



BHARAT HEAVY ELECTRICALS LIMITED

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ENQUIRY
(INDIGENOUS)

(A Government of India Undertaking)
HIGH PRESSURE BOILER PLANT
PURCHASE DEPARTMENT - Fossil Boilers
THIRUCHIRAPALLI - 620014
TAMILNADU (INDIA)

PHONE : 91-44-28158821
GRAMS : BHARATELEC
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E-mail :
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OFFICE COPY	Collective No.	Enquiry Date	Due Date For Quotation
	2680700039	09.08.2007	17.09.2007
Please quote Enquiry No, Date and due date in all correspondences. This is only a request for quotation and not an order			

Item	Description	Unit	Quantity	Delivery Quantity	Schedule Date
10	DESIGN, ENGINEERING, SUPPLY, ERECTION, TESTING AND COMMISSIONING OF FURNACE MODIFICATION SYSTEM FOR LPG FIRING OF CONTINUOUS DISCHARGE FURNACE AT BAY - 2 BUILDING -50 AS PER THE ENCLOSED ANNEXURE GIVEN BLOW ANNEXURE - I SPECIFICATION / QUALIFYING CRITERIA(16Pages) ANNEXURE - II TERMS & CONDITIONS (a,b,c,) ANNEXURE - III PRICE FORMAT MODIFICATION OF FURNACE FIRING SYSTEM	AU	1.000	1.00	01.10.07

General Note:

1. PLEASE SUBMIT YOUR DETAILED OFFER AS TWO PART BID SYSTEM I.E. TECHNICAL OFFER IN ONE SEALED COVER AND COMMERCIAL OFFER IN ANOTHER SEPARATE SEALED COVER.
2. POINT TO POINT CONFIRMATION TO BHEL'S SPECIFICATION AND COMMERCIAL TERMS AND CONDITIONS SHOULD BE PROVIDED IN THE ENCLOSED SHEET.

Enclosures:

"LD clause has to be confirmed without fail."

PR Links

Material.	PR.No	PR.Item.	Quantity	Acc. Assign	Customer Number
	24495809	00020	1.000	/000000	

list of suppliers

RFQ-6600003871

The offers should reach us before the time of opening of tenders.
The offers will be opened at 14:30 hours on the due date in the presence of the tenderers who may like to be present.
Late tenders are liable to be rejected.

Yours faithfully,
For BHARAT HEAVY ELECTRICALS LIMITED


MANAGER / PURCHASE
(Fossil Boilers)

SPECIFICATION CUM COMPLIANCE CERTIFICATION FOR LPG CONVERSION OF CD FURNACE

SCOPE: DESIGN, ENGINEERING,SUPPLY, ERECTION, TESTING & COMMISSIONING OF FURNACE MODIFICATION SYSTEM FOR LPG FIRING WITH SPECIFICATION AS BELOW

Sl. No.	DESCRIPTION	SPECIFICATION	BIDDER'S OFFER	DEVIATIONS/ REMARKS
1.0	PURPOSE			
1.1	Purpose:	At present the Continuous Discharge Furnace is fired with Producer gas as the fuel. It is intended to modify the furnace suitable for firing with LPG as the fuel.		
1.2	Place of Installation	Bay 2 of Tubular Production Shop (Building No.50) where the furnace exists at present.		
2.0	DETAILS OF EXISTING FURNACE			
2.1	Furnace Configuration	Roller Hearth type with closed chamber and with vertical lifting doors partially open depending upon job height in continuous discharge mode.		
2.2	Roller Conveyor System	The Roller conveyor system comprises of an Infeed (Charge) Table, Furnace roller hearth and a discharge conveyor. Drive is transmitted to the rollers by means of standard roller chain and sprocket arrangement.		
2.3	Length of the Furnace	10700 mm		
2.4	Inner Chamber Width	3800 mm		
2.5	Inner Chamber Height	650 mm above roller		
2.6	No. of Zones for temperature control	4		
2.7	Maximum Design temperature	800 deg. C		
2.8	Maximum Charge temperature	780 deg. C		
2.9	Operating temperature	780 deg. C		
2.10	Type of temperature control	PID CONTROL		

Sl. No.	DESCRIPTION	SPECIFICATION	BIDDER'S OFFER	DEVIATIONS/ REMARKS
2.11	No. and capacity of each Burner	36 nos./ 160 M ³ /hr.		
2.12	No. and capacity of each air blower	2 nos. blowers (No standby). Capacity of blower required for LPG firing to be checked and confirmed by the vendor Air delivery of 5200 m ³ /hr. at 600 mm of water column pressure		
2.13	Chimney	One number top connected chimney of 550 mm diameter, with 50mm thick refractory insulation and of about 20m height above ground. Manually operated damper is provided in the chimney.		
3.00	APPLICATION AND DETAILS OF JOBS HANDLED IN THE FURNACE			
3.1	Application	Heat treatment of Tubular coils and panels. (Stress Relieving and Annealing Cycles)		
3.2	Operating charge temperature	760 +/- 10 deg. C		
3.3	Temperature uniformity required during soaking	+/- 10 degree C		
3.4	Rate of heating	35 deg.C to 200 deg. C per hour		
3.5	Jobs	Tubular coils and panels		
3.6	Tube material	Carbon steel, low and high alloy steel, stainless steel		
3.7	Tube diameter	31.8 to 76.1 mm		
3.8	Tube wall thickness	2.4 to 15 mm		
3.9	Panel and coil length	24000 mm max.		
3.10	Panel and coil width	3500 mm max.		

ENQUIRY Sl. No.	No.2630700039 DT 09/08/07 DESCRIPTION	SPECIFICATION	BIDDER'S OFFER	ANNEXURE - DESCRIPTION REMARKS
3.11	Output capacity of furnace	4.6 tons / hr.		
4.0	SCOPE OF CONTRACT			
4.1	The scope of Supply/ work for the Furnace modification for LPG fuel firing system covered under this specification shall include but not limited to the following:			
4.2	Combustion System			
4.2.1	The furnace has to be provided with the required number of high velocity Gas fired nozzle-mix burners suitably designed for firing LPG. The positioning of the burners inside the furnace should be designed to create high degree of turbulence in the furnace atmosphere, increased convection heat transfer co-efficient, resulting in better uniformity and thermal efficiency even at lower temperature.	Vendor to Confirm		
4.2.2	Fuel	LPG / Natural Gas		
4.2.3	LPG Gas Pressure	Vendor to Specify		
4.2.4	Max. required flow rate of LPG	Vendor to Specify		
4.2.5	Burners Type (Vendor to furnish make, model no. and technical details of burners)	High Velocity Gas fired Burner		
4.2.6	Number of rows and arrangement of Burners (Schematic drawing should be furnished with the offer)	Vendor to Specify		
4.2.7	Number of Burners (Calculation details should be submitted with the offer)	Vendor to Specify		
4.2.8	Burner Rating	Vendor to Specify		

ENQUIRY NO: 2630700039 DT: 09/08/07.

SL No.	DESCRIPTION	SPECIFICATION	BIDDER'S OFFER	ANNEXURE - 1 SPECIFICATIONS/ DEVIATIONS/ REMARKS
4.2.9	Flame length	Vendor to Specify		
4.2.10	Type of Temperature Control	PID, Auto/Manual		
4.2.11	No. of Temperature Control Zones	Four		
4.2.12	Furnace Efficiency	Vendor to Specify		
4.2.13	Combustion air fan			
a)	Combustion air fan of suitable capacity (including excess air) has to be provided to ensure proper combustion	Vendor to Confirm		
b)	Air Flow	Vendor to Specify		
c)	Air Pressure	Vendor to Specify		
d)	Power Rating in KW	Vendor to Specify		
e)	Type of Blower	Vendor to Specify		
f)	Make of Blower	Vendor to Specify		
g)	2 Nos. of Blowers (one as standby)	Vendor to Confirm		
4.2.14	Induced Draught (ID) Fan:			
a)	ID fan of suitable capacity has to be provided before the stack to ensure proper combustion	Vendor to Confirm		
b)	Air Flow	Vendor to Specify		
c)	Air Pressure	Vendor to Specify		
d)	Power Rating in KW	Vendor to Specify		
e)	Type of Blower	Vendor to Specify		
f)	Make of Blower	Vendor to Specify		
g)	2 Nos. of Blowers (one as standby)	Vendor to Confirm		

ENQUIRY	DESCRIPTION	SPECIFICATION	BIDDER'S OFFER	DEVIATIONS/ SPECIFICATION REMARKS
4.2.15	The FD fan and ID fan have to be suitably sized to ensure a balanced draught system	Vendor to Confirm		
4.2.16	A standby fan each for both FD and ID system has to be provided	Vendor to confirm		
4.2.17	Dampers:			
a)	Damper has to be provided after the furnace hearth and before the stack in the flue gas path to regulate draught	Vendor to Confirm		
b)	Provision should be there to operate the damper in the manual mode also.	Vendor to Confirm		
4.2.18	Refractory Lining: The existing refractory lining inside the furnace to be removed and re-lining to be done as below. Complete stud welding to be done. Stud material to be SS 304.			
a)	Refractory Lining: (For roof and door) Ceramic Fiber blanket lining of suitable density and thickness to ensure that the skin temperature of the furnace does not exceed 80 deg. C.	Vendor to Specify		
b)	Blanket Thickness	Vendor to Specify		
4.2.19	Refractory lining: (For Side Walls) Lining for min 350 mm thickness of IS-8 grade standard fire bricks / Hot face insulation bricks/ Hysil blocks to be provided in the side walls to ensure the furnace skin Temperature on the side walls does not exceed 80°C. The pattern of refractory lining for the furnace should be mentioned in the offer.	Vendor to Confirm		
4.2.20	Burner Blocks:	60% High Alumina Refractory.		
4.3	Furnace Front and Back Doors:	Existing doors with drive system to be used.		

ENQUIRY SI. No.	No:2630700039 DT.09/08/07. DESCRIPTION	SPECIFICATION	BIDDER'S OFFER	ANNEXURE - DETAILED REMARKS
4.4	Roller Conveyor System:	Existing Conveyor system with drive mechanism to be used		
4.5	Flue duct	Existing flue duct to be used		
4.6	Stack	Existing stack to be used. The stack to be inspected for any damages. Inspection cover to be provided in the bend portion of the stack. Existing damper to be corrected. A pilot hole provision to be made for flue gas analysis.		
4.7	Pipelines and Valves:			
4.7.1	BHEL will provide LPG at one point near the furnace. All piping, fittings, valves etc. for LPG to the furnace gas control valves and to other points is in the scope of the Vendor.	Vendor to Confirm		
4.7.2	All air piping, fittings, valves, etc. from the fans to the control valves and to other points is in the scope of the vendor.	Vendor to Confirm		
4.7.3	Required valve for control of gas and air is in the scope of the Vendor	Vendor to Confirm		
4.8	Instrumentation and Control System:			
4.8.1	PLC-PC based instrumentation with SCADA software system (Complete details to be provided with the offer)	Vendor to Confirm		
4.8.2	Furnace temperature control (4 zones)	Vendor to Confirm		
4.8.3	Furnace over-temperature control (4 zones)	Vendor to Confirm		
4.8.4	The system shall comprise but not limited to the following:	Vendor to Confirm		
a)	Thermocouples for 4 Zones / 2 thermocouples per zone with temperature transmitter	Vendor to Confirm		
b)	Suitable rated modulating motors/ control elements for 4 zones	Vendor to Confirm		
c)	Ratio based zonal control system for temperature control	Vendor to Confirm		

ENQUIRY Sl. No.	No.2630700039 DT.09/08/07 DESCRIPTION	SPECIFICATION	BIDDER'S OFFER	ANNEXURE - DESCRIPTION REMARKS
d)	8 point micro processor based temperature recorder (Chino/Honeywell/Yokogawa make)	Vendor to Confirm Optional		
e)	Pressure, flow transmitters for gas and air control elements	Vendor to Confirm		
f)	Furnace pressure transmitters and control elements	Vendor to Confirm Optional provision		
g)	Pressure switches and regulators	Vendor to Confirm		
h)	Instruments cables and compensating cables	Vendor to Confirm		
i)	Piping	Vendor to Confirm		
j)	Junction boxes	Vendor to Confirm		
k)	Any other requirement to complete the system	Vendor to Specify		
4.8.5	The PID control loop to be constituted within the PLC through intelligent software PID block.	Vendor to Confirm		
4.8.6	It should be possible to view the value and status of zone temperature on the PC screen of the furnace workstation.	Vendor to Confirm		
4.8.7	For excess temperature control of respective zone, it should be possible to set the limit value of each zone in PC. In case the zonal temperature overshoots the maximum set value, it should control the respective zone temperature along with raisal audio visual alarm. The detail of alarm summary should be logged in PC.	Vendor to Confirm		
4.8.8	PLC should be complete with CPU, power supply module, I/O module, Digital input/Output cards, analog cards, load process facility and PLC panel			
4.8.9	Other features required:	Vendor to Confirm		
	a) Temperature data logging			
	b) Over view of furnace process			
	c) Fault annunciation page and alarm logging			
	d) Temperature Vs Time programming profile generation			
	e) Reports			

ENQUIRY Sl. No.	No:2630700039 DI 09/08/07 DESCRIPTION	SPECIFICATION	BIDDER'S OFFER	ANNEXURE - DEMONSTRATION REMARKS
	f) Gas flow measuring system: additional flow indicator at site.			
	g) Safety system and alarm indication of gas pressure high / low, air pressure high /low, excess zonal temperature and burner flame failure	Vendor to confirm		
4.8.10	Separate panels should be provided for Instruments, PLC-PC system	Vendor to Confirm		
4.8.11	PI diagram, schematic circuit diagram for instrument control system to be submitted for final approval	Vendor to Confirm		
4.8.12	Work Station PC and Printer: PC, UPS and Printer shall be provided by BHEL. Suitable interface and required software should be supplied by the Vendor	Vendor to Confirm		
4.8.13	Hot standby for PLC: PLC Hot standby configuration to be with CPU with bi-directional changeover .In case master CPU fails, the slave CPU to be take over as bump less transfer. Alternatively the master CPU should take over in case of the failure of slave CPU.	Vendor to Confirm		
4.8.14	Gas Train consisting of filter, pressure regulator, pressure gauge with isolation, "minimum pressure" switch, slam-shut safety shut-off valves, vent line, digital gas flow meter with totalize, and other valves as required for safe operation shall be provided (Complete details of the gas train including make, models of valves etc shall be provided along with the offer)	Vendor to Confirm		
4.8.15	Burner purge cycles with adequate purging time for safe operation shall be provided	Vendor to Confirm		
4.8.16	Manual Gas Shut Off Valve shall be provided apart from the safety shutoff valve in the gas train	Vendor to Confirm		

Sl. No.	DESCRIPTION	SPECIFICATION	BIDDER'S OFFER	DEVIATIONS/ REMARKS
4.8.17	Furnace control schematic shall be submitted along with the offer	Vendor to Confirm		
4.9	Electrical System:			
4.9.1	Required Motor Control Centers shall be provided for control of all fans, drives and blowers including the existing ones.	Vendor to Confirm		
4.9.2	All Power and control cables, connections, circuit breakers etc. required for connecting BHEL's power supply point to different parts of the machine/control cabinets/ field elements, shall be the responsibility of vendor. The Cables should be of Copper Conductor .	Vendor to Confirm		
4.9.3	Push button Control Station shall be provided near the furnace for all manual operations and suitably interconnected with main panel	Vendor to Confirm		
4.9.4	Local push button stations shall also be provided for roller conveyors, fans and door drives (entry and exit of the furnace) and suitable interconnected with the main panel	Vendor to Confirm		
4.9.5	Tropicalization: All electrical / electronic equipment shall be tropicalized.	Vendor to Confirm		
4.9.6	All Electric enclosures shall have IP 54 protection	Vendor to Confirm		
4.9.7	All electrical components in the cabinets should be mounted on DIN Rail	Vendor to Confirm		
4.9.8	415V +/- 10%, 50HZ +/-3 Hz, 3 Phase AC (3 wire system without neutral) power supply will be provided by BHEL at a single point near the furnace in the control room.	Vendor to Confirm		

ENQUIRY No.2630700039 D	DESCRIPTION	SPECIFICATION	BIDDER'S OFFER	ANNEXURE	DEVIATIONS/REMARKS
4.9.9	All electrical and electronic panels including operator's panel should be provided with fluorescent lamps for sufficient illumination and power receptacles of 220Volts, 5/15 Amp AC. All adaptors / receptacles should have compatibility with Indian equivalents. (Suitable transformer should be used for 220V supply)	Vendor to Confirm			
4.9.10	Motors & other electrical components shall conform to IEC or Indian Standards	Vendor to Confirm			
4.9.11	Vendor should ensure the proper earthing for the furnace and its peripherals.	Vendor to Confirm			
4.9.12	The existing Siemens make 10 HP variable frequency drive for the feed to be accommodated in the new panel and interfaced suitably with required wiring. Existing standalone control panel to be interphased with the new control system.	Vendor to Confirm			
4.9.13	For Combustion air blower motorized damper at the discharges to be provided	Vendor to Confirm			
4.10	Safety Arrangements:				
4.10.1	Following safety features in addition to other standard safety features should be provided on the furnace.	Vendor to Confirm			
4.10.2	Furnace should have adequate and reliable safety interlocks / devices to avoid damage to the furnace, work piece and the operator due to the malfunctioning or mistakes. Furnace functions should be continuously monitored and alarm / warning indications through lights/ alarm number with messages (on PC display and panels) should be available.	Vendor to Specify			
4.10.3	A detailed list of all alarms / indications provided should be submitted by the Vendor.	Vendor to Specify			

ENQUIRY Sl. No.	No.2630700039 DT 09/08/07 DESCRIPTION	SPECIFICATION	BIDDER'S OFFER	ANNEXURE - DETAILED REMARKS
4.10.4	All the pipes, cables etc. should be well supported and protected.	Vendor to Confirm		
4.10.6	Emergency Switches should be provided at suitable locations.	Vendor to Confirm		
4.11.0	Spares:			
4.11.1	Itemized breakup of mechanical, pneumatic, electrical and electronic spares used on the furnace systems in sufficient quantity as per recommendation of Vendor for 2 years of trouble free operation on three shifts continuous running basis should be offered by vendor. (Unit price for each item of spare should be offered.)	Vendor to Confirm		
4.12	Documentation: Three sets of following documents (3 Hard copies,) in English language should be supplied along with the machine.	Vendor to Confirm		
4.12.1	Operating & maintenance Manual	Vendor to Confirm		
4.12.2	The O&M Manual should contain the following	Vendor to Confirm		
	a. GA Drawing of furnace			
	b. Electrical Wiring Drawings – Power & Control Circuits			
	c. PLC Ladder Diagrams (Soft Copy) with Flash Memory Card.			
	d. PLC Ladder Diagrams (Hard Copy)			
	e. Complete Printed Circuit Board Schematics indicating check points (Test Points) for Electronic Controls			
	f. Alarm Log, Error Code, Error Messages & Remedies and On-Line Fault Diagnostics to be provided.			
	g. Trouble Shooting Chart for Main and all Sub-Systems			

Sl. No.	DESCRIPTION	SPECIFICATION	BIDDER'S OFFER	DEVIATIONS/ REMARKS
4.12.3	Catalogues, O&M Manuals of all bought out items including drawings, wherever applicable.	Vendor to Confirm		
4.12.4	The vendor shall submit complete Master List of spare parts used along with item part number/ specification/ type, name and address of the spare supplier	Vendor to Confirm		
4.12.5	Three additional sets of all the above documentation on CD	Vendor to Confirm		
4.12.6	Furnace operation related PC Details – Furnace Operating Softwares, Parameters Selection Software, File Handling	Vendor to Confirm		
4.13	Training			
4.13.1	The Vendor shall impart training to BHEL's Operators & Maintenance crew in O & M (Mechanical, Electrical & Control System) after the commissioning, at BHEL for 7 working days	Vendor to Confirm		
4.14	Erection & Commissioning			
4.14.1	Vendor to take full responsibility for carrying out the installation/ erection of the all the sub-systems supplied as part of this contract, start up, testing and commissioning of the furnace & it's controls & all types of other supplied equipment. The vendor shall arrange required manpower & tools for the same.	Vendor to Confirm		
4.14.2	Removal of the existing sub-systems of the furnace that are replaced under the scope of this contract like air lines/ producer gas lines/ valves/ cables/ control panels/ instrumentation items/ rollers/ refractory materials etc. and handing over to BHEL stores	Vendor to Confirm		

ENQUIRY No.2630700039	DESCRIPTION	SPECIFICATION	BIDDER'S OFFER/ANNEXURE - I	DEVIATIONS/ SPECIFICATION REMARKS
4.14.3	Service requirement like power, air & water and erection consumables like oxygen/ acetylene cylinders, welding electrodes, kerosene, grease shall be provided by BHEL free of cost. BHEL will also provide crane for handling and lifting during erection at site free of cost.	Vendor to Confirm		
4.14.4	BHEL shall provide LPG at required pressure and flow as fuel for the furnace at one point near the furnace.			
4.14.5	The Vendor should bring tools, Tackles, welding machines, cutting torches and other necessary equipment required to carry out all above activities.	Vendor to Confirm		
4.14.6	The Vendor shall bring commissioning spares required for commissioning of the machine within stipulated time	Vendor to Confirm		
4.14.7	Schedule of Erection and Commissioning shall be submitted with the offer.	Vendor to Confirm		
4.15	Furnace Inspection and Acceptance			
4.15.1	The furnace sub-systems shall be offered for inspection to BHEL for completeness of supply at supplier's works prior to dispatch			
4.15.2	The furnace shall be tested by the vendor for its performance prove-out as per BHEL Specifications, at BHEL after erection and commissioning.			
4.15.3	The various furnace cycles such as stress relieving shall be tested and proved utilizing 2 cycles in each category under no-load and load condition.			
4.16	Painting			
4.16.1	For Furnace & Stack			
	a) Primer Coating	One coat of primer painting at vendor's works and one coat of primer after erection		

SL No.	DESCRIPTION	SPECIFICATION	BIDDER'S OFFER	DEVIATIONS/ REMARKS
	b) Final Painting	Two coats of heat resistant aluminum paint		
4.16.2	For Fans, Control Panel	Apple Green colour paint		
4.16.3	Air & Gas Pipelines	White & Yellow or as per instructions of BHEL and with indication of direction of flow marked at suitable intervals		
5.0	Experience			
5.1	Vendor to submit previous experience in executing similar kind of job	Vendor to confirm		
5.2	Delivery Period (from the date of P.O.)	Vendor to confirm		
5.3	Prior visit to our premises	Vendor to visit and assess the work content and site location before submitting their offer		
6.0	Packing			
6.1	Rigid packing for items like fans, blowers, drives, electric / electronic panels and controls and such other items susceptible to damage during transit			
7.0	Guarantee			
7.1	12 months from the date of commissioning and acceptance at BHEL works			

ANNEXURE - I (PR.No:24495809)		
QUALIFYING CRITERIA FOR THE MODIFICATION OF CONTINUOUS DISCHARGES FURNACE IN BAY 2 BLDG.50 FROM PRODUCER GAS TO LPG		
SECTION - I		
S. No.	PARTICULARS	VENDOR'S RESPONSE
1	Only those vendors, who have executed LPG conversion works in furnaces of volume 20M³ or above and operating temperature of 800°C (or) supplied and commissioned at least one Continuous Discharge Furnace for max furnace temperature of 800 °C or higher in the past should quote. The vendor should submit the following information about the companies where referred furnace(s) have been supplied or converted into LPG firing for qualification of their offer. a. Name of the customer / company where referred furnace is installed. b. Complete postal address of the customer c. Month and Year of commissioning d. Application of the furnaces supplied / converted e. Name and designation of the contact person of the Customer. f. Phone, FAX no. and email address of the contact person of the Customer g. Performance certificate from the customers regarding satisfactory performance of furnace supplied to them	
2	Offers of only those vendors who meet the above Qualifying Criteria will be considered for further evaluation	
3	BHEL reserves the right to verify the information provided by vendor. In case the information provided by vendor is found to be false/ incorrect, the offer shall be rejected	
	SECTION - II	
	The vendor has to comply with the following:	
4	Any Additional Data to supplement the manufacturing capability of the BIDDER for the subject equipment.	
5	The BIDDER / VENDOR shall submit the offer in TWO PARTS - Technical [with PART A & PART B] & Commercial and Price Bid.	

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ANNEXURE -I QUALIFYING CRITERIA

6	The Offer shall contain a comparative statement of Technical Specifications given by BHEL and the Offer Details submitted by the Bidder, against each clause. Where details are required, a mere 'CONFIRMED' or 'COMPLIES' or 'YES' or 'NO-DEVIATION' or similar words in the technical comparative statement may lead to disqualification of the Technical Offer.	
7	The BIDDER / VENDOR shall assure a continuous support for SPARES and SERVICE for TEN Years, from the date of commissioning of the equipment at BHEL Works.	
8	The Technical Offer shall be supported by Product Catalogue and Data Sheets in ORIGINAL and complete technical details of 'Bought-Out-Items' with copies of Product Catalogue and Selection Criteria	
9	The Commercial Offer (given with the Technical Offer) shall contain the Scope of Supply and the Un-Priced Part of the Price-Bid, for confirmation	
10	BIDDER has to indicate the Country of Origin for the supply of equipment.	
11	The reference List of Customers shall be accompanied with the details (Phone Number /E-Mail ID) of the CONTACT PERSON for cross reference by BHEL	

CAPITAL PURCHASE**COMMERCIAL TERMS AND CONDITIONS****1.0 QUOTATIONS**

The Bidders shall submit the offer in **THREE INNER ENVELOPES** as indicated below which shall be sealed in one outer envelope.

Envelope I : This sealed envelope should contain the required EMD amount of Rs 2 Lakhs.

Envelope II : This sealed envelope should contain all the copies of technical bid together with un-priced commercial bid. This envelope should be clearly marked **"Part II - Technical and commercial bid"**, indicating Enquiry No., Due Date and Address & Reference of the Bidder.

Envelope III : This sealed envelope should contain **price details**. This envelope should be clearly marked **"Part III - Price bid"**, indicating Enquiry No., Due Date and Address & Reference of the Bidder.

All the three envelopes (Part I,II & III) shall be put in one cover, duly sealed, super scribing as Part I ,Part II and Part III of Enquiry No., due date of opening and the address and reference of the Bidder.

The above offer should reach this office on or before the due date by 14.00 Hrs (IST). Late offers will not be considered.

Tender should not be addressed to any Individual's name but only by designation to:

**SENIOR MANAGER / CAPITAL PURCHASE / MFG
BHARAT HEAVY ELECTRICALS LIMITED
HIGH PRESSURE BOILER PLANT
TIRUCHIRAPALLI - 620 014
TAMIL NADU, INDIA**

Tenders should be free from **CORRECTION AND ERASURES**, Corrections if any, must be attested. All amount shall be indicated both in words as well as in figures. Where there is difference between amount quoted in words and figures, amount quoted in words shall prevail.

Offers should be in **ENGLISH** and accompanied by detailed technical literature, catalogue and detailed dimensional drawings in **ENGLISH** or otherwise, the offers will not be considered.

2.0 PART I (TECHNICAL & COMMERCIAL BID)**2.1 Technical**

This part shall include / indicate the following :

- 2.1.1. Offer should contain complete scope of supply with all technical details, specifications, delivery and other commercial terms and conditions.
- 2.1.2. Point by point confirmation for the Technical Specification enclosed to be provided. if there are any deviation, the same should be clearly specified. Offers received without confirmation to our specification will be liable for rejection.
- 2.1.3. List of customers to whom same or similar equipment have been supplied along with performance certificates to be enclosed.
- 2.1.4. Relevant catalogues to be attached
- 2.1.5. List of spares parts (with part numbers) for two years operation and maintenance should be attached.
- 2.1.6. Information on shipping weight and cubage (length, width & height) to be provided.

2.2 Commercial

This part shall include / indicate the following :

- 2.2.1. Station of despatch
- 2.2.2. Terms of payment
- 2.2.3. Taxes & duties applicable.
- 2.2.4. Delivery Schedule
- 2.2.5. Offer validity
- 2.2.6. A copy of "Un-Priced Part III" i.e., a copy of the Price Bid without the price details to be enclosed.

3.0 PART III (PRICE- BID)

This part should contain the schedule of price particulars and to be co-related to the technical details provided in Part II.

4.0 OPENING OF TENDERS

The part I – EMD would be opened on the tender opening date and if EMD is not furnished the offer will be duly rejected.

The Part II- Technical & commercial bid would be opened on the Tender opening date.

The Part III - Price bid of Technically suitable Bidders alone would be opened. The Technically suitable Bidders would be informed about the tender opening date.

Clarifications if any required by BHEL for Technical evaluation would be sought from Bidders before opening of Part III - price bid.

5.0 GENERAL

5.1. Incomplete offers will not be considered.

5.2. **Fixed price:** Prices quoted by the bidder shall be fixed and not subject to any escalation whatsoever during the period of bid validity and execution of the Purchase Order. A bid submitted with an adjustable price will be treated as non - responsive and rejected. Prices shall be written in words and figures. In the event of difference, the price in words shall be valid and binding. Unit prices shall be considered correct in the event of any discrepancy with regard to total price.

5.3. **Bid currency:** Bidders should submit the prices only in Indian Rupees.

5.4. **Terms of Delivery:** Bidders are required to quote their best delivery period. Bidders should submit their offer for **FOR Despatching station**.

5.5. **Taxes and Duties :** All Taxes and Duties payable as extra to the quoted price should be specifically stated in offers along with CST & TNGST No / Tariff No. etc., failing which the purchaser will not be liable for payment of such Taxes and Duties. Our T.N.G.S.T No. 356005 Dt. 04-04-1995, C.S.T. No. 239383 dt. 11-06-1991 and TIN NO.33243560005..

5.6. **Validity :** The offers for main equipment and spares shall be kept open for acceptance for **120 days (one hundred and twenty days)** from the date of opening of the tender (Part I).

5.7. **Terms of Payment :**

5.7.1. **Indian Bidders**

5.7.1.1. The preferred payment terms are indicated below :

SUPPLY PORTION:

5.7.1.2. 100% payment, within 45 to 90 days, after receipt / acceptance / commissioning of equipment at BHEL, Tiruchi. or

5.7.1.3 80% value of the goods will be paid within 45 to 90 days against dispatch documents negotiated through bank. Balance 20% against submission of supplementary invoice will be paid on acceptance / commissioning of goods and also against remittance of required Security Deposit to BHEL in accordance with the terms of the Contract.

All bank charges are to vendor's account only.

ERECTION & COMMISSIONING PORTION:

5.7.1.4 100% of the Erection / commissioning charges (in case contract involves erection/commissioning) shall be paid only on completion of such erection / commissioning at BHEL and also against remittance of required Security Deposit to BHEL in accordance with the terms of the Contract.

5.8 Liquidated damages : It is clearly understood among the parties to the contract the

“ **Time is the essence of the contract** ”. Therefore, the delivery of the goods specified in the purchase order should be made within the time prescribed. Where the seller supplies or despatches the goods, beyond the delivery period specified the purchaser will have no obligation to accept the goods. If accepted liquidated damages at the rate of 1/2% of the value of goods delayed for each week of delay subject to a maximum of 15% of the order



value will be levied. Liquidated damages @ ½% per week subject to a maximum of 15% of the Erection Charges shall be applicable for delay in the Period for completion of the Retrofitting / Reconditioning work

5.9 Risk purchase : Alternatively the purchaser at his option will be entitled to terminate the contract and to purchase elsewhere at the risk and cost of the seller either the whole of the goods or any part which the supplier has failed to deliver or despatch within the time stipulated as aforesaid or if the same were not available, the best and the nearest available substitute therefor. The supplier shall be liable for any loss which the Purchaser may sustain by reason of such risk purchases.

5.10 Test certificates / Operating and Maintenance manuals : The Bidders shall clearly mention in their offer, that Test Certificates and Operating Maintenance Manuals, etc., as called for in the Technical Specification, in the required number of copies will be provided at no extra cost.

5.11 Cenvat credit : If any Excise Duty is payable, the chapter head / sub-head reference and the rate of the duty should be quoted. If the tenderer is availing CENVAT credit for his input materials, the effect of proforma credit should be passed on to the purchaser.

5.12 Packing and marking : The Supplier shall arrange for securely protecting and packing the stores to avoid loss or damages during transit.

5.13 Purchase preference will be given to CPSUs as per Government guidelines.

5.14 BHEL shall be at liberty to reject or accept any tender, part or in full, at their own discretion and any such action is not liable for any question or claim against BHEL.

5.15 Earnest Money Deposit shall be payable as per the instructions furnished in the Annexure. Otherwise the offer will be rejected.

5.16 Security Deposit shall be payable as per the instructions furnished in the Annexure.

For any queries / clarifications the bidders may contact us through our FAX NO. +91 431 2520719 or through e-mail sdharma@bheltry.co.in

EARNEST MONEY DEPOSIT

Earnest Money is to be paid by the Tenderer either in Cash (as permissible under Income Tax Act), Pay Order (or) Demand Draft drawn in favour of Bharat Heavy Electricals Ltd, Trichirapalli payable at Trichirapalli.

EMD by the Tenderer will be forfeited as per Tender Documents if

- 1) After opening the Tender, the Tenderer revokes his Tender within the validity period or increases his earlier quoted rates
- 2) The Tenderer does not commence the work within the period as per LOI/Contract. In case the LOI/Contract is silent in this regard then within 15 days after award of the Contract.

EMD given by all unsuccessful Tenderers shall be refunded normally within 15 days of acceptance of award of work by the successful Tenderer.

EMD shall not carry any interest.

SECURITY DEPOSIT

The successful Tenderer should pay Security Deposit before start of the work and the Rate of Security Deposit will be as below.

Value of Contract including all Taxes and duties	Rate of Security Deposit
Upto Rs.10 Lakhs	10%
Above Rs.10 lakhs and upto Rs.50 lakhs	Rs.1 Lakh + 7.5% of the amount exceeding Rs.10 Lakhs
Above Rs.50 lakhs	Rs.4 Lakhs + 5% of the amount exceeding Rs.50 Lakhs

Security Deposit may be furnished in any one of the following forms.

- i) Cash (as permissible under the Income Tax Act)
- ii) Pay Order, Demand Draft in favour of Bharat Heavy Electricals Limited, Trichirapalli payable at Trichirapalli
- iii) Local Cheques of Scheduled Banks, subject to realization
- iv) Securities available from Post Offices such as National Savings Certificates, Kisan Vikas Patras etc (Certificate should be held in the name of Contractor furnishing the security and duly pledged in favour of BHEL and discharged on the back)
- v) Bank Guarantee from Scheduled banks / Public Financial Institutions as defined in the Companies Act subject to a maximum of 50% of the total Security Deposit value. The balance 50% has to be remitted either by cash or in the other form of security. The Bank Guarantee format should have the approval of BHEL.
- vi) Fixed Deposit Receipt issued by Scheduled banks / Public Financial Institutions as defined in the Companies Act. The FDR should be in the name of the Contractor, A/C BHEL, duly discharged on the back.
- vii) Security Deposit will also be recovered at the rate of 10% from the running bills. However in such cases at least 50% of Security Deposit shall be paid by the Contractor before start of the work and the balance 50% will be recovered from the running bills.
- viii) EMD of the successful Tenderer shall be converted and adjusted against Security Deposit.

Note: Acceptance of security Deposit against sl.no.(iv) and (vi) above will be subject to hypothecation or endorsement on the documents infavour of BHEL. However BHEL will not be liable or responsible in any manner for the collection of interest or renewal of the documents or in any other matter connected therewith.

Security deposit shall not carry any interest. Security Deposit shall not be refunded to the Contractor except in accordance with the terms of the Contract.

CAPITAL PURCHASE / MM / FB
Bharat Heavy Electricals Limited, Trichirapalli – 620 014
(To be filled and submitted alongwith Technical Bid)

SNo	BHEL Commercial Terms and Conditions	Vendor's acceptance
	EMD for Rs.2,00,000/- shall be payable as per the instructions furnished in the Annexure. Otherwise the offer will not be considered. Cheque / DD No / Cash receipt no & date may be furnished.	
	Security Deposit shall be payable by the successful vendor as per the instructions furnished in the Annexure.	
	Security Deposit will be refunded within 30 days after successful completion of Contract by the successful vendor.	
	Technical confirmation to BHEL's Specification as called for in BHEL Format shall be furnished. If needed additional sheets shall be used.	
	Prices shall be quoted item wise only as per the model format enclosed. An unpriced copy shall be submitted alongwith technical bid wherein the applicable Taxes and Duties shall be clearly specified.	
	Prices shall be quoted on "FIRM PRICE" basis only.	
	Validity of offer shall be for a minimum period of 120 days from the date of Tender opening	
	Delivery period (for supply portion) from the date of Letter of Intent shall be clearly mentioned in the offer.	
	Period for completion of the Retrofitting / Reconditioning work at BHEL shall be clearly specified in the offer	
	Liquidated damages @ ½% per week subject to a maximum of 15% of the order value shall be applicable for delay in deliveries for supply portion.	
	Liquidated damages @ ½% per week subject to a maximum of 15% of the Erection Charges shall be applicable for delay in the Period for completion of the Retrofitting / Reconditioning work	
	Following Risk Purchase clause shall be applicable: The purchaser at his option will be entitled to terminate the contract and to purchase elsewhere at the risk and cost of the seller either the whole of the goods or any part which the supplier has failed to deliver or dispatch within the time stipulated or if the same were not available, the best and the nearest available substitute therefore. The supplier shall be liable for any loss which the Purchaser may sustain by reason of such risk purchases.	
	Submission of Performance Bank Guarantee (PBG): Vendor should provide a performance bank guarantee(PBG) for 10% of the total Purchase order value valid for a period of 12 months from the date of commissioning (or) 18 months from the date of dispatch whichever is later with an additional claim period of 2 months. This PBG shall form one of the documents for effecting payment. The PBG shall be submitted in non-judicial stamp paper value of not less than Rs.80/- issued by any one of the following banks who is a member bank in our consortium of -- banks. 1) State Bank of India, 2) State Bank of Hyderabad, 3) State Bank of Travancore, 4) State Bank of Mysore, 5) Canara bank, 6) Bank of Baroda, 7) Punjab National bank, 8) Deutsche Bank, 9) HDFC Bank, 10) Standard Chartered Bank, 11) Citi Bank, 12) Standard Chartered Grindlays Bank 13) Bank of America and 14) Any one of the Nationalised banks.	

	Payment terms for supply portion: • 100% payment will be made within 45 to 90 days after receipt and acceptance / commissioning of goods at BHEL. (or) • 80% value of the goods will be paid within 45 to 90 days against dispatch documents negotiated through bank. Balance 20% will be paid within 45 to 90 days from the date of acceptance / commissioning of goods against submission of supplementary invoice and also against submission of PBG for 10% of Order value with required validity. All bank charges are to vendor's account only.	
	Payment terms for Erection / commissioning charges: 100% of the Erection / commissioning charges (in case contract involves erection/commissioning) shall be paid only on completion of such erection / commissioning at BHEL and also against remittance of required Security Deposit to BHEL in accordance with the terms of the Contract.	
	The equipment shall be guaranteed for a period of 24 months from the date of commissioning.	
	All Equipments / Services including concerned Personnel for carrying out the erection and commissioning of the Equipment shall be arranged by the vendor. If any Service is availed from BHEL, it is only on chargeable basis unless otherwise specified.	
	The vendor shall provide necessary drawings, Test Certificates and Operating Maintenance Manuals etc., as called for in the Technical Specification, in the required number of copies at no extra cost.	
	Offers should be submitted only in sealed cover superscribing clearly the Enquiry reference and due date.	

It is confirmed that all the terms and conditions stipulated in the Enquiry have been fully understood by us and all clarifications & details have been obtained.

Signature & Office seal of the vendor

CBF113427



BHEL Enquiry No. & Date

Vendor's Offer Ref No. & Date

MODEL PRICE BID FORMAT FOR INDIGENOUS VENDORS

Sl No.	Description	Unit	Qty	Rate in Rs	Value in Rs
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Total Ex-works Value in Rs
Add Packing & Forwarding Charges if extra
FOR- Despatching Station Value in Rs

% of Excise Duty (If Extra or If inclusive)

% Sales Tax - CST against "C" Form (If extra)
% Sales Tax - CST With out "C" Form (if extra)

% Sales Tax - VAT (if extra or Inclusive)

Approximate Freight Charges in Rs
Approximate Transit Insurance Charges in Rs

Installation / Commissioning Charges in Rs
% Service Tax if applicable extra

Consignment Package Details

Approximate Net / Cross Weight in Kgs

Dimension of Consignment

Signature & Seal of Vendor

NOTE:

The Price Bid should be submitted strictly in line with the above FORMAT