

DETAIL	INFORMATION
Contact Person and Address	M.NALLATHAMBI SENIOR MANAGER / CCDP PURCHASE DEPARTMENT/R&D and CR UNIT – HPBP BHEL, TIRUCHY, INDIA PIN : 620 014
Email	mnthambi@bheltry.co.in
Telephone	0091-431-257 7558, 257 7152
Fax	0091-431-2520696, 2520193
Notification (Reference) No.	2821500014 – CR Dt. 20/06/2015
Tender Title	SUPPLY OF FLUE GAS ANALYSERS
Tender Type	BUY – Two Part
Brief Description	Supply of Flue Gas Analysers as per the specification, qualifying criteria, commercial terms & conditions enclosed
Published in Newspaper	NO
Published On	--
Tender Value in Rs	--
EMD Value - Rs	NIL
Document Cost- Rs	NIL
Date of Issue of Notification -DD/MM/YY	
Date for Closure of Sale of Forms - DD/MM/YY	Not Applicable
Completed Forms to be submitted by - DD/MM/YY	30/07/2015 : 14.00 Hrs IST
Date of Opening for Technical Bids - DD/MM/YY	30/07/2015 : 14.30 Hrs IST

Note:

If the due date of tender opening happens to be a holiday, the tenders will be opened on the next working day.

All clarification may be sought at least seven days prior to tender due date from the undersigned with due written request.

Corrigendum if any, with respect to this tender will be hosted only in the website <http://www.bhel.com> (or) <http://tenders.gov.in>. You are requested to visit the website regularly for updates.

The offer should reach this office on or before the due date & we are not responsible for any postal delay. Late tender will not be considered.



BHARAT HEAVY ELECTRICALS LIMITED

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

2577152

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PHONE : ~~2577388~~
GRAMS : BHARATELEC
FAX NO: 2520696
E-mail: ssraj@bheltry.co.in
Web:

429-002/A

	Enquiry No 2821500014 - CR	Enquiry Date 20.06.2015	Due Date for Quotation 30.07.2015
<p>Please quote Enquiry No, Date and due date in all correspondences. This is only a request for quotation and not an order. Bid should be submitted in two parts. 1.Techno-commercial bid (Part-I) and 2.Price bid(Part-II) in a separate sealed cover and both covers must be placed in a third cover and sealed. Our Enquiry No., Enq. date & Enq. Due date must be written on all three covers.</p>			

Item	Description	Unit	Quantity	Delivery Quantity	Schedule Date
10	FLUE GAS ANALYSER Suitable to measure combustion product of Coal, Oil, Natural gas, Industrial gas product etc,as per the enclosed specification FLUE GAS ANALYSER	NO	1.000	1.00	08.10.15
20	FLUE GAS ANALYSER Suitable to measure combustion product of Coal, Natural gas, Industrial gas product etc,as per the enclosed specification FLUE GAS ANALYSER	NO	1.000	1.00	08.10.15

General Note:

NOTE :

- Offer will be invited in TWO PART BID only (Technical bid and Price bid - Two separate covers- "TECHNICAL BID" Cover and "PRICE BID" Cover).
- If regretted make mention on the top of the reply cover as "REGRETTED".
- LD Clause for delivery has to be confirmed without fail. Otherwise we would assume that you have accepted our LD Clause.
- BHEL preferred payment term is "100% direct Payment after 45 days from the date of receipt and acceptance of the material". This payment term acceptance is essential for consideration of your offer. Offer with advance payment or proforma invoice will not be considered.
- Transport and Delivery at BHEL - shall be Vendor's scope.
- Tender details are also hosted in BHEL Web : www.bhel.com.
- No Revision of prices will be entertained after the tenders are opened.
- Offer validity should be minimum 60 days from the date of opening, otherwise we are not in a position to consider your offer.
- Kindly submit point wise compliance to our Terms & Condition. Otherwise it will presumed that you are accepting BHEL's terms and conditions.
- Test certificate and Guarantee certificate is required.
- Technical specifications are enclosed. Copy of filled and signed technical specification confirmations are to be submitted. Without this


OFFER IS TO BE SENT TO THE FOLLOWING ADDRESS

**AGM / CCDP & MM
Purchase / R&D and CR
CCDP, BHEL
TIRUCHIRAPALLI - 620 014
TAMIL NADU, INDIA**

The offers should reach us 30 minutes before the time of opening of tenders. The offers will be opened at 14.30 hrs on the due date of tender in the presence of tenderers who have submitted their offer and who may like to be present for the tender opening. Late and delayed offers are liable to be rejected.

Yours faithfully,
For BHARAT HEAVY ELECTRICALS LIMITED

S. SUBBURAJ
Manager
Purchase / R&D and CR
Bharat Heavy Electricals Limited
Tiruchirappalli - 620 014


MANAGER / PURCHASE
(FOSSIL BOILERS)
Yours faithfully,



BHARAT HEAVY ELECTRICALS LIMITED

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

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E-mail: ssraj@bheltry.co.in
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2821500014 / 20.06.2015

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offer will not be considered.

12)Qualifying criteria format is enclosed. Copy of filled and signed
Qualifying criteria format is to be submitted. Without this offer will
not be considered.


Enclosures:

"LD clause has to be confirmed without fail."

The offers should reach us 30 minutes before the time of opening of tenders.
The offers will be opened at 14.30 hrs on the due date of tender in the presence of
tenderers who have submitted their offer and who may like to be present for the tender
opening.Late and delayed offers are liable to be rejected.

Yours faithfully,
For **BHARAT HEAVY ELECTRICALS LIMITED**

S. SUBBURAJ
Manager
Purchase / R&D and CR
Bharat Heavy Electricals Limited
Tiruchirappalli - 620 014


MANAGER / PURCHASE
(FOSSIL BOILERS)
Yours faithfully,

**Bharat Heavy Electricals Limited – Tiruchirapalli
COAL RESEARCH CENTRE**

Qualifying Criteria for Gas Analyzers

Flue Gas Analyser:

Flue gas analyser to measure flue gas sample, the components of Oxygen (O₂), Carbon Monoxide (CO), Nitric Monoxide, Sulphur dioxide (SO₂) and Carbon dioxide (CO₂) should be capable of working in a dusty environment with ambient temperature of 5°C-50°C with low / high relative humidity.

Qualifying Criteria:

The BIDDER has to meet the following requirements to get qualified for considering the technical offer

Sl.No.	Requirements	Vendor's Response
1	The uncontrolled ambient room conditions are a) Temperature 5°C to 50°C b) Relative Humidity 20% to 100% c) Power station dusty environment coal/ash	
2	The Technical offer should be supported by product Catalogues & Data sheets. The Technical details of Bought-Out-Items with copies of Product catalogue to the extent possible.	
3	Copy of certificate of 'Distributor Authentication Certificate' given by principle should be produced.	
4	Details on SERVICE-AFTER-SALES set-up in India including the address of Agents/Service centres in South India.	
6	Name and postal address of customers or companies wherein similar system is installed & under operation.	
7	To evaluate offer, demo should be conducted free of cost at BHEL/Trichy unit, if required by BHEL.	
8	Complete Training on Operation & Maintenance of the offered items should be given to BHEL Engineers at BHEL Trichy unit.	
9	Offered items should be commissioned at BHEL works, free of cost.	
10	Attached compliance report must be submitted along with offer.	

**Bharat Heavy Electricals Limited – Tiruchirapalli
COAL RESEARCH CENTRE**

Technical Specifications for Gas Analyzers

Ref : BHE: CRC:01

Dt : 18-05-2015

Note :

The following is meant for the flue gas analyser which can measure flue gas sample, the components of Oxygen (O₂), Carbon Monoxide (CO), Nitric Monoxide, Sulphur dioxide (SO₂) and Carbon dioxide (CO₂).

The “Technical Bid” shall have vendor’s responses along with Product Catalogue, Data Sheets in ORIGINAL and complete technical details.

All Technical terms can be here. **NO PRICE DETAIL IS ENTERTAINED HERE.**

Any deviation from the specifications may be brought-out clearly by the supplier in the technical bid

Sl.No	Description	BHEL’s Specification/requirement	Supplier’s Offer (With complete details)
1	Item	Flue Gas Analyzer	
2	Measuring Medium	Suitable to measure combustion product of Coal, Oil, Natural gas, Industrial gas product etc.	
3	Measurable gases	Range	
4	Carbon monoxide (CO)	0 - 1%	
5	Carbon dioxide (CO ₂)	0 - 20%	
6	Oxygen (O ₂)	0 - 21%	
7	Sulphur dioxide (SO ₂)	0 - 1000 ppm	
8	Nitrogen oxides (NOx)	0 - 5000 ppm	
9	Flue gas temperature	60 °C	
10	Flue gas pressure	1.1 bar (absolute)	
11	Sample Drawing	To be built in pump, continuously operable for >4 hours, sufficient to suck the sample flue gas	

**Bharat Heavy Electricals Limited – Tiruchirapalli
COAL RESEARCH CENTRE**

Technical Specifications for Gas Analyzers

		Sampling gas temperature measuring facility to be provided	
		Sampling gas pressure measuring facility to be provided.	
12	Computation of CO ₂	CO ₂ calculation has to be integrated for fuel selection like coal, oil, natural gas etc.(i.e) Capable for calculating CO ₂ in combustion products of Coal, Oil, Natural gas etc.	
13	Sensor Type	Vendor to specify	
14	Sensor Mounting	Vendor To Specify	
15	Sensor Life	Instrument should have self-diagnosed program for sensor emf / value of all sensors.	
16	Calibration	Self-calibration on ambient air for O ₂ .	
		User friendly manual calibration facility to be provided for O ₂ , CO, NO & SO ₂ (by software using calibration gas).	
17	Data Storage and Acquisition	Instrument should have data storing and acquisition facility	
18	Display	LCD/LED programmable display with backlight. In single window minimum four gases measurement should be displayed	
19	Measurement Output	Programmable display printout	
20	Communication Port	USB communication port USB card and software protocol to be provided	
21	End Connection	Suitable to connect to 6mm ID tube	
22	Water Catch Pot	Water catch pot to be provided at gas inlet point.	

**Bharat Heavy Electricals Limited – Tiruchirapalli
COAL RESEARCH CENTRE**

Technical Specifications for Gas Analyzers

23	Filters	Dust pre-filter to be provided at inlet of Water catch pot and at outlet of pump/inlet of sensors	
24	Resolution	0.1% for all gases	
25	Accuracy & Repeatability	± 1.0 % of reading for all gases	
26	Drift	Less than 2% of full scale per month	
27	Response Time (T-90)	20 seconds to 90% step change	
28	Ambient Temperature Range	4 to 50°C	
29	Power	220 VAC 50 Hz	
		Direct operation on 230VAC power supply and also with re-chargeable battery. Machine should have provision for on-line battery re-charging i.e while on recharging, battery should not be disturbed from machine.	
		Indicator for Battery potential level/value.	
		Indicator for charging, when unit is under charging.	
		Capable of continuous operation on battery (without direct power supply) for a minimum of 3 hours with pump in service.	
30	Output Options	Isolated 4-20 mA standard RS485, MODBUS & Ethernet as option	
31	Spares	10 nos. of gas pre-filters to be provided with equipment	
32	Portability	Equipment must be portable	

**Bharat Heavy Electricals Limited – Tiruchirapalli
COAL RESEARCH CENTRE**

Technical Specifications for Gas Analyzers

		Weight should not be more than 6 kg.	
		Equipment has to be provided with leather carrying bag exclusively prepared for instrument (No metal case).	
33	Documents to be furnished to BHEL along with the offer.	Scope of supply – 2 signed copies	
		Catalogs of models quoted	
		Dimensional drawing	
		Detailed Operation & Maintenance manual	
34	Onsite performance guarantee	The supplied items are to be guaranteed for its performance for a minimum period of 1 year from the date of performance acceptance at BHEL works.	
35	The total cost should be inclusive of the Flue gas analyzer and all essential accessories.		

**Bharat Heavy Electricals Limited – Tiruchirapalli
COAL RESEARCH CENTRE**

Technical Specifications for Gas Analyzers

Ref : BHE: CRC:01

Dt : 21-04-2015

Note :

The following is meant for the flue gas analyser which can measure syn gas sample of composed of Hydrogen (H₂), Carbon Monoxide (CO), Carbon dioxide (CO₂) and Hydrocarbons.

The “Technical Bid” shall have vendor’s responses along with Product Catalogue, Data Sheets in ORIGINAL and complete technical details.

All Technical terms can be here. **NO PRICE DETAIL IS ENTERTAINED HERE.**

Any deviation from the specifications may be brought-out clearly by the supplier in the technical bid

Sl.No	Description	BHEL’s Specification/requirement	Supplier’s Offer (With complete details)
1	Item	Flue Gas Analyzer	
2	Measuring Medium	Suitable to measure combustion product Syn Gas, Oil, Natural gas, Industrial gas product etc.	
3	Measurable gases	Range	Specify the range other wise
4	Carbon monoxide (CO)	0 - 10%	
5	Carbon dioxide (CO ₂)	0 - 70%	
6	Hydrogen (H ₂)	0 - 10%	
7	Hydrocarbons (CH ₄ , C ₃ H ₈ , C ₄ H ₁₀ , C ₃ H ₆ , C ₄ H ₈)	0-10%	
8	Flue gas temperature	60 °C	
9	Flue gas pressure	1.1 bar (absolute)	
10	Sample Drawing	To be built in pump, continuously operable for >4 hours, sufficient to suck the sample flue gas.	
		Sampling gas temperature measuring facility to be provided	

**Bharat Heavy Electricals Limited – Tiruchirapalli
COAL RESEARCH CENTRE**

Technical Specifications for Gas Analyzers

		Sampling gas pressure measuring facility to be provided.	
11	Computation of CO ₂	CO ₂ calculation has to be integrated for fuel selection like coal, oil, natural gas etc.(i.e) Capable for calculating CO ₂ in combustion products of Coal, Oil, Natural gas etc.	
12	Sensor Type	Vendor to specify	
13	Sensor Mounting	Vendor To Specify	
14	Sensor Life	Instrument should have self-diagnosed program for sensor emf / value of all sensors.	
15	Calibration	Self-calibration on ambient air for O ₂ .	
		User friendly manual calibration facility to be provided for O ₂ , CO, NO & SO ₂ (by software using calibration gas).	
16	Data Storage and Acquisition	Instrument should have data storing and acquisition facility	
17	Display	LCD/LED programmable display with backlight. In single window minimum four gases measurement should be displayed	
18	Measurement Output	Programmable display printout	
19	Communication Port	USB communication port USB card and software protocol to be provided	
20	End Connection	Suitable to connect to 6mm ID tube	
21	Water Catch Pot	Water catch pot to be provided at gas inlet point.	
22	Filters	Dust pre-filter to be provided at inlet of Water catch pot and at outlet of pump/inlet of sensors	

**Bharat Heavy Electricals Limited – Tiruchirapalli
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Technical Specifications for Gas Analyzers

23	Resolution	0.1% for all gases	
24	Accuracy & Repeatability	± 1.0 % of reading for all gases	
25	Drift	Less than 2% of full scale per month	
26	Response Time (T-90)	20 seconds to 90% step change	
27	Ambient Temperature Range	4 to 50°C	
28	Power	220 VAC 50 Hz	
		Direct operation on 230VAC power supply and also with re-chargeable battery.	
		Machine should have provision for on-line battery re-charging i.e while on recharging, battery should not be disturbed from machine.	
		Indicator for Battery potential level/value.	
		Indicator for charging, when unit is under charging.	
		Capable of continuous operation on battery (without direct power supply) for a minimum of 3 hours with pump in service.	
29	Output Options	Isolated 4-20 mA standard RS485, MODBUS & Ethernet as option	
30	Spares	5 nos. of gas pre-filters to be provided with equipment	

**Bharat Heavy Electricals Limited – Tiruchirapalli
COAL RESEARCH CENTRE**

Technical Specifications for Gas Analyzers

31	Portability	Equipment must be portable	
		Weight should not be more than 6 kg.	
		Equipment has to be provided with leather carrying bag exclusively prepared for instrument (No metal case).	
32	Documents to be furnished to BHEL along with the offer.	Scope of supply – 2 signed copies	
		Catalogs of models quoted	
		Dimensional drawing	
		Detailed Operation & Maintenance manual	
33	Onsite performance guarantee	The supplied items are to be guaranteed for its performance for a minimum period of 1 year from the date of performance acceptance at BHEL works.	
34	The total cost should be inclusive of the Flue gas analyzer and all essential accessories.		