



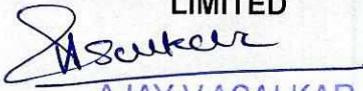
An ISO 9001
Company

Bharat Heavy Electricals Limited

(High Pressure Boiler Plant)

Tiruchirappalli – 620014, TAMIL NADU, INDIA

CAPITAL EQUIPMENT / MATERIALS MANAGEMENT

ENQUIRY		Phone: +91 431 257 7653	
NOTICE INVITING TENDER		Email : skaruna@bheltry.co.in , ajay@bheltry.co.in	
		Web : www.bhel.com	
TWO PART BID Tender to be submitted in two Parts	Enquiry Number: 2631700105	Enquiry Date: 05.12.2017	Due date for submission of quotation: 28.12.2017
You are requested to quote the Enquiry number date and due date in all your correspondence. 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
10	Carbon Sulfur Analyser as per the technical specification & commercial conditions applicable (to be downloaded from web site www.bhel.com or https://eprocure.gov.in/epublish/app)		01 No.
Important points to be taken care during submission of offer. 1. Compliance Form No: TRY/IMP/02 or TRY/IND/02A to be filled and enclosed along with the offer failing which, the offer will not be considered for evaluation. 2. Delivery period required is 4 months from the date of P.O. 3. Commissioning and performance prove out shall be done at BHEL Trichy by the supplier. 4. Time period required for commissioning and performance prove out shall be 2 weeks from the date of intimation by BHEL. 5. EMD for this tender is INR 60,000/- 6. All updates, amendments, corrigenda, etc., (if any), for each tender will be posted only on the above websites from time to time, as and when required, until each tender is opened. There will be no publication of such updates, amendments, corrigenda, etc., through newspapers or any other media. BHEL's General guidelines / instructions (refer MM/CE/GENL/001- No EMD), compliance form and technical specification can be downloaded from BHEL web site http://www.bhel.com or from the Government tender website https://eprocure.gov.in/epublish/app (public sector units > Bharat Heavy Electricals Limited page) under Enquiry reference.			
(This is not an E-tender, please submit your offer in hard copies) 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  AJAY V. ASALKAR Sr. MANAGER MM / Capital Equipment BHEL, Tiruchirappalli - 620 014. Sr. Manager / Capital Equipment / MM	

CARBON SULFUR ANALYSER, Qty. – 1 no.**PART A****Section 1: Qualifying criteria**

The BIDDER has to compulsorily meet the Qualifying criteria indicated in SECTION 1 to get qualified otherwise the technical offer will not be considered.

[The BIDDER is expected to give complete details against each clause in the table given below and wherever necessary an additional sheet may be attached (giving clear reference number) to cover the required details]

S. No.	PARTICULARS	VENDOR'S RESPONSE
1.1	The BIDDER / VENDOR (OEM) shall have a minimum of FIVE Years of Continuous Experience in the field of Design, Manufacture & Supply of Carbon Sulfur analyser. Indicate the actual number of years of experience in the field.	
1.2	Only those vendors (OEMs), who have supplied and commissioned at least TWO numbers of carbon sulfur analyser in the past 5 years (as on the initial date of opening of Tender) should quote.	
1.3	Vendor has to submit at least one Performance Certificate from any of the customers, for satisfactory performance of carbon sulfur analyser model quoted against this tender enquiry or a similar model, for a minimum period of one year (as on initial date of opening tender). Full contact details of the customer from whom the performance certificate is obtained are to be provided. For obtaining the Performance certificate, a suggestive format is provided in Annexure A.	
1.4	BHEL reserves the right to verify the information provided by the vendor. In case the information provided by the vendor is found to be false/ incorrect, the offer shall be rejected.	


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SECTION 2: The BIDDER is requested to provide the following information:

S. No.	PARTICULARS	VENDOR'S RESPONSE
2.1	Number of Carbon Sulfur Analyser supplied and commissioned till date, in India and other countries	
2.2	Year of Launch of the Model quoted against this enquiry.	
2.3	Whether the quoted model is the latest one? Kindly indicate the likely year in which the next model is likely to be launched.	
2.4	A complete reference list of Customers shall be furnished to whom such offered model has been supplied with Qty., Year of commissioning and contact details of the customers.	
2.5	Details of Design Set-Up and Technology Backup available with the OEM.	
2.6	Details on International Standards followed in Design of the Equipment (including Analysis Methodology and Calibration of Equipment).	
2.7	Comprehensive Details on Performance Testing of the Equipment quoted	
2.8	Details of Quality System followed (Kindly furnish the salient aspects of the QA system followed).	
2.9	Details on SERVICE-AFTER-SALES Set-Up in India including the addresses of Agents / Service Centre's in India and Asia.	
2.10	Any Additional Data to supplement the manufacturing capability of the BIDDER.	


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SECTION 3: The BIDDER to note:

The BIDDER/VENDOR has to comply with the following, for accepting the Technical Offer for scrutiny by the Purchaser:

S. No.	REQUIREMENTS	BIDDER'S RESPONSE
3.1	The BIDDER shall submit the offer in Two Parts 1. Technical [with PART A & PART B] & 2. Commercial and Price Bid.	
3.2	The BIDDER'S RESPONSE against each clause in PART A & B of the offer should be filled by the BIDDER compulsorily with complete details. The Offer shall contain a comparative statement of Technical Specifications given by BHEL and the Offer Details submitted by the Bidder, against each clause. A just 'CONFIRMED' or 'COMPLIES' or 'YES' or 'NO-DEVIATION' or similar words in the technical comparative statement may lead to disqualification of the Technical Offer.	
3.3	The BIDDER shall assure a continuous support for Spares and Service for 10 Years, from the date of commissioning of the equipment at BHEL Works.	
3.4	The Technical Offer shall be supported by Product Catalogue and Data Sheets in original and complete technical details / literature on the quoted models. Details of 'Bought-Out-Items' with copies of Product Catalogue and Selection Criteria.	
3.5	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.	


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ANNEXURE A

(On Customer's letter head)

PERFORMANCE CERTIFICATE

1. Supplier of the machine :
2. Make & Model of the m/c :
3. Month & Year of Commissioning :
4. Quantity :
5. Machine Details :
6. Performance of the Machine : Satisfactory / Not Satisfactory
(Strike off whichever is not applicable)
7. After sales service : Satisfactory / Not Satisfactory
(Strike off whichever is not applicable)
8. Any Other remarks :

Date:

Signature & Seal of the Authority
Issuing the Performance Certificate

PART B - Technical Specification for Carbon – Sulfur Analyzer

SL. No.	SPECIFICATION / DESCRIPTION	BIDDER OFFER
1.0	<u>Purpose:</u> Intended equipment is to be used for precise individual measurement of elements - carbon and sulfur content in materials being used in High Pressure Boilers, Industrial Valve Components, Castings, Welding Qualification Test Plates, Procedure Qualification test coupons covering a wide range of materials from plain Carbon Steel, Low Alloy & High Alloy Steels, Quenched & Tempered Steels, Austenitic & Martensitic Stainless Steels, Nickel and Titanium Alloys. Readings shall be made available directly in a PC and shall be able to be recorded.	Bidder to note
2.0	<u>Scope of Supply:</u> Manufacturing, Supply, Erection and commissioning of "Simultaneous carbon & sulfur - Combined Analyzer (Determinator) to meet the purpose mentioned vide 1.0 & as per the specifications given below: -- 1 No. Supply of essential accessories as per the specifications -- 1 Set Supply of essential spares for two years trouble free Operation & Maintenance -- 1 Set Supply of essential consumables two years trouble free Operation -- 1 Set Documents as specified - 3 Set	Bidder to confirm
3.0	<u>Specification of Carbon & sulfur - Combined Analyzer (Determinator):</u> The minimum desired features are enlisted below:	Bidder to confirm
3.1	<u>Principle of Operation:</u> Principle of operation of the equipment shall be based on "High frequency heating combustion in oxygen stream" principle, that is, sample material combusted in a stream of oxygen with a ceramic crucible using RF induction. Liberated carbon and sulfur are being measured using suitable detectors by infrared absorption method.	Bidder to confirm
3.2	<u>Design Base:</u> This should be a precise carbon and sulfur Analyzer. The Determinator with built in induction furnace & Windows based OS.	Bidder to confirm


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PART B - Technical Specification for Carbon – Sulfur Analyzer

SL. No.	SPECIFICATION / DESCRIPTION	BIDDER OFFER
3.3	Sample Size: Weight of sample in grams that can be handled -1 gram nominal.	Bidder to confirm
3.4	Analysis Time: Analysis time of carbon and sulfur in 1 no. of sample in a single run shall be 40 – 60 seconds.	Bidder to Specify
3.5	Measuring range for 1g sample Carbon: 2.0 ppm to 6.0% Sulfur: 2.0 ppm to 1.0%	Bidder to Specify
3.6	Sensitivity (minimum readability): Shall be 0.01 ppm for carbon and sulfur	Bidder to specify
3.7	Accuracy/ precision: For the entire (both low and high) range of measurement must be Carbon: ± 1.0 ppm or 1.0% RSD Sulfur: ± 1.0 ppm or 1.5% RSD	Bidder to Specify
3.8	Detection method:	
3.8.1	Carbon and sulfur measurement: Non-Dispersive Infrared Detection (NDIR) using non dispersive infrared cells.	Bidder to Specify
3.8.2	Approved methodology: Instrument shall conform to approved ASTM methodologies in respect of measurement of Carbon & Sulfur by NDIR technology.	Bidder to Specify
3.8.3	Stabilisation time of detector from equipment switched on time is 30 minutes (maximum)	Bidder to Specify
3.8.4	Carrier gas should flow to detector at the analysis time only. Otherwise gas flow must be stand by or shut down by solenoid valve or other suitable arrangement.	Bidder to Specify
3.8.5	Instrument detectors must be independently heated in order to thermally isolate them from environmental temperature fluctuations.	Bidder to Specify
3.9	Furnace:	
3.9.1	Type of Furnace: Induction furnace with current and power control.	Bidder to Specify


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PART B - Technical Specification for Carbon – Sulfur Analyzer

SL. No.	SPECIFICATION / DESCRIPTION	BIDDER OFFER
3.9.2	Maximum Temperature shall be attained in the furnace in order to analyse various materials as mentioned in Sl. No. 1.	Bidder to Specify
3.9.3	Induction power rating shall not be less than 2.2 kW.	Bidder to Specify
3.9.4	Plate current shall be up to 500mA.	Bidder to Specify
3.9.5	Oscillatory frequency: 18MHz minimum	
3.9.6	In built automatic cleaner for combustion zone shall be provided to enable the removal of dust from filter. Dust shall be collected in a separate container/ chamber supplied with equipment.	Bidder to specify
3.9.7	Instrument should support barometric pressure correction.	
3.10	Chemical reagents: List of chemical reagents applicable for analysis.	Bidder to Specify
3.11	Gas requirements: List of gases applicable for analysis and consumption per analysis	Bidder to Specify
3.12	Carrier gases: Details of carrier gases, operating pressure, flow rate and purity requirements.	Bidder to Specify
3.13	Incoming carrier gas purifier shall be provided along with instrument for improved reliability of carbon measurements.	Bidder to Specify
3.14	Functional requirements:	
3.14.1	Automatic diagnosis system, leak check function, graphic data magnification and demagnification.	Bidder to confirm
3.14.2	Analysis navigation for sample test condition, troubleshooting navigation, maintenance navigation.	Bidder to confirm
3.15	Calibration:	
3.15.1	Single, Multipoint calibration using standard sample.	Bidder to Specify
3.15.2	Calibration standards for all range of measurement of Carbon and Sulfur in the Steel and cast iron.	Bidder to Specify


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PART B - Technical Specification for Carbon – Sulfur Analyzer

SL. No.	SPECIFICATION / DESCRIPTION	BIDDER OFFER
3.15.3	Calibration procedure and instructions are to be issued.	Bidder to Specify
3.15.4	Details of Calibration Kit, if required. Should be quoted separately in the commercial bid.	Bidder to Specify
3.16	<u>Analyser control & Software:</u> Hardware and Software details being used for the operation, calibration, setting and analysis.	Bidder to Specify
3.16.1	Instrument software must dynamically display average, standard deviation, and relative standard deviation.	Bidder to Specify
3.16.2	The instrument software must contain real-time service diagnostics including ambient charts of instrument temperatures, pressures, and detector signal; manual control of solenoids and switches; automated leak checks; and network and communications diagnostic.	Bidder to Specify
3.16.3	The instrument software must contain an automatic system check that verifies internal network communications, solenoids and switches, system pressures, furnace control, and temperature.	Bidder to Specify
3.17	<u>Test results Display mechanism:</u>	
3.17.1	Test results shall be captured and stored directly in an external/ internal PC. Provision for printing all Carbon and sulfur values of tested samples in a single sheet is required.	Bidder to confirm
3.17.2	PC & HP Laser printer (A4 Size) & its accessories with latest specification – Please provide specifications (to be upgraded if there is an up gradation at the time of supply – without cost implications). Operating System : Windows 7 professional OS or higher configuration Processor details : Intel Pentium i-3 intel@core TM i3 Processor or higher version. Mother board details: Intel make RAM: 4GB Hard disk details: 500 GB SATA hard disk DVD writer Monitor: 17" TFT Multimedia Keyboard, Optical mouse	Bidder to Specify


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PART B - Technical Specification for Carbon – Sulfur Analyzer

SL. No.	SPECIFICATION / DESCRIPTION	BIDDER OFFER
	Interface software: to establish connection between PC and equipment. Data connection (Communication) cable between the Analyser & PC.	
3.17.3	All software shall be original and original CDs should be issued to BHEL.	Bidder to confirm
3.18	<u>Controlled power supply:</u> Suitable power system with inbuilt cooling (10 KVA MINIMUM) and back up accessories for 30 minutes power backup.	Bidder to confirm
3.19	<u>Electronic balance</u> Suitable electronic balance 0-120g, readability 0.1mg, 220VAC50/60HZ single phase including interface cable for the weight transfer to the equipment PC via single click.	Bidder to confirm
3.20	Bidder shall meet the essential requirements stated in Cl. No. 3.1 to 3.9, 3.13 to 3.19 for their quoted model.	Bidder to confirm
4.0	<u>PNEUMATIC SYSTEM:</u> BHEL will provide compressed air at 60 to 70 psi pressure (which is not 100 % dry) at one point near the equipment or nitrogen gas cylinder (99.5% pure). Bidder to provide required pressure regulator / booster and suitable air drier & filter to maintain the air quality as per requirement of the equipment. Minimum two double stage regulators.	Bidder to confirm
5.0	<u>ELECTRICAL SYSTEM :</u>	
5.1	230V $\pm$ 5%, 50Hz, Single Phase AC through a 3 wire system (Phase, Neutral and Protective earthing) Power Supply Source will be provided by BHEL near the equipment. All types of cables, connections, circuit breakers etc. required for connecting BHEL's power supply point to the equipment, shall be the responsibility of Bidder.	Bidder to confirm


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PART B - Technical Specification for Carbon – Sulfur Analyzer

SL. No.	SPECIFICATION / DESCRIPTION	BIDDER OFFER
5.2	Tropicalisation: All electrical / electronic equipment shall be tropicalized. All control cables should be of copper.	Bidder to confirm
5.3	All electrical & electronic control cabinets & panels should be dust and vermin proof and shall have IP 54 protection.	Bidder to confirm
5.4	Bidder should ensure the proper earthing for the machine and its peripherals.	Bidder to confirm
6.0	<u>Essential Spares:</u> Bidder to attach un-priced list (priced list with Unit Rate shall be attached in the commercial offer) of various essential spares to be procured with the equipment for two years of trouble free Operations and Maintenance. Ordering No. and Details/ Specifications of the spares to be mentioned.	Bidder to Specify
7.0	<u>Consumables:</u> Bidder to attach un-priced list (priced list with Unit Rate shall be attached in the commercial offer) of various consumables to be procured with the equipment for 1000 operations. Details / specifications of the consumables like crucibles, filling chemicals, CRM standards and if any other critical consumables for day to day operation shall be provided.	Bidder to Specify
8.0	<u>Optional Accessories:</u> Bidder to attach un-priced list (priced list with Unit Rate shall be attached in the commercial offer) of various Optional accessories to be procured with the equipment to enhance the operating efficiency and features of the offered equipment, over and above those mentioned in the specifications. Details of the accessories to be specified.	Bidder to Specify
9.0	<u>Pre-Dispatch Inspection:</u> The equipment, its accessories, etc shall be offered for inspection and performance prove-out to BHEL Engineers, prior to dispatch.	Bidder to confirm
10.0	<u>Installation & Commissioning, Performance Prove-out & training at BHEL:</u> The equipment, its accessories, etc shall be installed and commissioned at BHEL works by the service engineer of the supplier.	Bidder to confirm


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PART B - Technical Specification for Carbon – Sulfur Analyzer

SL. No.	SPECIFICATION / DESCRIPTION	BIDDER OFFER
	The service engineer has to calibrate the equipment and its accessories by direct and indirect methods and to carry out performance prove-out as per BHEL specifications. The Service Engineer has to impart training to a minimum of 3 BHEL Engineers on the Calibration, Operation, Data processing and Maintenance of the equipment and accessories.	
11.0	<u>Training at supplier's Works:</u> Training is to be given to Two BHEL Engineers on the Calibration, Operation, Data processing and Maintenance of the equipment and accessories at Suppliers Works. Travelling, Boarding & Lodging will be Borne by BHEL. Program details & training venue shall be indicated in the offer.	Bidder to confirm
12.0	<u>Performance Guarantee:</u> The equipment shall be guaranteed for a period of 12 months from the date of commissioning at BHEL works or 18 months from despatch whichever is earlier.	Bidder to confirm
13.0	<u>Service Support requirement:</u> Bidder shall ensure AMC service support facilities in India after the guarantee period, through trained Service personnel in India.	Bidder to confirm
14.0	<u>AMC (Annual Maintenance Contract):</u> The bidder has to quote for AMC under two patterns given below, for a period of Three years after the expiry of original warranty period. (OPTIONAL)	
14.1	<u>AMC - CASE-I:</u> Technical service for Preventive Maintenance, Trouble shooting and Re-commissioning of the equipment excluding the cost of Spares and Consumables (BHEL will not be responsible for the timely availability of Spares and Consumables).	Bidder to Specify
14.2	<u>AMC - CASE-II:</u> Technical service for Preventive Maintenance, Trouble shooting and Re-commissioning of the equipment including the cost of Spares and Consumables (BHEL will not be responsible for the timely availability of Spares and Consumables).	Bidder to Specify
14.3	<u>AMC Response time:</u> The bidder has to furnish / indicate the response time for the service engineer to be at BHEL works from the time of reporting the breakdown through e-mail or tele-fax.	Bidder to Specify


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PART B - Technical Specification for Carbon – Sulfur Analyzer

SL. No.	SPECIFICATION / DESCRIPTION	BIDDER OFFER
14.4	AMC Service Calls: The Bidder has to furnish details on service calls for preventive maintenance (number of calls and intervals) and Break-down maintenance.	Bidder to Specify
15.0	Documents should be submitted along with offer: Apart from the details / documents mentioned above in various clauses, following documents <u>in English language</u> are to be submitted along with this technical offer, for technical evaluation. Catalogues of the Equipment & Accessories Details of bought out items, CRMs with their specifications / catalogues	Bidder to submit
16.0	Documents should be submitted at the time of PDI: Three sets of hard copies and one soft copy in CD, following mentioned documents <u>in English language</u> are to be submitted to BHEL Engineers at the time of Pre Dispatch Inspection: Catalogues of the Equipment & Accessories O&M manuals containing electric schematics, circuit diagrams, PCB drawings, Troubleshooting charts, mechanical sub-assemblies, Bill of materials etc. List of bought out items with their specifications / catalogues.	Bidder to confirm
17.0	<u>Details of the Equipment offered:</u>	
	Make:	Bidder to Specify
	Model:	Bidder to Specify
	Dimensions:	Bidder to Specify
	Weight in Kg:	Bidder to Specify
	Total Connected load in KW:	Bidder to Specify


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