



# वेस्टर्न कोलफील्ड्स लिमिटेड

## Western Coalfields Limited

(मिनीरत्र कंपनी) (A Miniratna Company)

(कोल इंडिया लि. की अनुषंगी कंपनी)

(A Subsidiary of Coal India Limited)

पर्यावरण विभाग

Environment Department

आईएसओ 9001:2015 प्रमाणित

ISO 9001:2015 Certified

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www.westerncoal.nic.in

पंजी. का. : कोयला विहार, सिविल लाइन्स, नागपुर (महाराष्ट्र) - 440001/ Regd. Off. : Coal Estate, Civil Lines, Nagpur (MS) - 440001

संदर्भ संख्या / Ref.No.: वेकोलि/ मुख्यालय/ पर्यावरण/ 14-B/ 03 दिनांक / Date : 17.01.2022

### NOTICE FOR OFFER / QUOTATION

WCL intends to procure Continuous Ambient Air Quality Monitoring Systems (CAAQMS) as per CPCB specifications dated 01.07.2019 with meteorological monitoring station, complete housing and fittings along with 5 years comprehensive annual maintenance contract after initial warranty period of 3 years from date of commissioning in different mines of WCL through GeM Portal.

Offers / quotations are invited from prospective bidders to prepare estimate and inputs for preparation of NIT – in respect of procurement of Continuous Ambient Air Quality Monitoring Systems (CAAQMS). The final procurement will be done through GEM portal. The details for reference

Technical Specifications : Enclosed as Annexure – A  
Scope of work & Terms and Conditions : Enclosed as Annexure – B  
CAMC Terms and Conditions : Enclosed as Annexure – C

Prospective bidders / participants may submit offer / quotation to the email of General Manager (Environment)/HOD – [gmenvironment.wcl@coalindia.in](mailto:gmenvironment.wcl@coalindia.in) on or before 23.01.2022, 5.00 PM.

A **PRE- NIT MEETING** is also scheduled to be held on 24.01.2022, 03.00 PM in the office of General Manager (Environment)/HOD through Video- Conferencing. The link for the meeting will be shared in due course in WCL website under notices.

Interested firms may attend / depute their representative duly authorized in this matter for participating in the above scheduled **PRE- NIT MEETING**.

Prospective participants are requested to please contact the following address for any queries:

Office of GM(ENV), WCL HQ, Civil Lines, Nagpur-440001.

Email: [gmenvironment.wcl@coalindia.in](mailto:gmenvironment.wcl@coalindia.in)

Contact: Mrs. Dhrysa P, Dy. Mgr. (ENV), Mobile: 8275970250

भवदीय

कोशिक  
17/01/22

महापबंधक / विभागाध्यक्ष (पर्यावरण)

The scope & specification for One Set of CAAQMS			
Note: For all the items in the complete CAAQM station, the minimum technical specification should be inline with the technical specifications for CAAQM Station (Real Time) published by CPCB dated 01.07.2019 in their website.			
Category	Specification	Quantity	Amount in Rs
Housing/Container	Continuous Automatic Monitoring Stations with Sampling line, Internal fitting, Instruments racks, Electrical fittings and Gas line fittings, Tools (electrical and mechanical), Data display system, Recommended spares in a Housing Container.	1 set	
Monitoring Station / container foundations (RCC)	RCC foundation, pillars misc works including Caging, civil & electrical work (for CAAQM stations as well as Data Display Boards)	As per actual	
Air conditioner	Supply of Air Conditioner, Split Type, Wall mounted along with voltage stabilizer (2pcs X 1.5 ton ), 5 star rating at the CAAQM Station with automatic timer.	2 nos	
Online Uninterrupted Power Supply (UPS)	Supply of On line UPS (1X5 KVA, 2 hr. back up) at the CAAQM Station for analysers	1 no	
Ambient SO2 Analyser	Supply of One number of Continuous Ambient Sulphur Dioxide (SO2) Analyzer Analysers Working Principles: UV Fluorescence Analyser Approvals :USEPA /TUV Ranges : Auto ranging 0 - 200 ppb	1 no	
Ambient NO2, NO and NOx Analyser	Supply of One number of Continuous Ambient Oxides of Nitrogen (NO/NO2 / NOx) Analyzer Analysers Working Principles:Chemiluminescence Analyser Approvals :USEPA /TUV Ranges: Auto ranging 0-2000 ppb	1 no	
Ambient CO Analyser	Supply of One Quantity of Continuous Ambient Carbon Monoxide (CO) Analyzer Analysers Working Principles:Non Dispersive Infra-Red (NDIR) with Gas Filter Correlation/ Cross Flow Modulation Method Analyser Approvals :USEPA /TUV Ranges: Auto ranging 0-100 ppb	1 no	
Continuous PM10 Monitoring Analyser	Supply of One number of Automatic PM10 Particulate Matter Monitor Detector of Continuous PM10 Monitoring AnalyserPlastic Scintillator/ GM Counter/ Silicon- Semiconductor base Approval of Continuous PM10 Monitoring Analyser :USEPA/TUV Analysers Working Principles:β-ray attenuation Particle Size Cut Off : 0-10 Microns Measuring Range : 0 – 1000 µg/m3	1 no	
Continuous PM2.5 Monitoring Analyser	Supply of One qty of Automatic PM2.5 Particulate Matter Monitor Approval of Continuous PM2.5 Monitoring Analyser: USEPA/ TUV Detector of Continuous PM2.5 Monitoring Analyser: Plastic Scintillator/ GM Counter/ Silicon- Semiconductor base Analysers Working Principles:β-ray attenuation Particle Size Cut Off : 0-2.5 Microns Measuring Range : 0 – 1000 µg/m3	1 no	
Sampling System	Supply of One number of Sampling System having 10 port manifold	1 set	
Meteorological/ Ambient Weather monitoring System	Supply of one number Meteorological/ Ambient Weather monitoring System to monitor wind speed, wind direction, ambient temperature,Relative Humidity, Solar radiation, Rainfall, telescopic crank up mast of 10 meters.	1 set	
Multipoint Gas Calibration System for Gas calibration and Meteorological, Flow and Electronic Calibration	Supply of One set of Multipoint Gas Calibration System for calibration of SO <sub>2</sub> , NO, CO. The Permeation System should be capable to accept permeation tubes up to 6 cm in length and 2cm in diameter with user selectable temperature setting of 40 °C and 50 °C Ozone generator Zero air generator of 99.9% purity to be provided One set Calibration gas cylinder with regulators (10 litre. water capacity cylinder with regulator) for NO, SO <sub>2</sub> , CO each.	1 set	

Category	Specification	Quantity	Amount in Rs
	System should be 19" rack mountable.		
<b>Data Acquisition and handling station : One for each CAAQM Station i.e. System comprises of station computer with DAS facilities.</b>	Supply of one Data Acquisition System (DAS), One for each CAAQM Station	1 set	
	Supply of Computer System for DAS: One for each CAAQM Station		
	Computer of minimum following specification:		
	1. CPU- Intel® Core i7 8th generation or higher		
	2. Memory- 8 GB DDR-IV, or better		
	3. HDD's - 3.5" 1TB, SATA drives		
4. Monitor- 22" Wide or higher LED/FHD Color Monitor			
5. Standard Windows Operating System & Standard Optical Mouse & Keyboard			
6. Minimum 6 USB (at least 4 ports of 3.0)			
<b>Laser Printer Colour Multi Function Printer</b>	One for each CAAQM Station		
<b>Data Acquisition software for CAAQM Station</b>	Data acquisition software (including Data logging/uploading software to CPCB/SPCB/MoC/CIL/WCL servers) for each station for data acquisition, data collection, data storage, statistical analysis of data, data backup, data validation for automatic checks at station, calibration of system, data transfer to servers of pollution control boards /MoC/CIL/WCL, report generation, data transfer to display boards.	1 set	
<b>Remote calibration and validation software</b>	Remote calibration and validation software at each CAAQM station	1 set	
<b>19" Industrial Rack</b>	Supply of Suitable 19" Rack cabinet to accommodate all analyzers, calibrators, Zero air generators, data logger etc.	As per actual	
<b>Day Light and Night Visible True Color Data Display System</b>	Supply of One set of Day & Night Visible Data Display Board (Near to the station) Size: 8 x 4 feet (W x H)	1 set	
<b>Data display Board Transmission Device for Data Display Board near to the station</b>	As per CPCB specs	1 set	
<b>Warranty</b>	3 year onsite warranty for the complete unit		
<b>Installation &amp; Commissioning Charges</b>			
<b>Freight &amp; Insurance Charges</b>			
<b>5 years CAMC with consumables and spares after 3 years of warranty</b>	CAMC terms and conditions enclosed as ANNEXURE - C		
<b>CAMC Charges for 1st Year</b>			
<b>CAMC Charges for 2nd Year</b>			
<b>CAMC Charges for 3rd Year</b>			
<b>CAMC Charges for 4th Year</b>			
<b>CAMC Charges for 5th Year</b>			

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**Scope & Terms and Conditions for CAAQMS, WCL**

- The Bidder shall supply CAAQMS with 5 analysers (i.e., Ambient CO Analyser, Ambient SO<sub>2</sub> Analyser, Ambient NO-NO<sub>2</sub>- NO<sub>x</sub> Analyser, Continuous PM<sub>10</sub> Monitoring Analyser & Continuous PM<sub>2.5</sub> Monitoring Analyser) along with meteorological station, complete housing, fittings and provision for online linking of real-time data with Pollution control board (both State and Central), MoC servers, Coal India Limited (CIL), Kolkata - HQ servers and Western Coalfields Limited (WCL) – HQ Servers.
- **Technical Specification for CAAQM Stations:** The technical specification for all items in the complete CAAQM station should be in line with the technical specifications for CAAQM Station (Real Time) published by CPCB in their website vide notice dated 01.07.2019.
- The Bidder shall supply CAAQMS consisting of all sensors/ instruments/ analyzers/ interconnecting cables, special cables, cable glands, impulse tubing & fittings and other accessories to make the system complete in all respects for monitoring of above-mentioned parameters.
- Bidder shall provide only 1 no. of on-line UPS (1X5 KVA with 2 hr. back up) for analyzers at each CAAQMS station should be provided.
- Bidder shall provide computer system consisting of one PC along with Data Acquisition System (DAS) at CAAQMS station with peripherals and software for data acquisition, display, transfer and system integration (inclusive of software or provisions for transfer of data / linking to pollution control boards / MoC / CIL-HQ/ WCL-HQ servers) with genuine Antivirus software throughout warranty and CAMC period.
- Bidder shall provide all provision such as software / hardware (incl. software for transfer of data/ linking to Pollution control board server (CPCB / MPCB / MPPCB / MoC / CIL-HQ / WCL-HQ) with back-ups on storage media (HD) and also ensure the data connectivity during warranty and CAMC period. Data protocols for data transmission from CAAQM stations should be in line with CPCB specifications.
- Bidder shall supply 19"rack for Analyzers / Monitors.
- The system must function properly in the weather and atmospheric conditions of Coalfields in Maharashtra and Madhya Pradesh State.
- The exact location of the Station will be decided by WCL. WCL would provide basic amenities like water, fire extinguishers, electricity and internet at the proposed location.
- The successful bidder shall ensure supply of all spares and consumables required for smooth and unhindered operation of CAAQMS during warranty and CAMC period.
- The lightning protection and earthing of CAAQMS, sensors, meteorological and other instruments shall be constructed and maintained by successful bidder.
- The Engineer In charge for the purpose of contract shall be Nodal Officer (Environment) or any person authorized by CGM/GM of that particular area.

- Technical visit: - The bidder will render at-least 4 Technical / maintenance visit in a year during the warranty period of 3 years for periodic servicing including testing and calibration as per the technical/service/ operational manual of the manufacturer, labour and spares, after commissioning of CAAQMS. The visit should be recorded in the register. The preventive maintenance visit will be equally spaced per annum.
- SPARES AND CONSUMABLES: The successful bidder shall provide all spares, consumables, gases, for uninterrupted operation (including maintenance) of CAAQMS during onsite warranty period of three years and Comprehensive Annual Maintenance Contract (CAMC) period of five years after expiry of warranty period.
- Each set of analyzers shall be supplied with two copies of elaborate operation manuals comprising details in three parts: Parts (I) should comprise installation, operational and troubleshooting details; Parts (II) should have details about preventive, routine and corrective maintenance; Parts (III) should comprise details of all electrical, electronic and pneumatic circuit diagrams, details of each spare parts, Catalogue No. etc. and details of each electronic card / PCB's; Parts (IV) Schematic diagram for possible repair & maintenance; Parts (V) Standard Operating procedures (SOP) for each analyzer; Part (VI) List of equipment and other accessories along with contact details of supplier.
- Details of minimum requirements like input power, space, approach and any other associated facilities required for installation and commissioning of the CAAQMS shall be provided by the vendor in the offer.
- Vendor shall obtain statutory and other clearances for purchase, commissioning and maintenance of the CAAQMS during warranty and CAMC period, if required. No additional payment on this count will be given by WCL.
- The total cost for the complete system will be decided on the basis of cost of equipment with 3 years warranty + 5 years CAMC charges including all the taxes and duties.

**Drawings / Data / Documents to be submitted along with the Offer**

- i. Interconnection scheme drawing & Assembly drawing
- ii. Power requirement.
- iii. Instrument air requirement
- iv. Dimensional drawings of panels/ analyzers
- v. List of analog and alarm points going to DDCMIS.
- vi. System related other documents as required.
- vii. Quality Assurance Plan
- viii. Installation diagram for sampling probes, Monitors clearly indicating the flange size.
- ix. Layout drawing and dimensions of the room / building required for complete unit of CAAQMS and Meteorological sensors.

**Note:** This exercise is for preparing technical specifications of NIT & estimate preparation only. The final procurement will be done through GEM portal.

**Comprehensive Annual Maintenance Contract (CAMC) Terms and Conditions**

**Clause in Gem Portal:**

*Bidder / OEM has to give an undertaking that after expiry of warranty period, it will provide Comprehensive Maintenance Service for next 5 years for the offered products at the rate not more than 5 % of contract price per annum. Buyer reserves the right to enter into a CMC agreement with the Successful Bidder / OEM after expiry of the Warranty period at above mentioned rate and the payment for the CMC charges would be made Quarterly after rendering of the CMC Services of the relevant CMC period. Performance Security of the successful bidder shall be forfeited if it fails to accept the CMC contract when called upon by the buyer. CMC would include cost of all the services and maintenance, consumables, spare parts as mentioned in terms and conditions (Upload the undertaking). The original Performance Security of contract will be returned only after submission and verification of AMC Performance Security for 3% of total CMC value valid up to CMC period plus 2 months (if there is no other claim)."*

**CAMC Terms and Conditions**

1. CAMC will be considered as an integral part of supply order and whole unit without exception of any part / accessory, will be covered under CAMC.
2. The CAMC involves checking of the complete system including housing / shelter, ACs, analyzers, sensors, PC, Printers, UPS and batteries, preventive maintenance & service, emergency / breakdown maintenance & service, calibration of analyzers, repair, replacement of all defective parts of CAAQMS, Software support service, supply of all spares, consumables such as gases, computer stationery, toners, UPS batteries etc. during entire period of CAMC.
3. CAMC also includes replacement of defective parts as and when required so that CAAQMS is constantly kept in perfect working order. The payment to the maintenance contractor will be regulated on the basis of actual availability of CAAQMS in fully working status.
4. It will be the responsibility of successful bidder to procure and maintain adequate quantity of stock of spares at convenient place in consultation with WCL for quick replacement of damaged components / spares.
5. Earthing and lightening arrestors for CAAQMS and other instruments shall be maintained by successful bidder. Any repair / replacement necessitated due to lightening is covered under the scope of CAMC.
6. **Preventive maintenance visit:** - The bidder shall render at-least 4 preventive maintenance visits per year (equally spaced per annum) for periodic servicing including testing and calibration as per the technical / service / operational manual of the manufacturer, during the CAMC period of 60 months.
7. The successful bidder shall submit the Service reports of the above said preventive maintenance visit jointly signed by the service personnel and the concerned colliery Manager / Engineer of the respective mines of the area to the Nodal Officer (Environment) or in his absence any person authorized by CGM/GM.
8. **Break down visits-** The breakdown call should be attended within 72 hours. There will be any

number of breakdown visits, as and when required basis. Intimation of break down call should be passed on through emails only (The bidder has to communicate an official email id for registering / booking the breakdown calls).

9. **Period of repair:** The equipment should be repaired within a specified period i.e. the availability of the equipment should be at least 95% in each quarter of the year. Beyond that penalty clause will be invoked.
10. Failure due to power outage and other Force Major conditions shall not be considered for levy of penalty.
11. **Penalty Clause:** During the CAMC period the equipment are to be kept in working condition and give availability of at least 95% per quarter.

A penalty of 3% of CAMC charges for that quarter, will be imposed for each 1% decrease from a minimum level of 95% availability of the complete system. The penalty shall be recovered from their running bills / performance bank guarantee already deposited with the company.

If the availability of the equipment is below 85% for a particular quarter, no CAMC charges shall be paid for that particular quarter.

Formula for %age availability.

$$\% \text{ age availability} = \frac{A - (\text{Break down hours} - \text{Hours lost due to delay in giving Break down information})}{A} \times 100$$

Where A = No. of days in a quarter x 24 hrs.

#### 12. Terms and conditions of Payment:

- No advance payment shall be made.
- The payment of CAMC charges is payable on quarterly basis and based on the % availability of the equipment in working condition for that quarter.
- Submission of Bill: CAMC bill shall be submitted along with the Engineer's visiting reports of successful attending complaints or preventive maintenance of the equipment to the concerned colliery Manager / Engineer of the respective mines of the area. The bill shall be certified and routed through Area Nodal Officer (Environment) or any person authorized by CGM/GM of that particular area of WCL.
- Paying Authority for CAMC: Chief General Manager /Area Finance Manager of the respective Area of WCL.