry out.	No	252			
E9.7	Generator system testing	Set	2			
E9.8	Testing and Commissioning of soot blower control panel, including mounting of mimic ,	No	2			
E9.9	Testing & Commissioning of Wall, Long Retractable, Air Heater Soot Blower	No	524			
E9.10	Testing & Commissioning of Furnace temperature probe (including solenoids, thermocouple, etc)	No	4			
E9.11	Thermostats including Calibration.	No	176			
E9.12	Electrically (LT) Operated Valves, Dampers and Gates with Actuators, Limit Switches etc. (Regulating & ON/OFF Type).	No	1000			
TOTAL AMOUNT IN FIGURES: Rs.						

