

# **TENDER SPECIFICATION**

**No. BHE/PW/PUR/VIOCI-CNI/1073**

**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 HRSG AND ITS AUXILIARIES, ,GAS TURBINE AND ITS AUXILIARIES, TURBOGENERATOR AND ITS AUXILIARIES, STATION C&I FOR 1X30 MW GTG + 1X125 TPH HRSG, BASED CO-GEN, IOCL (IRUP), GUJARAT REFINERY, IOCL VADODARA PROJECT (GT#6).

**AT**

**INDIAN OIL CORPORATION LIMITED  
GUJARAT REFINERY, JAWAHAR NAGAR  
VADODARA (GUJARAT)**

**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

**BHARAT HEAVY ELECTRICALS LIMITED**

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POWER SECTOR - WESTERN REGION  
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345, KINGSWAY - NAGPUR 440 001

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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, HRSG AND ITS AUXILIARIES, GAS TURBINE AND ITS AUXILIARIES, TURBOGENERATOR AND ITS AUXILIARIES, STATION C&I FOR FOR **1X30 MW GTG + 1X125 TPH HRSG, BASED CO-GEN, IOCL (IRUP), GUJARAT REFINERY, IOCL VADODARA PROJECT (GT#6).**

AT

**INDIAN OIL CORPORATION LIMITED  
GUJARAT REFINERY, JAWAHAR NAGAR  
VADODARA (GUJARAT)**

LAST DATE FOR TENDER SUBMISSION Refer Notice Inviting Tender

THESE TENDER SPECIFICATION DOCUMENTS CONTAINING VOLUME-I AND VOLUME- II ARE ISSUED TO:

M/s. ....

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PLEASE NOTE:  
THESE TENDER SPECS DOCUMENTS ARE NOT TRANSFERABLE.

For Bharat Heavy Electricals Limited

AGM (Purchase)  
Place: Nagpur Date :

BHEL PSWR NAGPUR  
VOL-II:PRICE BID (SCHEDULE OF RATES QUANTITIES)  
T.S.No. BHE/PW/PUR/VIOCI-CNI/1073

SL. NO.	DESCRIPTION	UOM	QTY	Unit Rate In Figure(In Rs)	Unit Rate In Words (In Rs)	Total Amounts (In Rs)	Applicable Terms of Payments
<b>11.0</b>	<b>Cable tray and Accessories</b>						<b>11.0</b>
11.0.1	Perforated cable tray and accessories (with or without cover) 50mm	Meter	1250				
11.0.2	Perforated cable tray and accessories (with or without cover) 150mm	Meter	1450				
<b>12.0</b>	<b>Cable laying including earthing wires</b>						<b>13.0</b>
12.0.1	Screened Copper Cable 2P x 0.5 sqmm armoured / unarmoured	Meter	2000				
12.0.2	Screened Copper Cable 4P x 0.5 sqmm armoured / unarmoured	Meter	2000				
12.0.3	Screened Copper Cable 6P x 0.5 sqmm armoured / unarmoured	Meter	32200				
12.0.4	Screened Copper Cable 10P / 12P x 0.5 sqmm armoured / unarmoured	Meter	3600				
12.0.5	Screened Copper Cable 10P / 12P x 2.5 sqmm armoured / unarmoured	Meter	30000				
12.0.6	Screened Copper Cable 1P/2C or 3C x 1.5 sqmm armoured / unarmoured	Meter	30450				
12.0.7	Screened Copper Cable 1P x 6 sqmm armoured / unarmoured	Meter	2500				
12.0.8	Screened Copper Cable 3Cx 2.5 sqmm armoured / unarmoured	Meter	4000				
12.0.9	Screened Copper Cable 2P/4C x 1.5 sqmm armoured / unarmoured	Meter	6375				
12.0.10	Screened Copper Cable 4P x 1.5sqmm armoured / unarmoured	Meter	1000				
12.0.11	Screened Copper Cable 6P x 1.5sqmm armoured / unarmoured	Meter	9200				
12.0.12	Screened Copper Cable 9P x 1.5 sqmm armoured / unarmoured	Meter	1000				
12.0.13	Screened Copper Cable 10P x 1.5 sqmm armoured / unarmoured	Meter	500				
12.0.14	Screened Copper Cable 12P x 1.5 sqmm armoured / unarmoured	Meter	15000				
12.0.15	Screened Copper Cable 18P x 1.5 sqmm armoured / unarmoured	Meter	1000				

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12.0.16	Screened Copper Cable 24P x 1.5 sqmm armoured / unarmoured	Meter	600				
12.0.17	Copper Cable 1 triad, 0.5/1.5 sqmm armoured/unarmoured	Meter	2600				
12.0.18	Copper Cable 2 or 3 triad, 0.5/1.5 sqmm armoured/unarmoured	Meter	1000				
12.0.19	Copper Cable 6 triad, 0.5/1.5 sqmm armoured/unarmoured	Meter	1500				
12.0.20	Copper Cable 8 triad, 0.5/1.5 sqmm armoured/unarmoured	Meter	6000				
12.0.21	1Px(0.5Sqmm/16AWG) Cr-Al Extension Cable	Meter	1700				
12.0.22	12Px(16 AWG/20AWG) Cr-Al Extension Cable	Meter	3000				
12.0.23	6Px20 AWG Cr-Al Extension Cable	Meter	2000				
12.0.24	6Px30 AWG Cr-Al Extension Cable	Meter	5000				
12.0.25	12Px26 AWG Cr-Al Extension Cable	Meter	5000				
12.0.26	Laying, etc of Optical fibre cables on cable trays, conduits etc (termination supervision by other agency) with minor civil works	Meter	300				
12.0.27	Network UTP Cables (special termination using UTP connectors involved)	Meter	3050				
<b>13.0</b>	<b>Junction box/Push Button station</b>						<b>14.0</b>
13.0.1	Junction boxes upto 48 way	No	165				
13.0.2	Junction boxes above 48 way	No	26				
13.0.3	Pushbutton box	No	8				
13.0.4	Instruments and Junction Box Canopies		210				
<b>14.0</b>	<b>Conduits/Impulse pipe/tubes</b>						<b>15.0</b>
14.0.1	Impules pipe SS 6 x 1.5/2.1 mm	Meter	250				

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I4.0.2	Impuse pipe SS 21.3 x 3.7 mm	Meter	2000				
I4.0.3	Impules Pipe SS 33.4 x 3.4 mm	Meter	800				
I4.0.4	Impulse Pipe SS 1" NB	Meter	100				
I4.0.5	Impulse Pipe SS 1/2" NB	Meter	300				
I4.0.6	SS tube 6MM	Meter	100				
I4.0.7	SS tube 1/2"(OD 12.5X1 mm thickness)	Meter	425				
I4.0.8	SS tube 12.7x(2.1/0.9)	Meter	36				
I4.0.9	CS tube 21.3x2.68 NB15 ERW Galv	Meter	78				
I4.0.10	CS tube 34.2x3.25 GALV	Meter	42				
I4.0.11	CS tube 48.8x3.25 GALV	Meter	12				
I4.0.12	CS tube 60.8x3.65 GALV	Meter	30				
I4.0.13	Conduit Box (EP)(0.5",0.75",1.0",1.5",2.0")	No	88				
I4.0.14	Conduit Box with Terminal Board	No	12				
I4.0.15	Sealer Conduit Capped 1/2",1",1.5",2"	No	58				
I4.0.16	Unn Conduit HUB dia (12.7,25.4,38.1,50.8) Male	No	95				
I4.0.17	Unn Conduit HUB dia (12.7,25.4,38.1,50.8) Female	No	12				
I4.0.18	Flexible Conduit 1/2" X203.2 Expl. PF	No	2				
I4.0.19	Flexible Conduit 1/2" X609.6 Expl. PF	No	3				
I4.0.20	Flexible Conduit 1.5" NPT L1500 SS EP	No	4				

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SL. NO.	DESCRIPTION	UOM	QTY	Unit Rate In Figure(In Rs)	Unit Rate In Words (In Rs)	Total Amounts (In Rs)	Applicable Terms of Payments
14.0.21	Connector tube Male 1/2" x 1/2" NPT	No	6				
14.0.22	Connector tube Male 1/4" x 1/2" NPT S	No	5				
14.0.23	Connector tube Male 1/4" x 1" NPT	No	18				
14.0.24	Connector tube Female 1/4" X 1/2"	No	1				
14.0.25	Elbow Conduit Capped (0.5",1",1.5",2") NPT	No	22				
14.0.26	Clamp Pipe 0.5,1.0,1.5,2.0	No	135				
15.0	<b>Miscellaneous Structural steel including frames for Panels/Racks/Instruments, supports for cable tray/pipes/tubes, Canopies etc</b>						16.0
15.0.1	Structural steel for fabrication	MT	9				
16.0	<b>Panels/Cubicles/Racks/Enclosures/Monitors/Computer/Computer peripheral/PLCs/UPS/Batteries</b>						17.0
16.0.1	Control Panel (approx. weight 400kg, 800(L) X 750(B) X 2500(H) mm) - one panel	No	2				
16.0.2	Control Panel (approx. weight 1200kg, 2400(L) X 750(B) X 2500(H) mm) - suit of three panels	No	6				
16.0.3	NETWORK PANELS( Approx. Dimension 950(H)X1050(D)X2700(H),Wt-500kgs per panel)	No	1				
16.0.4	GT Auxiliary Panel(Approx. Dimension 1000(W)X800(D)X2400(H) mm and Wt-250kgs)	Set	1				
16.0.5	Fire Fighting Control Panel(Approx Dimension 800X400X2000 mm,Wt-150kgs)	Set	1				
16.0.6	Mark VI Turbine control panel (Approx Dimension 3600(W)X805(D)X2325(H))	No	1				
16.0.7	Inlet Air Filter Panel	Set	2				
16.0.8	Electronic Water Level Indicator (EWLI)	Set	1				
16.0.9	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	7				

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SL. NO.	DESCRIPTION	UOM	QTY	Unit Rate In Figure(In Rs)	Unit Rate In Words (In Rs)	Total Amounts (In Rs)	Applicable Terms of Payments
16.0.10	Printers (80/132 col Dot Matrix, A3 Inkjet, A3 Laserjet, etc)	Set	7				
16.0.11	Computer furniture for all Servers, PCs, Printers	Set	1				
16.0.12	Plant Control Desk / CRT desk	Set	1				
16.0.13	125V Battery Charger,Battery with DCDB	Set	1				
16.0.14	230/240 V UPS System and battery with ACDB	Set	1				
16.0.15	SWAS Analyzer with Sample Handling system for HRSG	Set	1				
16.0.16	SWAS Sample handling system for BOP	Set	1				
16.0.17	Vibration monitoring system for Gas Turbine	Set	1				
16.0.18	Humidity Monitoring system	Set	1				
16.0.19	Hazardious Gas Monitoring System(Approx. Dimnsion 1610(L)x3610(W)x1780(H) mm,wt-40kgs	Set	1				
16.0.20	PLC System for ESD/BMS	Set	1				
17.0	<b>Instruments/Devices including sensors/Cells/Probes etc</b>						<b>18.0</b>
17.0.1	Air filter regulators / Lubricators (1/4", 1/2", 1", 0-6KG, 0-10 KG)	No	29				
17.0.2	Solenoid valves (3 way, AC/DC, 1/4", 1/2", 1", NPT/BSP, single/dual coil)	No	60				
17.0.3	Pressure Switch / DP Switch / DP indicating switch	No	42				
17.0.4	Temperature Switch / Thermostat	No	15				
17.0.5	Pressure / DP / Flow (DP type) / Level(DP)/Temparure - Transmitter	No	144				
17.0.6	Level Transmitter (displacer type/RADAR Type)	No	7				

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17.0.7	Speed transmitter	No	6				
17.0.8	Pressure Gauge / DP gauge/DP Indicator	No	79				
17.0.9	Temperature Gauge (all types)	No	34				
17.0.10	Level Indicator / Level Gauge	No	10				
17.0.11	Flow indicator / Flow Gauge / Mass Flow meter/Acoustic flow meter (coal)/Gas Flow Meter-Coriolis Type.	No	3				
17.0.12	Thermocouple / RTDs with thermowell (all types) along with converters wherever applicable	No	66				
17.0.13	MTM Thermocouple upto 17 M length	No	22				
17.0.14	SOx/NOx/CO Analyzer (Insitu type)	No	1				
17.0.15	DC Starter Box(900(w)x450(d)x1675(h)mm) for DC Scanner fan	No	1				
17.0.16	Oil Flow Meter	No	1				
17.0.17	Flame Scanner	No	13				
17.0.18	Linear Voltage Differential Transformer	Set	10				
17.0.19	GT /Gas Ignitors	No	13				
17.0.20	Gas Cromotograph System	Set	1				
17.0.21	Fire detector(Hi Temp) 325F,125V AC/DC	No	4				
17.0.22	Diaphram seal Diff Pressure Transmitters	No	15				

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18.0	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
18.0.1	Electrical regulating drives: (Valve, damper, scoop)	No	3				
18.0.2	Pneumatic regulating drives: (Valve, damper) incl Burner tilt	No	32				
18.0.3	Commissioning of Hydraulic actuators	No	2				
18.0.4	Open/Close type pneumatic gates / dampers / valves	No	50				
18.0.5	Only healthiness checking of embedded RTD / T/C	No	150				
18.0.6	Limit Switches (checking and adjusting only).	No	40				
19.0	Miscellaneous items (items not covered under above heads)						111.0
19.1	HART Management syatem	Set	1				
<b>TOTAL AMOUNT IN FIG (In Rs)</b>							
<b>TOTAL AMOUNT IN WORDS Rs.....</b>							