



**Annexure-A**  
**Bharat Heavy Electricals Limited**  
**Corporate Research and Development**  
**Vikas Nagar, Hyderabad**

**REVISED SPECIFICATION SHEET.**

The item description mentioned in the page number 1 of the enquiry **No: 841602231 Date: 21-10-2016** should be read as given below:

SL.No.	Item Description	Unit	Qty
1	<b>Tunable Diode Laser (TDL) Based Ammonia Analyser</b>	Set	1
2	<b>Demonstration and Training</b>	Lot	1
3	<b>Erection and Commissioning</b>	Lot	1

The item specifications and other terms and conditions published in the enquiry **No: 841602231 Date: 21-10-2016** stand invalid. The revised item specifications and other terms and conditions for the enquiry are given below. This supersedes the page numbers 8 to 11 of the original enquiry.

**ITEM SPECIFICATIONS**

Sl.No	Item			
1	<b>Tunable Diode Laser (TDL) Based Ammonia Analyser</b>			
	Sl.No	Description	BHEL Specification	Vendor Specifications/ Deviations
	01	Scope of supply	a. TDL based 2 channel_Ammonia analyzer which is portable (*), has with measurement display, data logger and data storage. b. Necessary fittings and accessories. c. Demonstration of equipment at BHEL Site.  (* )Note: By portable, it is meant that the instrument should be de-commissionable, transportable and re-commissionable at different sites by BHEL staff once it has been demonstrated by the vendor. This instrument will be used at various locations during its service. Vendor should quote an instrument which can serve this purpose	
	02	Make and model	Vendor to specify the make and model of each item which are being supplied	
	03	Measured parameter	Ammonia	



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	04	Measurement principle	Tunable Diode Laser Spectroscopy (TDLS)	
	05	Measurement	<p>Range:0-15ppm(NH<sub>3</sub>)</p> <p>Accuracy:+/-5% of measured value</p> <p>Resolution:0.2ppm(NH<sub>3</sub>)</p> <p>Sensitivity: 0.2ppm(NH<sub>3</sub>)</p> <p>Precision:+/-2% of measured value</p> <p>Response time/channel: 30 seconds or less (including instrument response and sampling time)</p> <p>Type of analysis: Continuous monitoring</p> <p>Interference: Measurements should not be affected by any interference caused due to the presence of other gases, dust and moisture in the gas being analyzed or from the changes in gas temperature and pressure.</p> <p>Calibration: Self calibration or audit for zero and span.</p> <p>Warm-up time: Vendor to specify (should be less than 15 minutes)</p> <p>Relays: Minimum 2 user configurable relays.</p>	
	06	Environmental condition	<p>Pressure: Atmospheric pressure,</p> <p>Temperature: 0-50 °C</p> <p>Humidity: less than 85% non-condensing</p> <p>Ambient Dust: As expected in an Indian coal fired power plant.</p> <p>Controlled Environment (AC) will not be provided for the instrument. The vendor has to make necessary provisions if required for the instrument</p>	
	07	Gas condition	<p>Pressure: -200mmWC to +200mmWC (gauge)</p> <p>Temperature:200 Deg C to 400 DegC</p> <p>Dust load : up to 60 g/Nm<sup>3</sup></p> <p>Gas matrix:</p> <p>NH<sub>3</sub>: 0-15 PPM</p> <p>CO<sub>2</sub>: 10-20% Vol</p> <p>H<sub>2</sub>O:5-10% Vol</p> <p>O<sub>2</sub>: 0-8%</p> <p>N<sub>2</sub>: 60-75%</p> <p>SO<sub>x</sub>: 20-1000 PPM</p> <p>NO<sub>x</sub>: 30-500 PPM</p> <p>CO: 20-600 PPM</p>	



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	08	Construction	<p>Mounting: Access on one side of the duct/pipe.</p> <p>Instrument should be portable and rugged for industrial use.</p> <p>Weight: vendor to specify</p> <p>Dimensions: Vendor to specify</p> <p>Enclosure: IP65 and above</p>	
	09	Process Connection	<p>It should be suitable for the following sampling points:</p> <p>a. 1mx1m duct with one side mounting</p> <p>b. 10mx10m duct with one side mounting</p> <p>c. 10" pipe with one side mounting</p> <p>d. 4" pipe with one side mounting</p> <p>All the necessary fittings needed for Sl. No. c above to be supplied along with the analyser. For all Sl. No. a, b, c and d, drawings and details of other accessories (like matching flange etc.) need to be provided.</p> <p>The distance of probe from the instrument is indicatively 300 m for tender evaluation. However the vendor shall quote per meter rate for cables/connections. The actual length requirement will be communicated at the time of PO placement.</p>	
	10	Data storage and display	<p>a. Display with data logger for storing data for at least 6 months (for a data acquisition rate of every 5 Seconds)</p> <p>b. Suitable controls and indicators to be supplied with the equipment for monitoring the analysis and its proper functioning.</p> <p>c. Instrument output of 4-20 mA along with output signal with a display for showing current readings of the concentration of the measured component with units as mentioned in the detection range mentioned above (PPM).</p>	
	11	Certificates/Standards	<p>1. Calibration Certificate and inspection certificates to be provided.</p> <p>2. Certification of conformity to EN15267 and EN 14181</p> <p>3. Electric Safety -CE</p>	



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12	Consumable accessories	The vendor should supply all items required for installation and other required accessories such as: Required tubing and connectors, filters, control valves, etc.	
13	Training	Vendor to provide training on regular operation and maintenance of the equipment at the time of Demonstration at BHEL Hyderabad.	
14	Power supply & Air	Power Supply available to the instrument will be: 220V, Single phase or 415V, 3 Phase, 50 HZ, AC. Instrument air if required will be provided by BHEL. The supply pressure will be 5 bar. Pressure reduction valve, if any, will be vendor scope.	
15	Documentation	Operating, technical and maintenance manuals to be supplied in English both in hardcopy (2 copies) and softcopy.	
16	Manufactures Test Certificate	Manufacturer's Test Certificate should be provided before dispatch.	
17	Spares	Offer shall include all the spares required for normal operation of equipment for a period of two years.	
18	Warranty	All supplied items to be provided with warranty for 30 months from the date of dispatch or 24 months from date of erection and commissioning whichever is earlier.	
19	Acceptance of material	Vendor has to agree for demonstration at BHEL Hyderabad. Supplied items will be considered accepted by BHEL once they have been demonstrated at BHEL Hyderabad. <b>NO SHIPMENT PAYMENT WILL BE MADE TO THE VENDOR UNLESS THE DEMONSTRATION HAS BEEN DONE. Offers not in line with this term will not be considered for evaluation and will be summarily rejected without any further correspondence.</b>	
20	Delivery Period	<b>The Instruments have to be delivered within a delivery period of 8-10 weeks from the date of placement of Purchase Order (PO). Offers not in line with this delivery period will not be considered for evaluation and will be summarily rejected without any further correspondence.</b>	



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	21	Delivery Address	The material is required to be delivered to: Stores In-charge, BHEL R&D C/o IICT Pilot Plant Complex Road No.-7, Nacharam Industrial Area Hyderabad, PIN- 500076 Phone: 040-2717-2027; 2388-2380 Name of the Official for Contact- Abhishek Kumar Pandey Mobile Number- 08099488494	
	22	Qualification criteria	a. Vendor must have an established and operational after-sales and service office within India either directly or through an authorized agency. b. Vendor must have supplied at least one similar (TDL based) (same application in case of foreign supplies or different application in case of Indian supplies are acceptable) instrument before one year from the- Enquiry date 21/10/2016. A letter/certificate of satisfactory operation, for the same supply, received from the customer within last six months from the- Enquiry date 21/10/2016. needs to be provided along with the offer. Information containing the Name, email id, organization name, designation, landline and mobile numbers details of the reference officer have to be furnished along with the above mentioned letter/certificate.  <b>BHEL reserves the right to carry out independent verification with referenced parties. Vendors have to give only such references who are willing to give confirmation and not refrain from the same on the grounds of confidentiality.</b>	
<b>2</b>	<b>Demonstration and Training</b>			
	<b>Sl.No</b>	<b>Description</b>	<b>BHEL Specification</b>	<b>Vendor Specifications/ Deviations</b>
	1	Demonstration of equipment operation	a. Vendor should install and then demonstrate the system operation at BHEL Hyderabad. This will include measurement of Ammonia under conditions expected at power plant	



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			<p>site as mentioned in our enquiry specifications.</p> <p>b. Vendor should indicate the requirements for demonstration, if any, to BHEL at least 15 days before material dispatch from their works to allow for the provisions to be ready.</p> <p>c. Subsequent of demonstration the material will be transported to Simhadri. Transport and insurance of material from Hyderabad to Simhadri Power Plant will be BHEL Scope.</p>	
	2	Training	<p>a. Vendor has to provide training on regular operation and maintenance of the equipment during this demonstration.</p> <p>b. Separate charges for Demonstration, training need to be quoted in the price bid distinctly. Local taxes and duties are applicable.</p>	
<b>3</b>	<b>Erection and Commissioning</b>			
	<b>Sl.No</b>	<b>Description</b>	<b>BHEL Specification</b>	<b>Vendor Specifications/ Deviations</b>
	1	Erection, Commissioning and demonstration	<p>a. Erection and Commission of the instrument will happen at Simhadri Power Plant, Vishakhapatnam, Andhra Pradesh as soon as the material is received there from BHEL Hyderabad. Vendor should indicate the requirements for erection and commissioning, if any, to BHEL at the time of material dispatch from their works to allow for the provisions to be ready. BHEL will inform the vendor once the site is ready for E&amp;C. <b>Subsequent to this, vendor should start the E&amp;C within 7 days and complete it within next 7 days.</b></p> <p>b. Supplier to quote Supply and E&amp;C portion with relevant taxes separately. BHEL reserves the right to issue separate orders.</p> <p>c. If the E&amp;C is performed by Indian Agents or Indian Authorized agencies,</p>	



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			such charges shall be quoted in Indian currency.  d. Vendor will have to make their own arrangements for travel and stay during these periods.	
	2	Erection and Commissioning charges	Charges for Erection and Commissioning, if any, shall be clearly indicated by the vendor separately under this head in their price bid.	



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**OTHER TERMS & CONDITIONS**

SL.No.	Clause	BHEL Specification	SUPPLIERS ACCEPTANCE / REMARKS
1	Delivery Address	For Indian Vendors: The material is required to be delivered to the following address. Stores In-charge, BHEL R&D C/o IICT Pilot Plant Complex Road No.-7, Nacharam Industrial Area Hyderabad, PIN- 500076 Phone: 040-2717-2027; 2388-2380 08099488494 For Foreign Vendors: 1) BHEL R.O.D Office, Mumbai, India for sea consignments and 2) BHEL R&D, Hyderabad, India for air consignment	
2	Technical Clarifications	Any Technical Clarifications Please contact: Abhishek Kumar Pandey/Senior Engineer, Mob: +91-8099488494, Email : akpandey@bhelrnd.co.in	
3	Agency Agreement	In case of Agents quoting imported equipment, agency agreement between the principles and agents with commission charges details should be submitted along with the offer. (Refer to the Commercial terms and conditions of the enquiry).	



## UN - PRICE BID FORMAT

Enquiry Short Description: Tunable Diode Laser (TDL) Based Ammonia Analyzer

Enquiry No: 841602231

Enquiry Date: 21-10-2016

Sl. No	Item Description	Units	Quantity (A)	Unit Rate (B)	Currency (Note-3)	Amount C=A x B
1.1	Tunable Diode Laser (TDL) Based Ammonia Analyser, with accessories.	Set	1	QUOTED	QUOTED	QUOTED
1.2	Demonstration and Training	Lot	1	QUOTED	QUOTED	QUOTED
1.3	Erection and Commissioning	Lot	1	QUOTED	QUOTED	QUOTED
1.4	SUB TOTAL					QUOTED
<b><u>APPLICABLE TAXES for supplies and Services from India</u></b>						
2.1	CST/VAT/Other duties _____ % on Sl. No: 1.1					QUOTED
2.2	Service Tax _____ % on Sl. No: 1.2					QUOTED
2.3	Service Tax _____ % on Sl. No: 1.3					QUOTED
	Total Amount (D = Sl.no.1.4 + 2.1 + 2.2 + 2.3)					QUOTED

### **Note:**

1. The Vendor has to fill the applicable CST/VAT/duties and Service tax in the blank cells.
2. This Un-Price bid format should be submitted along with Techno-Commercial Bid.
3. All Foreign vendors should quote unit price on FOB-Nearest International Airport.
4. If items are quoted in foreign currency (FOB-nearest International Airport), concessional custom duty @ 5.15% , Freight @ 2% and Insurance @ 1% on basic price will be considered for price evaluation.
5. In case if any foreign vendor (main equipment quoted in foreign currency), desires to source any supplies or Services from India, it should be quoted in Indian Currency, INR., along with order placement address.
6. Vendors are requested to quote price for all the required cables on per meter basis. Offers will be evaluated on 300 meter basis. Actual length required will be communicated at the time of order placement.
7. Spares should be quoted separately. BHEL may place separate Order as and when required after warranty period.

**SIGNATURE OF THE BIDDER WITH SEAL**

## **PRICE - BID FORMAT**

**Enquiry Short Description: Tunable Diode Laser (TDL) Based Ammonia Analyzer**

**Enquiry No: 841602231**

**Enquiry Date: 21-10-2016**

Sl. No	Item Description	Units	Quantity (A)	Unit Rate (B)	Currency (Note-3)	Amount C=A x B
1.1	Tunable Diode Laser (TDL) Based Ammonia Analyser, with accessories.	Set	1			
1.2	Demonstration and Training	Lot	1			
1.3	Erection and Commissioning	Lot	1			
1.4	SUB TOTAL					
<b><u>APPLICABLE TAXES for supplies and Services from India</u></b>						
2.1	CST/VAT/Other duties _____ % on Sl. No: 1.1					
2.2	Service Tax _____ % on Sl. No: 1.2					
2.3	Service Tax _____ % on Sl. No: 1.3					
	Total Amount (D = Sl.no.1.4 + 2.1 + 2.2 + 2.3)					

### **Note:**

1. The Vendor has to fill the applicable CST/VAT/duties and Service tax in the blank cells.
2. This Un-Price bid format should be submitted along with Techno-Commercial Bid.
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