



An ISO 9001
Company

Bharat Heavy Electricals Limited

(High Pressure Boiler Plant)

Tiruchirappalli – 620014, TAMIL NADU, INDIA

MATERIALS MANAGEMENT / CAPITAL EQUIPMENT

ENQUIRY	Phone: +91 431 257 70 49 Fax : +91 431 252 07 19 Email : csguna@bheltry.co.in Web : www.bhel.com
----------------	---

	Enquiry Number:	Enquiry Date:	Due date for submission of quotation:
	2620900202	18.09.2009	31.10.2009

You are requested to quote the Enquiry number date and due date in all your correspondences. This is only a request for quotation and not an order.

Please note that under any circumstances both **delayed offer** and **late offers** will not be considered. Hence vendors are requested to ensure that the offer is reaching physically our office before 14.00 hrs on the Date of **tender opening**.

Item	Description	Quantity	Delivery (Item required at BHEL on)
10	Drop Tube Furnace System as per the technical specification & commercial conditions applicable (to be downloaded from web site www.bhel.com or http://tenders.gov.in)	01 No.	31.01.2010

BHEL commercial terms & conditions with Price Bid and Bank Guarantee formats can be downloaded from BHEL web site <http://www.bhel.com> or from the Government tender website <http://tenders.gov.in> (public sector units > Bharat Heavy Electricals Limited page) under Enquiry reference "2620900202".

Tenders should reach us before 14:00 hours on the due date
Tenders will be opened at 14:30 hours on the due date
Tenders would be opened in presence of the tenderers who have submitted their offers and who may like to be present

Yours faithfully,
For BHARAT HEAVY ELECTRICALS LIMITED

Sr.Manager / MM / Capital Equipment

Coal Research Centre

Technical Specifications For Drop Tube Furnace System (DTFS)

Ref: CRC-24/Rev No. 1/ Dt. 09.09.2009

Sheet 1 of 4

SI No	Particulars	BHEL specifications	Bidder's offer [With complete technical details]
1	Confirmation for each point of specification	Vendor is requested to give specific confirmation for each point. Deviations if any shall be clearly indicated.	
2	Ambient Condition	The uncontrolled ambient room conditions are- a) Temperature: 10 to 50 ° C, b) Relative Humidity: 100 % c) Dusty	
3	Scope of Vendor	1. Design, Manufacture, Testing, at vendor's works. 2. Installation & Maintenance manuals, Consumables, Mandatory Spares. 3. Training, Installation, Commissioning & Proving performance at BHEL Trichy. 4. On-site Guarantee, On-site Annual Maintenance Contract.	
4.	Application	To determine devolatilisation and char burnout rates of pulverized coal at a given temperature.	
5.1	Maximum temperature	1500 deg C	
5.2	Operating temperature	For devolatilisation -1000 deg.C. For char burnout -1400 deg C	
5.3	Tube diameter	50 – 65 mm	
5.4	Hot zone residence time of pulverized coal particle	Variable by adjusting the collection probe	

Coal Research Centre

Technical Specifications For Drop Tube Furnace System (DTFS)

Ref: CRC-24/Rev No. 1/ Dt. 09.09.2009

Sheet 2 of 4

5.5	Suggested max. hot zone height	1.25 metres	
5.6	Permissible variation in Temperature along the height of hot zone	+/- 5.0 deg.C	
5.7	Pulverized coal/char injection rate	0.05 – 1.0 gm/min (variable)	
5.8	Type of injection feeder suggested	Brush feeder	
5.9	No. of air injection points along pulverized coal	Two. Primary air or feeder air Secondary air	
5.10	Type of coal/char collection probe	Nitrogen quenched and water cooled and along the heights of the hot zone	
5.11	Type of coal/char collection apparatus	Sintered bronze or equivalent	
5.12	Removal of collected coal/char	Manual by scraping from collection apparatus	
5.13	Quenching of reaction	By nitrogen in the collection probe	
5.14	No. of furnace segment suggested	3 or 4	
5.15	Temperature control for each furnace	To be included by vendor	
5.16	Furnace control panel	To be included by vendor	

Coal Research Centre

Technical Specifications For Drop Tube Furnace System (DTFS)

Ref: CRC-24/Rev No. 1/ Dt. 09.09.2009

Sheet 3 of 4

6	Available power supply	440 V AC/3 phase/50 HZ	
7	Note	<p>Secondary air heating: Provision shall be made at the top furnace for future integration of preheating furnace so that secondary air can be heated to 1000-1100 deg C before admitting to furnace.</p> <p>The injected pulverized coal/char along with primary and hot secondary air at 1000 deg.C is to mix and travel vertically downwards in the hot zone section of the furnace as a streamlined flow at approximately 0.4 m/sec till it reaches the collection probe / apparatus. Thus the maximum length of travel is around 1.25 metres. The DTFS should have provision to adjust the heights of the collection probe in order to vary the residence time of coal / air mixture.</p>	
8	Along with offer the following details in hard copies shall be indicated.	<ul style="list-style-type: none">a) Scope and interconnection diagrams-2 copies.b) Catalogs-2 copies.c) Dimensional details for preparing Civil Engg Drawings-2 copies.d) Power supply requirement.e) Instrument air and compressed air if required.f) Vents and drains if required.g) Space requirement around the equipment.	
9	Installation and Commissioning	The Equipment with all Accessories is to be installed & commissioned at BHEL Works, free of cost, by the service engineer of the supplier.	
10	Performance Prove-Out at BHEL	The Supplier's Service Engineer has to conduct demonstration & calibration of the Equipment with Accessories.	
11	Inspection & Training at Vendor works.	BHEL's Inspection is applicable. To and fro, lodging and boarding charges are in BHEL's account.	

Coal Research Centre

Technical Specifications For Drop Tube Furnace System (DTFS)

Ref: CRC-24/Rev No. 1/ Dt. 09.09.2009

Sheet 4 of 4

12	Training on Operation & Maintenance at BHEL works.	Complete Training for BHEL Engineers is to be given on Operation & Maintenance of the offered equipment at BHEL works, free of cost.	
13	Onsite Performance Guarantee	The Equipment & Accessories (including Bought-Out Items) are to be guaranteed for its performance for a minimum period of one year from the date of performance acceptance at BHEL Works.	
14	Installation and O&M manual in ENGLISH Language	Hard copies—2 Nos Soft copy in CD—1 No	
15	Spares & consumables	Vendor to furnish list of recommended spares & consumables and quote with unit price with validity of 3 years from the expiry of warrantee period.	
16	Annual Maintenance Contract - AMC	The bidder has to quote for labor. Please indicate price for each visit and number of visits per year.	
17	AMC - RESPONSE	The bidder has to furnish / indicate the response time for the service engineer to be at BHEL works, from the time of reporting breakdown through e-mail or telefax.	

QUALIFYING CRITERIA

The BIDDER / VENDOR have to necessarily provide the following details, for making an assessment of the firm's capability and competency.

The bid consists of 3 parts namely Qualifying Criteria, Technical bid and Price bid. Vendor shall submit Qualifying Criteria & Technical bid together in a sealed cover. Price bid shall be in a separate sealed cover. BHEL will consider Price bid only if the Qualifying Criteria & Technical bid is found acceptable.

Name of the product: BHEL uses the title “DTFS” in this document. Please refer Technical Specification attached herewith for further details

S. No.	PARTICULARS	VENDOR's RESPONSE
1.0	The BIDDER / VENDOR shall have a minimum of 2 Years of Continuous Experience in the Design, Manufacture & Supply of “DTFS” Please indicate the actual experience. This is a qualifying criteria.	
2.0	Number of “DTFS” supplied, installed and commissioned till date in India. Please furnish contact person name, address, phone number, fax number and mail id .Please mention that how many are used for coal analysis purpose.	
3.0	Number of “DTFS” supplied, installed and commissioned till date outside India. Please furnish contact person name, address, phone number, fax number and mail id. Please mention that how many are used for coal analysis purpose.	
4.0	Please enclose Performance Certificate from end users for the model quoted.	
5.0	Details of Design Set-Up and Technology Back-Up assured from the PRINCIPAL Equipment Maker.	
6.0	Details on Service-after-Sales set-up in India including the addresses of Agents/Service Centre in India.	
7.0	The BIDDER / VENDOR shall assure a continuous support for SPARES and SERVICES at BHEL Works for 5 Years after expiry of warrantee & AMC period. This is a qualifying criteria.	
8.0	The “Technical Bid” shall have vendor's responses along with Product Catalogue, Data Sheets in ORIGINAL and complete technical details of 'Bought-Out-Items' with copies of Product Catalogue. All Technical & Commercial terms can be here. NO PRICE DETAIL IS ENTERTAINED HERE.	

Coal Research Centre

Ref: CRC Eqpt: QC-A
Rev No. 01/Dt. 09.09.2009
Sheet 2 of 2

9.0	<p>The <u>"Price Bid"</u> shall have Price Part with following details</p> <p>Basic Equipment. All PC hardware and software if applicable All software CDs (1 set) with valid license if applicable. Installation & Maintenance manuals (2 Hard copies & 1 set of CDs) List of spares. List of Consumables. AMC</p>	
-----	---	--

Committee Members	Name & Design.	Signature	Initial
	Kannan K/DGM/CR/CRC		
	Soundara Raj M/AGM/CR		
	Lawrence Dr A /Mgr/Labs		
For Specifications having reference numbers	CRC- 24 /Rev 1	DATE : 09 – 09 –2009	