

Dated:06/07/2015

CORRIGENDUM-1

Tender enquiry No. R/5599/2015/1368V1 dt: 23/06/2015 with tender opening date 22/07/2015 for the item "Gas Analyser for Continuous Ambient Air Quality Monitoring System for SO₂,NO_x,CO,TSPM, and RSPM with Sampling Arrangement, Calibration System and Data Aquisition System

As a result of pre bid meeting held on 30/06/2015 following changes have been made in the original tender document:-

- (1) Technical specification **PR000348 Rev 04** has been revised as **PR000348 Rev 05 and enclosed below for reference.**
- (2) Last date to get tender from BHEL has been extended from 21/07/2015 to **26/07/2015**
- (3) Tender opening date has been extended from 22/07/2015 to **27/07/2015**

Vendors are requested to quote according to above changes.

FOR & ON BEHALF OF BHEL, HARIDWAR

Engineer (PCRI-BOI)

दिनांक एवं हस्ताक्षर SIGN & DATE		उत्पाद क्रय विनिर्देश		PR00348			
				पृष्ठ	6	का	1
सुपरसेड्स INVENTORY NO.	समग्री सूची संख्या को अधिकृतित करता है	PRODUCT PURCHASE SPECIFICATION		Page	1	of	6
CONTINUOUS AMBIENT AIR QUALITY MONITOR WITH COMPUTER BASED DATA LOGGER							
1. APPLICATION : Continuous measurement of ambient air quality.							
2. TECHNICAL SPECIFICATION :							
Item is proposed to be procured as per specification (or better) given below:							
2.1 SULPHUR DIOXIDE (SO₂) ANALYZER BASED ON UV FLUORESCENCE PRINCIPLE							
2.1.1 Range : 0 - 5 PPM, user selectable for any in between ranges with auto ranging							
2.1.2 Display : Liquid Crystal Display.							
2.1.3 Lower Detectable Limit : 1 ppb							
2.1.4 Zero Drift : < 1 ppb in 24 Hrs.							
2.1.5 Span Drift : < 0.5% in 24 Hrs.							
2.1.6 Linearity : ± 1% FS							
2.1.7 Output : RS232 port for data transfer to be provided							
2.1.8 Mounting: Standard 19" with telescopic slide.							
2.2 OXIDES OF NITROGEN (NO_x) ANALYZER BASED ON CHEMILUMINESCENCE PRINCIPLE							
2.2.1 Range : 0 - 5 ppm, user selectable for any in between ranges with auto ranging							
2.2.2 Display: Liquid Crystal Display.							
2.2.3 Lower Detectable Limit : 1.0 ppb							
2.2.4 Zero Drift: < 1.0 ppb in 24 Hrs.							
2.2.5 Span Drift: < 0.5% in 24 Hrs.							
2.2.6 Linearity : ± 1% FS							
2.2.7 Output : RS232 port for data transfer to be provided							
2.2.8 Mounting: Standard 19" with telescopic slide.							
हस्ताक्षर एवं दिनांक SIGN & DATE	समग्री सूची संख्या INVENTORY NO.	नाम NAME		दिनांक एवं हस्ताक्षर SIGNATURE & DATE			
		निर्माणकर्ता PREPARED BY	R S Yadav	R S Yadav		04/07/15	
		जांचकर्ता CHECKED BY	R S Yadav	R S Yadav		04/07/15	
		पर्यवेक्षणकर्ता SUPERVISED BY	R S Yadav	R S Yadav		04/07/15	
		स्वीकृति APPROVED :	Ambrish Goel	Ambrish Goel			
		निर्माण PREPARED :	R S Yadav	जारी ISSUED :	Ambrish Goel	दिनांक DATE :	04/07/15
		सहमत विभाग AGREED DEPTT.	नाम NAME	दिनांक एवं हस्ताक्षर DATE & SIGNATURE			
		REV.NO.	05				
		Dt.	02.07.15				

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स्वाधिकाय एवं गोपनीय

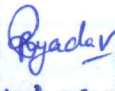
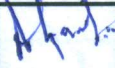
इस प्रलेख में दी गई सूचना भारत हेवी इलेक्ट्रिकल्स की संपत्ति है इसका प्रयोग एवं अप्रत्यक्ष रूप से किसी भी तरह प्रयोग, जो कि कंपनी के हित में हानिकारक हो न किया जाए।

दिनांक एवं हस्ताक्षर SIGN & DATE		उत्पाद क्रय विनिर्देश		PR00348	
		PRODUCT PURCHASE SPECIFICATION		पृष्ठ Page	6 का 2 2 of 6
सामग्री सूची संख्या को INVENTORY NO.	2.3 Calibration: Multipoint Calibrator : Multipoint calibrator with zero air generator for minimum two input gas i.e. SO₂, NO_x with Calibration gas Cylinder of Aluminium 10 liters capacity with SS regulator of suitable concentration to calibrate the above analyzer. The calibrator should have dilution facility to dilute the span gas for multipoint calibration. The multipoint calibrator should be supplied along with all the accessories such as tubing, filters valves etc. for interconnecting the analyzers. 2.4 TSPM/RSPM/PM2.5 ANALYSER BASED ON BETA RAY ABSORPTION PRINCIPLE/TEOM: 2.4.1 Range : 0 - 10,000 microgram/m³, user selectable for any in between ranges. 2.4.2 Display : Digital Display. 2.4.3 Resolution : ± 0.5 microgram/m³ or Lower 2.4.4 Detector: Geiger muller counter. 2.4.5 Filter material : Glass fibre filter 2.4.6 Linearity : ± 1% FS 2.4.7 TSPM ,RSPM, PM2.5 Sampling System: Equipment to be supplied along with sampling system (inlet head) for TSPM (less than 100 micron) / RSPM (PM₁₀ , less than 10 micron)/ PM-2.5 to be direct mass measurement, separately with samplers. 2.4.8 Calibration: Separate calibration foil to be supplied for calibration of TSPM (less than 100 microns particle size) and RSPM (less than 10 micron particle size). Prices of calibration foils (complete with certificate) for TSPM, PM₁₀ and PM-2.5 calibration should be quoted if not included in the standard package. 2.4.9 Output : RS232 port for data transfer 2.4.10 Mounting: Standard 19" with telescopic slide.				
सामग्री सूची संख्या INVENTORY NO.	REV.NO.	05 dated 02.07.15	निर्माणकर्ता PREPARED BY	R.S.Yadav	 04/07/15
			जांचकर्ता CHECKED BY	Ambrish Goel	 04/07/15

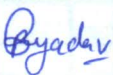
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स्वाधिकार एवं गोपनीय
इस दस्तावेज में दी गई सूचना भारत भारी इलेक्ट्रिकल्स की संपत्ति है इसका प्रत्यक्ष एवं अप्रत्यक्ष रूप से किसी भी तरह प्रयोग, जो कि कंपनी के हित में हानिकारक हो न किया जाए।

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		PRODUCT PURCHASE SPECIFICATION		पृष्ठ Page	6 का 3 3 of 6
SUPERSEDES INVENTORY NO. सामग्री सूची संख्या को अधिकृतित करता है	2.5 CO Analyser : Based on Non Dispersive Infra Red principle with Gas Filter co-relation For measurement of CO in Ambient Air. 2.5.1 Range : 0 - 100 PPM, programmable. 2.5.2 Display : Digital Display. 2.5.3 Precision : +0.1PPM 2.5.4 Detector : Correlation IR Technology. 2.5.5 Linearity : $\pm 1\%$ FS 2.5.6 Built in zero/span solenoid valve for calibration or CO calibration Aluminum Gas Cylinder, 10 liters capacity with SS regulator for single point calibration, digital output RS 232 port for data transfer & internal data storage. 2.6 Air Conditioner , Window AC of 1.5 ton capacity of 2 Nos. , with atleast 3 Star Rating 2.7 Table & Chair: A set of Table & Chair, 3 nos. of Executive Revolving Chair, 1 no. Executive table of 3 feet X 5 feet or approximate. 2.8 UPS should be of 3 KW with the 30 min. backup for AAQMS 2.9 SAMPLING SYSTEM: i. Gas Sampling system – Gas sampling system made of glass (multiple gas entry) with Teflon tubes connection from gas manifold to analysers, moisture trap to remove moisture condensate complete with peristaltic pump and sampling hood made of SS. ii. Air Compressor, 10 LPM iii. ZERO AIR GENERATOR with inbuilt catalytic converter 2.10 Wireless Connectivity Data Acquisition System (DAS) should be equipped with wireless connectivity/GSM or RF modems or better with AAQMS.				
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स्वाधिकार एवं गोपनीय इस प्रलेख में दी गई सूचना भारत हेवी इलेक्ट्रिकल्स की संपत्ति है इसका प्रयोग एवं अप्रत्यक्ष रूप से किसी भी तरह प्रयोग, जो कि कंपनी के हित में हानिकारक हो न किया जाए।					
दिनांक SIGN & DATE	REV.NO. 05 dated 02.07.15				
सामग्री सूची संख्या INVENTORY NO.	निर्माणकर्ता PREPARED BY R.S.Yadav		जांचकर्ता CHECKED BY Ambrish Goel		04/07/15 04/07/15

निर्देश एवं दिनांक SIGN & DATE		उत्पाद क्रय विनिर्देश		PR00348												
		PRODUCT PURCHASE SPECIFICATION		पृष्ठ Page	6 4	का of	4 6									
SUPERSEDES INVENTORY NO.	समग्री सूची संख्या को अतिरिक्ति करता है	2.11 Calibration Gas Cylinders: Calibration Gas Cylinder for NOX, SO₂, & CO of 10 litre capacity, N₂ of 47 litre Capacity with SS316 regulator. 2.12 DATA LOGGER : Data logger with driver software should be provided with PC based data acquisition system suitable for storing, logging, reporting and printing data from the above analysers. PC should have Minimum configuration as mentioned below:- ➤ Intel ® Core (TM) 2 Duo or higher ➤ RAM : 2 GB or higher ➤ Hard Disk : 160 GB or higher ➤ OS : Windows 7 ➤ CD-ROM : 52 X CD-ROM Drive IDE compatible ➤ Monitor : 17" SVGA colour monitor ➤ Ports : 2 serial & 1 parallel ➤ Keyboard : Standard Windows keyboard ➤ Mouse : Mouse + Pad ➤ Software : Windows based data logging/driver software with a provision to averaging out data at selectable interval and graphical representation of data. ➤ Laserjet printer Specification of Printer: <table border="1"> <tr> <td>Type</td> <td>HP Laser jet</td> </tr> <tr> <td>Printing</td> <td>Black and White</td> </tr> <tr> <td>Paper size</td> <td>A4</td> </tr> <tr> <td>Resolution</td> <td>600 x 600 Dpi</td> </tr> <tr> <td>Capacity</td> <td>10 pgs / min or better</td> </tr> </table>					Type	HP Laser jet	Printing	Black and White	Paper size	A4	Resolution	600 x 600 Dpi	Capacity	10 pgs / min or better
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निर्देश एवं दिनांक SIGN & DATE																
समग्री सूची संख्या INVENTORY NO.	REV.NO.	05 dated 02.07.15	निर्माणकर्ता PREPARED BY	R.S.Yadav	 04/07/15											
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सुपेर्सेड्स INVENTORY NO.	सामग्री सूची संख्या को अधिकृतित करता है	2.13 SOFTWARE : ➤ Software to drive 8 channels at a time. ➤ Capability of handling various types of analyzers like serial connectivity parallel connectivity, 4-20 mA capability, 0-10 V capability etc. ➤ Windows based application software for continuous air quality monitoring. ➤ Main windows for real time display of all measured parameters with status of all analyzers. ➤ Real time & multi curves/graphs for all parameters. ➤ Programmable down loading of data. ➤ Report generation over user selectable time period. 2.14 RACK CABINET: Standard 19" rack cabinet made of heavy grade aluminium profiles with a facility of telescopic slides overload protection, power distribution box to accommodate "Monitoring analysers" should be provided. 2.15 AMBIENT CONDITION: Equipment shall be suitable for operation in ambient temperature from 0 to 50 degree Celsius and relative humidity of 0 to 98%. 3.0 QUALITY ASSURANCE: Calibration and Test certificate for all the analyser should be supplied along with the equipment. 4.0 General Terms & Conditions: 4.1 Document: Two hard copies & 2 CDs of O&M manual in English language giving complete technical information for operation and maintenance of the equipment. Out of these one hard copy and one CD to be supplied to BHEL, Hardwar in advance. Other copy will be supplied along with consignment. 4.2 Installation and Commissioning: The supplier shall install & commission the Equipment at site, supplier is also required to establish the interface connection of equipment, data logger and computer system. Supplier should demonstrate the performance of the Equipment and all its accessories to ensure compliance with complete specifications & parameters quoted by them to the satisfaction of BHEL/end user. All the items and consumables required for installation and commissioning will be supplied by supplier and will be under supplier's scope of supply. Failing to comply to the Installation & Commissioning clause the offer will be rejected straightway.					
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सामग्री सूची संख्या INVENTORY NO.	दिनांक एवं हस्ताक्षर SIGN & DATE	REV.NO.	05 dated 02.07.15	निर्माणकर्ता PREPARED BY	R.S.Yadav		04/07/15
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निर्माक एवं हस्ताक्षर SIGN & DATE		उत्पाद क्रय विनिर्देश		PR00348			
		PRODUCT PURCHASE SPECIFICATION		पृष्ठ	6	का	6
समग्री सूची संख्या एवं अधिकृतिकृत करता है INVENTORY NO.	समग्री सूची संख्या एवं अधिकृतिकृत करता है INVENTORY NO.	4.3 After Sales Service: (i) The supplier shall give details of his service network in the India. (ii) In case of foreign vendors, name, address and contact details be given for their Indian agent, who will be responsible for erection, commissioning and after sales service of the equipment in India. It should be supported by an authorization certificate. 4.4. Training: Supplier shall give necessary training to user at the time of installation & commissioning. 4.5. The equipment shall work on 220-240 VAC, 50 Hz single phase supply. 4.6. Guarantee: The equipment shall be guaranteed for a period of 18 months from the Date of dispatch or 12 months from the date of Installation & Commissioning, whichever is earlier. <i>Failing to comply to the Guarantee clause the offer will be rejected straightway.</i> 4.7 Consumables: For future reference Supplier should quote for consumables and essential spares with quantity and prices item wise for trouble free operation of the equipment for 3 years. 4.8. Packing & Dispatch: The equipment / accessories shall be packed in a suitable water proof/vibration proof packing boxes capable of bearing air and road transit hazards. Packing box shall be properly identified and marked with BHEL's (India) Purchase Order Number. 4.9"PCRI HWR" should be written in bold letters on all four sides of the box. Packing box shall be properly identified and marked with BHEL's (India) Purchase Order Number. 5.0. Cross referred Document: Nil					
समग्री सूची संख्या INVENTORY NO.	REV.NO.	05 dated 02.07.15	निर्माणकर्ता PREPARED BY	R.S.Yadav		04/07/15	
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