

WEBEL TECHNOLOGY LIMITED

NOTICE INVITING e-TENDER

Online Tender bid are invited for Supply, Installation and Commissioning of 8(eight) number Continuous Ambient Air Quality Monitoring Station (CAAQMS) Various locations across various locations across West Bengal for West Bengal Pollution Control Board (WBPCB) along with Comprehensive Maintenance & Operation Contract (CMOC) of These CAAQMS installation for the period of 5 years.

Reputed manufacturer or authorized System integrator in the tender having sufficient experience and credentials for successful completion of “**Similar Nature**” of work in a Government Department/PSU/Autonomous Govt. Body in India. Bidder must have adequate Service Engineers for providing on-site support & warranty service within the stipulated time.

1.	Tender No. & Date	WTL/PCB/CAAQMS/22-23/019 dated 15.09.2022.
2.	Tender Version No.	1.0
3.	Brief description of Job	Supply, Installation and Commissioning of 8(eight) number Continuous Ambient Air Quality Monitoring Station (CAAQMS) at Various locations across West Bengal and Comprehensive Maintenance & Operation Contract (CMOC) of These CAAQMS installation for the period of 5 years.
4.	Tender Fee	Rs.10000.00 (Rupees Ten thousand only) The amount to be transferred online through e-tender portal.
5.	Earnest Money Deposit	Rs.2400000.00 (Rupees Twenty Four Lakhs only) The amount to be transferred online through e-tender portal.
6.	Date of Downloading	15.09.2022
7.	Pre-Bid Meeting date & time	23.09.2022 at 12.00 Hrs. (On-Line Meeting) Pre-Bid meeting will be organizing online platform only. Only queries as per format (Section - K) reaching WTL by 22.09.2022 at 15.00 Hrs. will be taken for decision. Interest bidders are requested to send mail to purchase@wtl.co.in for participation of online pre-bid meeting. Based on request WTL will share meeting id / links for meeting. If there is any change in date and time then will inform. Only queries as per format (Section – N) reaching WTL by 22.09.2022 at 15.00 Hrs. will be taken for decision. Queries will be sent to Manager (Purchase) (purchase@wtl.co.in).
8.	Bid Submission Start date & time	12.10.2022 at 14.00 hrs.
9.	Last date & time of EMD & Tender Fee submission	Before Uploading of Tender.
10.	Last date & time of Bid Submission	18.10.2022 at 13.00 Hrs.
11.	Date & time of Technical Bid Opening	20.10.2022 at 13.00 Hrs.
12.	WTL Address	WEBEL TECHNOLOGY LIMITED (A Govt. of West Bengal Undertaking) Plot - 5, Block – BP, Sector – V, Salt Lake City, Kolkata – 700091.

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Intending bidder may download the tender documents from the website <https://wbtenders.gov.in> directly with the help of Digital Signature Certificate. Necessary Tender fee may be remitted online through e-tender portal in favour of “Webel Technology Limited” and also to be documented through e-filing. Necessary Earnest Money Deposit (EMD) may be remitted online through e-tender portal in favour of “Webel Technology Limited” and also to be documented through e-filing. Alternatively, bidders may submit EMD in the form of Bank Guarantee (BG) as per the Form of Bid Security (Bank Guarantee)

Both Techno Commercial Bid and Financial Bid are to be submitted concurrently duly digitally signed in the website <https://wbtenders.gov.in>

Tender documents may be downloaded from website and submission of Techno Commercial Bid and Financial Bid will be done as per Time Schedule stated in Section – C of this Tender Document.

The Financial Bid of the prospective Bidder will be considered only if the Techno Commercial Bid of the bidder is found qualified by the Tender Committee. The decision of the ‘Tender Committee’ will be final and absolute in this respect. The list of Qualified Bidders will be displayed in the website.

All clarifications / corrigenda will be published only on the <https://wbtenders.gov.in>.

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SECTION – A

SCOPE OF WORK & RESPONSIBILITY

The bidder shall bid for Supply, Installation and commissioning of 8(eight) number Continuous Ambient Air Quality Monitoring Station (CAAQMS) at various locations across West Bengal and Comprehensive Maintenance & Operation Contract (CMOC) of this CAAQMS installation for the period of 5 years. The Stations in non-attainment cities of West Bengal location as part of National Clean Air Programme (NCAP) for The West Bengal Pollution Control Board (herein after shall be referred to as the State Board or WBPCB).

Detailed location list given in Section - I.

1.0 DETAILS OF PROJECT STRUCTURE:

Supply, Installation and Commissioning of 8(eight) number Continuous Ambient Air Quality Monitoring Station (CAAQMS) at Various locations across West Bengal and Comprehensive Maintenance & Operation Contract (CMOC) of These CAAQMS installation for the period of 5 years.

After completion of the Work, bidder shall submit a completion certificate duly vetted through the committee of the State Board.

CMOC of the CAAQMS Equipment for a period of 5 years from the date of it's commissioning including employment of required CMOC personnel.

Daily reporting and transfer of data on line pertaining to Ambient Air Quality to WBPCB at Kolkata & CPCB (Central Pollution Control Board) at Delhi and the Display Boards at the time of installation of the CAAQM systems.

WBPCB would procure all the CAAQMS equipment on its name

WBPCB would provide land free from all encumbrances for installation of monitoring stations free of cost, in the mentioned place to the Successful Bidder.

All the CAAQM stations are to be integrated to the existing CAAQM central server located in of WBPCB. The bidder shall agree to transfer such data online to the server of the WBPCB every 1 minute and 15 minutes via secured REST API provided by WBPCB, to allow the Board to insert the data into its own server. All information regarding the database, data structure, ER diagram, data migration design, and access passwords for making this data availability smoothly has to be handed over to the Board.

In addition to installation of the CAAQM stations the bidder have to install data display boards at a suitable position(s) within a distance of 100 meters from the place of the CAAQMS. The shall arrange all required permissions for installations of such display board and shall make access for the CMOC personnel to the display board for purpose of maintenance/cleaning as and when required during the material time of the contract.

2.0 SCOPE OF SERVICES

The equipment's are to be quoted as single package. The Scope of Works under the package shall include:

The supply is including packing, transportation, insurance, custom clearance, port clearance and handling, inland transportation, inland transit insurance and delivery to site, installation, testing and commissioning of equipment and provision of training of WBPCB official.

CMOC of Air Monitoring Stations for a period of five (5) years from the date of commissioning of the station, which can be extended up to five (5) years at the mutually agreed rates and terms & conditions.

The bidder shall provide the following manpower for smooth running and performance of the CAAQM system. This resource shall be exclusively associated with the project and has to attend the stations and other obligations in relation to the functioning of the stations and monitoring vans as and when required by the Board.

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	Responsibility	No. of Persons	Minimum Qualification	Experience
i)	Team Leader	1	Graduate Engg./ M.Sc.	4 Years
			Diploma (Electronics/C&I /Electrical/ CSE / ECE/ IT/ Physics / Chemistry) / B. Sc. Or equivalent	5 Years
ii)	Technician	1	Diploma in Electronics/C&I/Electrical or equivalent	3 Years
ii)	Data Processor	1	Graduate	2 Years

Reporting of data pertaining to CAAQMS to WBPCB.

On line transfer of data to WBPCB head office and CPCB head office at Delhi.

Other services involved with performance of the Works are specified in General and Special Conditions of Contract of bid document

3.0 MINIMUM SPECIFICATIONS

The minimum technical specification requirements for the CAAQMS to be installed at the locations are provided along with this document. However, the actual technical proposal can have higher or better technical performance parameters and the minimum specifications proposed should not be taken as a constraint on the upper side. The technical specifications given are descriptive and the Board may consider technical proposals having similar specifications.

4.0 DESIRED OUTPUT FOR CAAQMS EQUIPMENT

The desired output requirements from the CAAQMS Equipment to be installed are given in Attachment 2 to 6 with of bid document. Format may vary based on the requirement.

5.0 DATA MANAGEMENT AND QUALITY CHECKS

Data shall be collected and validated according to procedures, standards and methodologies approved by the MOEF / CPCB. All analyzers shall be of latest design and shall have conformities as specified in the detailed specification section in Part II of this bidding document.

Successful Bidder shall submit a Standard Operating Procedure for the air quality monitoring stations to the Board at the time of bid submission. This Standard Operating Procedure shall be approved by the Board prior to award. The Standard Operating Procedure shall contain the following:

- Operating procedures for all analyzers and meteorological sensors
- Calibration procedures
- Calibration schedule Maintenance procedures
- Maintenance schedule
- Data validation procedures

Data obtained from these calibration checks and copies of associated Quality Assurance and calibration documentation, shall be submitted to the Board along with the Air Quality Data.

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The calibration procedures for analyzers shall conform to US EPA methodologies and shall include, at a minimum, daily calibration checks, bi-weekly precision checks and linearity checks every six weeks. All analyzers shall undergo full calibration every week. Data obtained from these calibration operation exercise, checks and copies of associated Quality Assurance and calibration documentation, shall be submitted to the Board along with the Air Quality Data.

Air Quality Data shall be submitted to the Board on a monthly basis in the form of an Air Quality Report.

This report shall include, at a minimum, tabular and graphic information on gas and dust concentrations as well as meteorological data for each site. The data shall be reported in the form of 15 minute averages and shall also include daily, weekly and monthly averages, minimums, maximums, standard deviations, total data captured and percent data captured. This means every channel shall produce 96 records per day. A day's data shall be considered as acceptable if the DCR (Data Capture Rate - % of validated and correctly recorded data per day) for that day remains above 90%. The recording slots consumed on a particular day for calibration purpose shall not be considered as lost data and for maintenance (excepting 10 hours per month for routine maintenance for the entire system taken together, not exceeding four hours per week) or any other purposes shall be considered as lost data for DCR calculation. The Developer however shall specifically mention the required calibration period for each and every analyzer in the SOP and get the same approved by the Board. The Air Quality Report shall also include wind roses where wind speed and direction are measured.

Outliers are "measurements that are extremely large or small relative to the rest of the data and are suspected of misrepresenting the population from which they were collected". When reviewing data, some potential outliers will be obvious such as, spikes in concentrations, data remaining the same for hours, or a sudden drop in concentration but still in the normal range of observed data. Many of these outlier checks can be automated and provide efficient real-time checks of data. Outliers do not necessarily indicate the data is invalid; they serve to alert the station operator and/or data reviewers there may be a problem. In fact, the rule of thumb for outliers should be that the data be considered valid until there is an explanation for why the data should be invalidated. At some point it may be necessary to exclude outliers from instantaneous reporting, and the bidder shall provide such explanations for data validation during their daily reporting. The strategy of outlier identification shall be an integral part of the related SOP and shall have to be submitted to the Board for approval. Unexplainable outliers shall be identified as "UNACCEPTABLE DATA" and shall not be considered as valid one for DCR calculation.

Upon 24 hour notice in writing, through e-mail or over phone from the Board, once per year, the Contractor shall submit an audit of calibration conducted using pre-approved methodologies. The results of these audits shall be made immediately available to both the Board and the Contractor. The Board shall have the right to perform calibration check, calibration operation and other inspections relating to the performance and maintenance of the station and analyzers upon similar notice at any time during the contract period.

Operator shall participate in Proficiency Testing Exercise organized by the CPCB as and when the programme is launched.

Working Hours:

Appropriately knowledgeable operator should be made available to a station within 24 hours of notice (as mentioned above) at site for explaining the functioning, validation and related technical issues of the CAAQM station(s). Successful Bidder/developer would arrange for a security of the site and equipment through appointment for security agency (providing at least one security guards) throughout the day. Security issue is to be dealt by the successful bidder. The cost of this component is not to be mentioned in finance bid as the requirement will be site specific, and will be taken up at the time of awarding. The cost will be reimbursed at actuals as per the rate of the Government of West Bengal.

Insurance: Successful Bidder would bear the cost of insuring (in favor of the Board as beneficiary) the equipment and facilities against any theft, fire and other applicable provisions during tenure of contract period including CMOG.

Unpacking Inspection

The Contractor shall inspect at each Site whether all the Equipment are packed in conformity with the Equipment list and packing list without any damage immediately after arrival of the Equipment at each site. The Contractor shall prepare the unpacking inspection report and submit it to the WTL.

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Performance Test

The Contractor shall carry out the performance test for all the Equipment supplied under the scope of work of this document.

In case the Equipment for performance test requires the supplemental and /or supporting Equipment, the Contractor shall carry out the performance test including such Equipment.

PROVISION OF TRAINING

The Supplier shall provide the training to the Board staff at WBPCB after the performance test and commissioning. Training should include but not limit to the followings:

- 1) Inspection of the Equipment.
- 2) Precautions in use of the Equipment.
- 3) Basic measurement principle.
- 4) Principles of operation of the Equipment.
- 5) Start-up and shutdown procedure.
- 6) Operation of the Equipment.
- 7) Calibration method.
- 8) QA/QC
- 9) Data management and software application.
- 10) Safety precautions
- 11) Basic maintenance procedure.
- 12) "Do's" and "Don'ts" in operation of the Equipment.
- 13) Handling of hazardous chemicals and gas.
- 14) Others, which are deemed to be necessary by the Supplier.

In case the Equipment for training requires the supplemental and/or supporting Equipment, the Supplier shall carry out the training including such Equipment.

The Supplier shall discuss and finalize the detailed contents and schedule of the training program in consultation with the Board & WTL during installation of the Equipment.

The Supplier shall furnish the training manual and/or CD as required for training for all the Equipment supplied under the scope of work of this document.

Contents of training manual and/or CD for the Equipment are as follows:

1. Operation and calibration of the Equipment.
2. Maintenance and basic repair of the Equipment.
3. Safety instruction of the Equipment.
4. Others, which are deemed to be necessary by the Supplier.

OPERATION & MAINTENANCE OF AIR MONITORING STATIONS

The Contractor's responsibilities shall include without limitations the following works to be carried out on the Air Monitoring Stations installed under this Contract during the Operation & Maintenance of the stations:

CMOC of all the commissioned equipment and amenities as supplied by the Manufacturer under the Contract including services during forced and planned outages and overhauls.

The Contractor shall take over the entire Air Monitoring Stations (including all equipment) for CMOC after execution of Indemnity Bond (format will be given after LOA) of bid document.

The Contractor shall provide to the owner a quarterly summary of all operation and maintenance activities performed by the contractor during such month.

CMOC Obligations: In implementing its obligations to operate and maintain the Facility under this Contract, the Contractor shall:

Undertake comprehensive maintenance including i.e., schedule and breakdown maintenance & repair at site and keep Board Informed regarding status of equipment and forward daily data as per Attachment 3 of Section – II.

Obtain permission from the owner and inform the OEM for any assistance for which equipment is required to be sent to works. Contractor shall arrange substitute equipment to keep CAAQM station operational.

Take reasonable action to assure that the Personnel deployed at Air Monitoring Stations and any subcontractors and agents are provided with a work place in compliance with Applicable Law.

Keep the Air Monitoring Stations clean, well maintained and in good working condition.

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Security: It is the duty of the Contractor to secure the movable, immovable and other properties of the Owner at the Air Monitoring Stations. The Contractor shall indemnify the loss caused to the Owner on account of any damage, loss or theft caused to the property of the Owner.

Scheduled Maintenance: Unless Owner and Contractor mutually agree otherwise, perform all required Scheduled Maintenance for all equipment, auxiliaries etc., in accordance with the OEM's specifications.

Unscheduled Maintenance: Perform all Unscheduled Maintenance and repairs for all equipment, auxiliaries etc. within [24] hours of the occurrence of the event requiring Unscheduled Maintenance, the operator shall provide the Owner with detailed written information on nature of the repair or replacement to be carried out, estimated down time and other necessary details as required.

The Contractor shall source all the spares required for maintenance & repairs of the installed equipment from OEM's only.

The Contractor shall not:

Make any modifications as to the Air Monitoring Stations, other than in an Emergency, without the prior written approval of the Owner, or

Dispose of any assets, settle law-suits or engage in transactions relating thereto on the Owner's behalf without the prior written approval of the Owner.

The Contractor shall purchase spare parts, materials, supplies and other consumable items, and maintain an inventory thereof, for the Air Monitoring Stations. All such material supplied and other items shall be the property of the Contractor. However all the spares shall be sourced from OEM's only.

The Contractor shall review all applicable Environmental Laws and initiate and maintain such precaution, procedures and operating plans relating to operation of the Air Monitoring Stations as are necessary to comply therewith or assist the owner in complying therewith as the case may be.

The Contractor shall be operating the equipment as per the laid out standards in the operating manual of the equipment and providing data for ambient air to WBPCB on daily basis in the suggested format.

Individual analyzers of the AAQMS has to be in operation for periods excepting for routine maintenance, a minimum of 350 days in a year, 24 hours a day, and should not be inoperable for more than 3 days at a stretch. The Contractor shall provide WBPCB with data collected through operation of the equipment on daily basis in suggested output formats given in Attachment 3 to 6 of the bid document. The Contractor shall:

- i) Establish and maintain a daily and monthly reporting system to provide storage and ready retrieval of operation and maintenance data including such information necessary to verify calculations. The monthly reporting shall contain variances from targets.
- ii) Provide access to the Owner to the Air Monitoring Stations and its data at all reasonable times.
- iii) Provide the operational data required to all competent authorities including, Government of India or concerned state governments.
- iv) Transfer data on-line to WBPCB head office at Kolkata and the CPCB head office at Delhi.
- k) The Contractor shall ensure accuracy of the data provided as per standards.
- l) The contractor shall ensure periodic re-calibration of all the equipment as per manufacturer's instructions and maintain "Protocol Manual Calibration" as per Attachment.
- m) The Contractor shall be responsible to ensure that the Contract Performance Guarantee amounting to 3% of Total Contract Price is kept valid upto forty five (45) days after the expiry of the CMOC period. Any failure of the Contractor to meet the aforesaid obligation shall result in encashment of the Contract Performance Guarantee by the Owner.

Handing Over of Station

On expiry/closure/termination of the Contract Agreement, stations shall be handed over to the Board in appropriate working condition to be demonstrated to the Board for a period of at least 3 days at a stretch within one month before the handing over. Few or all the spares procured by the Contractor and unused as on date of handing over may be purchased by the Owner at his discretion provided Contractor is able to provide reasonability of the costs of such spares. In addition, the Contractor shall provide consumables equivalent to three months consumption on expiry /closure/termination of the Contract Agreement without any extra financial implication.

Relocation of Station

During contract period, if Board intend to shift CAAQM station from one location of the city to another location, due to some unavoidable reason - functional or otherwise, Bidder shall shift the CAAQM station for which cost of shifting including dismantling, loading & transportation, reinstallation at new location and construction of foundation will be made by the Board at a mutually agreed cost.

Penalties

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During CMOC period, in case of any system failure, penalty will be charged by the Board @ Rs.1,000/- per day per Analyzer after a grace period of three (3) continuous non-working days. The grace period of three (3) continuous non-working days shall be given only once per quarter (3 months).

Failure due to power outage (for a continuous period of 6 hours or more to be certified by the corresponding power distribution authority) and other Force Majeure conditions shall not be considered for levy of penalty.

Total penalty per year during CMOC period on account of above conditions shall be limited to the monthly CMOC charges payable.

In case penalty in a period of any twelve successive months exceeds 15%, i.e., 15% of the entire CMOC contract value for that year for that station, the Contractor shall be required to replace the defective analyzer(s) or systems with new ones at his own cost, failing which the Board shall have the right to terminate the CMOC contract. Penalty at the rate of Rs. 5000/- per day per station shall be charged for each day of delay of setting the system right after the said 12 months period.

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SECTION – B

ELIGIBILITY CRITERIA

1. The bidder must be a company registered under Companies Act, 1956/2013 or Partnership or LLP or OPC or Proprietary Firm. Documentary (Certificate of incorporation/Relevant document) evidence to be submitted.
2. The bidder should have their presence in Kolkata with own office. Valid proof should be submitted along with the bid.
3. The bidder should have valid GST Registration Certificate & PAN. Bidder shall have to submit photocopy of the documents.
4. The bidder shall have executed “Similar Nature” of single order an amount not less than total Rs.5.00 Cr. in last three financial years and current financial year (considering FY – 2019-20, 2020-21, 2021-22) in Government Department/PSU/Autonomous Govt. Body. References order copy for the project to be provided.
5. Bidder should have local call center number & OEM should have Central Call Center number. Call Center details for Bidder & OEM with number & detailed to be submitted.
6. The bidder should have an average turnover of not less than Rs.4.00 Cr. in the last three financial years (considering FY –2019-20, 2020-21, 2021-22)). Bidder shall have to submit Audited Balance Sheet / Audited Accounts / Auditor Certificate in support of their claim.
7. Manufacturer’s tender specific authorizations for CAAQMS & peripherals must be submitted as per format enclosed (Section – M).
8. The Bidder must have own Support Service Center in Kolkata and manpower in Kolkata as well as districts (one at North Bengal) so that any call reported is attended within the response time. Details address with contact details for Support Service Center at Kolkata to be submitted.
9. OEM should have Authorized service center/replacement centers in Kolkata to be submitted by respective OEMs.
10. The bidder shall submit Bid Form (Section – E) duly signed by the authorized signatory of the company as per the format enclosed. Deviation in format may not be accepted.
11. Bidder shall submit NIT Declaration (Section – R) duly signed by the authorized signatory of the company as per the format. Deviation in format may not be accepted.
12. The bidder shall not have been blacklisted by any State/Central Government or PSU Organization or bilateral/multilateral funding agencies for breach of ethical conduct or fraudulent practices as on date of submission of the proposal (as per DIT guidance note issued on 26-Dec-2011). Declaration on bidder’s letter head to be submitted.

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SECTION – C

DATE AND TIME SCHEDULE

Sl. No.	Particulars	Date & Time
1	Date of uploading of N.I.T. & other Documents (online) (Publishing Date)	15.09.2022
2	Documents download/sale start date (Online)	15.09.2022
3	Last Date and time of sending the queries (Offline)	22.09.2022 at 14.00 Hrs.
4	Pre Bid Meeting (On Line)	23.09.2022 at 12.00 Hrs.
5	Corrigendum, if any will be published (On Line)	-
6	Bid Submission start date & time (On line)	12.10.2022 at 14.00 hrs.
7	Last Date & time of submission of Earnest Money Deposit & submission of remittance details	Before Uploading of Tender
8	Last Date & time of submission of Tender Fee & submission of remittance details	Before Uploading of Tender
9	Bid Submission closing date & time (On line)	18.10.2022 at 13.00 Hrs.
10	Bid opening date & time for Technical Proposals (On line)	20.10.2022 at 13.00 Hrs..
11	Date of uploading the final list of Technically Qualified Bidder (online) after disposal of appeals, if any	-
12	Date for opening of Financial Bid (Online)	-

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SECTION – D

INSTRUCTION TO BIDDER

1. DEFINITIONS

In this document, the following terms shall have following respective meanings:

“Acceptance Test Document” means a document, which defines procedures for testing the functioning of installed system. The document will be finalized with the contractor with in 7 days of issuance of the Letter of Award.

“Bidder” means any firm offering the solution(s), service(s) and /or materials required in the RFP. The word Bidder when used in the pre award period shall be synonymous with Bidder, and when used after award of the Contract shall mean the successful Bidder.

“Contract” is used synonymously with Agreement.

“Contract Price” means the price to be paid to the Contractor for providing the Solution, in accordance with the payment terms.

“Contractor” means the Bidder whose bid to perform the Contract has been accepted by Tender Committee and is named as such in the Letter of Award.

“Default Notice” shall mean the written notice of Default of the Agreement issued by one Party to the other.

“Installation” shall mean installation of supplied CAAQMS & peripherals.

“Fraudulent Practice” means a misrepresentation of facts in order to influence a procurement process or the execution of a Contract and includes collusive practice among Bidders (prior to or after Bid submission) designed to establish Bid prices at artificial noncompetitive levels and to deprive the Calcutta High Court and eventually Gov. of W. Bengal of the benefits of free and open competition.

“Good Industry Practice” shall mean the exercise of that degree of skill, diligence and prudence which would reasonably and ordinarily be expected from a reasonably skilled and experienced Operator engaged in the same type of undertaking under the same or similar circumstances.

“Government” / “Gov. of W. Bengal” means the Government of West Bengal.

“GoI” shall stand for the Government of India.

“GoWB” means Government of West Bengal

“Personnel” means persons hired by the Bidder as employees and assigned to the performance of the Infrastructure Solution or any part thereof.

“Similar Nature of Work” means supply, installation, commissioning & handing over of equipment for Continuous Air Quality Monitoring Stations/Equipment and Comprehensive Maintenance & Operation Contract (CMOC) of these equipment.

“Project” means supply, installation, commissioning & handing over of equipment for Continuous Ambient Air Quality Monitoring Stations (CAAQMS) and Comprehensive Maintenance & Operation Contract (CMOC) of these CAAQMS.

“Services” means the work to be performed by the Bidder pursuant to this Contract, as described in the detailed Scope of Work.

“Interest rate” means “364 days Government of India (GoI) Treasury Bills” rate.

“Law” shall mean any Act, notification, bye law, rules and regulations, directive, ordinance, order or instruction having the force of law enacted or issued by the Central Government and/or the Government of West Bengal or any other Government or regulatory authority or political subdivision of government agency.

“LOI” means issuing of Letter of Intent shall constitute the intention of the WTL to place the Purchase Order with the successful bidder.

“Operator” means the company providing the services under Agreement.

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“**Requirements**” shall mean and include schedules, details, description, statement of technical data, performance characteristics, standards (Indian as well as International) as applicable and specified in the Contract.

“**Service**” means provision of Contracted service viz., operation, maintenance and associated services for DEPLOYED SYSTEMS as per Section titled “Scope of Work”

“**Termination Notice**” means the written notice of termination of the Agreement issued by WTL.

“**Uptime**” means the time period when specified services are available with specified technical and service standards as mentioned in section titled WARRANTY SUPPORT” “**%Uptime**” means ratio of ‘up time’ (in minutes) as mentioned in section titled “Warranty support”

“**Service Down Time**” (SDT) means the time period when specified services with specified technical and operational requirements as mentioned in section titled “WARRANTY SUPPORT” are not available to Gov. of W. Bengal and its user departments and organizations.

“**WBPCB**” or “**The Board**” Or “**Owner**” means the West Bengal Pollution Control Board (WBPCB), India, having its office at Paribesh Bhawan, 10A, Block LA, Sector III, Kolkata - 700106. Webel Technology Limited (WTL) is the executing agency of the Project.

“**WTL**” means Webel Technology Limited a Govt. of West Bengal undertaking.

“**CPCB**” means Central Pollution Control Board

2. PRE BID MEETING

Pre Bid Meeting will be held on 23.09.2022 at 12.00 Hrs. (**On-Line Meeting**). Bidder can send their queries as per format (Section – N) to Manager (Purchase) (purchase@wtl.co.in). Only the queries received within the stipulated date prior to the Pre Bid Meeting will be answered. Interest bidders are requested to send mail to (purchase@wtl.co.in) for participation of online pre-bid meeting Based on request WTL will share meeting id / links for meeting. If there is any change in date and time then will inform.

3. COST OF BIDDING

The bidder shall bear all costs associated with the preparation and submission of the bid and WTL will no case be responsible for those costs regardless of the conduct or outcome of the bidding process.

4. BID DOCUMENT

Bidder is expected to examine all instructions, forms, terms and requirement in the bid document. The invitation to bid together with all its attachment thereto shall be considered to be read, understood and accepted by the bidder unless deviations are specifically stated in the seriatim by the bidder. Failure to furnish all information required by the bid document or a bid not substantially responsive to the bid document in every respect may result of the bid.

5. AMENDMENT OF BID DOCUMENT

At any time prior to the deadline for submission of proposals, WTL reserves the right to add/modify/delete any portion of this document by issuance of an Corrigendum, which would be published on the website and will also be made available to the all the Bidder who have been issued the tender document. The Corrigendum shall be binding on all bidders and will form part of the bid documents.

6. MODIFICATION AND WITHDRAWAL OF BIDS

As per the bidding process available in the tender. The bidder cannot modify or withdraw its bid after submission.

7. LANGUAGE OF BID & CORRESPONDENCE

The proposal will be prepared by the Bidder in English language only. All the documents relating to the proposal (including brochures) supplied by the firm should also be in English, and the correspondence between the Bidder & WTL will be in English language only. The correspondence by fax/E-mail must be subsequently confirmed by a duly signed formal copy.

8. BIDDER'S SOLUTION

The bidders are requested to study the Bill of Material supplied with this document carefully. While working out the solution the bidder has to work with the broad minimum specification provided in the tender documents, conforming to the model, make and Part number (wherever provided). While submitting the bid the bidder has to detail out all components needed to complete the system BOM. The bidder is required quote for each item retaining all major components/sub system detailed and specified. As the contractor will be responsible for smooth functioning of the system, availability of spares during the tenure of the warranty period have to be take care by the contractor to maintain the guaranteed uptime.

9. EARNEST MONEY DEPOSIT (EMD) / TENDER FEE

The bidder shall furnish Online Receipt against payment of Tender Fees and Earnest Money Deposit.

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10. REFUND OF EMD

EMD will be refunded to the unsuccessful bidders without interest by following guidelines of circular 3975-F(Y) dated 28/07/2016 on final selection of Successful Bidders.

11. FORFEITURE OF EMD

EMD made by Bidder may be forfeited under the following conditions:

If Bidder withdraws the proposal before the expiry of validity period.

During the evaluation process, if a Bidder indulges in any such activity as would jeopardize the process, the decision of WTL regarding forfeiture of EMD shall be final and shall not be called upon question under any circumstances.

If Bidder violates any of the provisions of the terms and conditions of the proposal.

In the case of a successful Bidder, if Bidder fails to:

- a) Accept the work order along with the terms and conditions.
- b) Furnish performance security.
- c) Violates any of the work conditions of this proposal or indulges in any such activities as would jeopardize the work.
- d) Submitting false/misleading information/declaration/documents/proof/etc.

The decision of WTL regarding forfeiture of EMD shall be final and shall not be called upon to question under any circumstances, besides, forfeiture of EMD even the Bidder will be deferred from participating in any job for a period of one year.

12. FORMS AND FORMATS

The various inputs for the Techno Commercial as Financial Bids are to be submitted in the format specified. The bidder shall use the form, wherever specified, to provide relevant information. If form does not provide space for any required information, space at the end of the form or additional sheets shall be used to convey the said information. For all other cases, the bidder shall design a form to hold the required information.

13. LACK OF INFORMATION TO BIDDER

The bidder shall be deemed to have carefully examined the Bid document to his entire satisfaction. Any lack of information shall not relieve the bidder of his responsibility to fulfill his obligation under the bid. If bidder has any queries relating to bid document, then he can send the queries before the Pre-Bid Meeting.

14. CONTRACT EXECUTION

On receipt of the Letter of Award the contractor should submit a Performance Bank Guarantee (PBG) equivalent to 3% (three) of the total contract value within three weeks from the date of receipt of Letter of Award/Order. The PBG should be valid for six months more than the warranty period.

15. TIME SCHEDULE FOR DELIVERY & INSTALLATION

Back-to-Back AMC document from OEM will be provided to comply the SLA terms & conditions.

16. LIQUIDATED DAMAGE / PENALTY

The job includes the Annual Maintenance support of the materials as mentioned in the tender document. In the event of failure to meet the SLA in stipulated date / time liquidated damage may be imposed as per the penalty clause under SLA (Section - Q) subject to a ceiling of 10% of the total contract value (excluding all taxes & duties and other charges). In the event of LD exceeds 10% of the order value, WTL reserves the right to terminate the contract and WTL will get the job completed by any other competent party. The difference of cost incurred by WTL will be recovered from the contractor and PBG will be invoked.

17. LIABILITY

In case of a default on bidder's part or other liability, WTL shall be entitled to recover damages from the Contractor. In each such instance, regardless of the basis on which WTL is entitled to claim damages from the Contractor (including fundamental breach, negligence, misrepresentation, or other contract or tort claim), Contractor shall be liable for no more than:

- Payment referred to in the Patents and Copyrights clause.
- Liability for bodily injury (including death) or damage to real property and tangible personal property limited to that cause by the Contractor's negligence.
- As to any other actual damage arising in any situation involving non-performance by Contractor pursuant to or in any way related to the subject of this Agreement, the charge paid by WTL for the individual product or Service that is the subject of the Claim. However, the contractor shall not be liable for
- For any indirect, consequential loss or damage, lost profits, third party loss or damage to property or loss of or damage to data.
- For any direct loss or damage that exceeds the total payment for Contract Price made or expected to be made to the Contractor hereunder.

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18. PATENTS & COPYRIGHT

If a third-party claims that a product delivered by the Contractor to WTL infringes that party's patent or copyright, the Contractor shall defend WTL against that claim at Contractor's expense and pay all costs, damages, and attorney's fees that a court finally awards or that are included in a settlement approved by the Contractor, provided that WTL.

- Promptly notifies Contractor in writing of the claim
- Allows Contractor to control and co-operate with Contractor in the defense and any related settlement negotiations.

Remedies: If such a claim is made or appears likely to be made, WTL would permit Contractor to enable WTL to continue to use the product, or to modify it, or replace it with one that is at least functionally equivalent. If Contractor determines that none of these alternatives is reasonably available, WTL agrees to return the product to Contractor on Contractor's written request. Contractor will then give WTL a credit equal to for a machine. WTL's net book value (provided WTL has followed generally accepted accounting principles for a generally available software product produced by Contractor (Program) the amount paid by WTL or 12 months charges (whichever is lesser) and for materials the amount paid by WTL for the materials. These will be Contractor's entire obligation regarding any claim of infringement.

19. SUSPENSION OF WORK

WTL shall have the power at any time and from time to time by notice to the Contractor to delay or suspend the progress of the work or any part of the work due to any other adequate reasons and on receipt of such notice the contractor shall forthwith suspend further progress of the work until further notice from WTL. The Contractor shall recommence work immediately after receiving a notice to do so from WTL. The whole or any part of the time lost for such delay or suspension shall, if WTL in its absolute discretion thinks fit, but not otherwise, be added to the time allowed for completion.

20. TERMS OF PAYMENT

Payment terms will be on back-to-back basis, i.e., payment will be made only on receipt of payment from relevant customer, i.e., WBPCB.

21. GOVERNING LAWS

This contract should be governed by and interpreted by Arbitration clause in accordance with Laws in force in India. The courts at Kolkata shall have exclusive jurisdiction in all matters arising under the contract. The selected vendor shall keep himself fully informed of all current national, state and municipal law and ordinances. The selected vendor shall at their own expense, obtain all necessary permits and license and pay all fees and taxes required by law. These will be selected vendor's entire obligation regarding any claim of infringement. The selected vendor hereto agrees that it shall comply with all applicable union, state and local laws, ordinances, regulations and codes in performing its obligations hereunder, including the procurement of licenses, permits certificates and payment of taxes where required. The selected vendor shall establish and maintain all proper records (particularly, but without limitation, accounting records) required by any law, code/practice of corporate policy applicable to it from time to time including records and returns as applicable under labor legislation.

22. CORRUPT OR FRAUDULENT

The Tender Committee requires that the bidders under this Tender observe the highest standards of ethics during the procurement and execution of such contracts. For this purpose, the definition of corrupt and fraudulent practices will follow the provisions of the relevant laws in force. The Tender Committee will reject a proposal for award if it detects that the bidder has engaged in corrupt or fraudulent practices in competing for the contract in question. The Tender Committee will declare a firm ineligible, either indefinitely or for a stated period of time, if it at any time determines that the firm has engaged in corrupt and fraudulent practices in competing for, or in executing, a contract.

23. BIDDING CLAUSE

All decisions taken by the Tender Committee regarding the processing of this tender and award of contract shall be final and binding on all parties concerned.

The Tender Committee reserves the right:

- To vary, modify, revise, amend or change any of the terms and conditions mentioned above and,
- To reject any or all the Tender/s without assigning any reason whatsoever thereof or to annul the bidding process and reject all bids at any time prior to award of contract, without thereby incurring any liability to the affected bidder(s) or any obligation to inform the affected bidder(s) of the grounds for such decision.

24. WORKMEN'S COMPENSATION

In every case in which by virtue of the provision of the workmen's compensation Act 1923 or any other relevant acts and rules, compensation to a workmen employed by the contractor, is payable, then this should be done by the Contractor. If WTL is obliged to make any compensation under the said rules and acts, then the amount shall be recovered without prejudice, from the bills and due of the Contractor. WTL shall not be bound to contest any claim made against the Contractor in respect of workmen's compensation.

25. CONTRACTOR'S EMPLOYEES

The Contractor shall comply with the provision of all labour legislation including the requirement of the payment of Wage Act 1936 and the rules framed there under and modifications thereof in respect of men employed by him in carrying out the contract. The Contractor must ensure that he complies with PF, ESI regulation for all his deployed employees. The Contractor shall see that all authorized Sub Contractors under him similarly complied with the above requirement.

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26. SAFETY MEASURES

The Contractor shall in the course of execution of the work take all necessary precaution for the protection of all persons and property. The Contractor shall take adequate measures to protect the work and prevent accident during the work. In the event of any accident to any person or persons or damage or injury of any description to any person or property due to failure on the part of the contractor in taking proper precautionary measures the contractor shall be responsible for and must make good the loss the damage at his own cost to the satisfaction of the department and employees of the department shall be indemnified from all claims or liabilities arising there from or any expenses incurred on account thereof.

27. EQUIPMENT

All tools & tackles necessary for the work shall have to be procured by the contractor unless otherwise specified elsewhere in these tender documents. The equipment used by the contractor for a particular work must be appropriate for the type of work. The contractor shall maintain the equipment used on the work properly so that they are in good working condition. In no case shall the contractor use defective or imperfect equipment in the work. The contractor shall arrange to replace or repair all defective equipment so that the progress of the work is not hampered. No defective equipment should be left at the site of work and the department shall not be responsible for any loss or damage to any of these equipments during the course of the execution of the work.

28. SUB-CONTRACT

The purchaser (WTL) does not recognize the existence of Sub-Contractors. The Contractor's responsibility is not transferable. No consortium partner is allowed.

29. TERMINATION FOR DEFAULT

WTL may without prejudice to any other remedy or right of claim for breach of contract by giving not less than 30 days written notice of default sent to the contractor, terminate the order in whole or in part. If the contractor materially fails to render any or all the services within the time period specified in the contract or any extension thereof granted by WTL in writing and fails to remedy its failure within a period of thirty days after receipt of default notice from WTL. If the project (delivery, commissioning as well as warranty maintenance support is not carried out according to specification due to deficiency in service as per terms of the contract. In such case WTL will invoke the amount held back from the contractor as PBG.

30. BANKRUPTCY

If the contractor becomes bankrupt or have a receiving order made against him or compound with his creditors or being a corporation commence to be wound up, not being a voluntary winding up for the purpose only or amalgamation or reconstruction, or carry on their business under a receiver for the benefit of their creditors or any of them, WTL shall be at liberty to terminate the engagement forthwith without any notice in writing to the contractor or to the liquidator or receiver or to any person in whom the contractor may become vested and without any compensation to give such liquidator or receiver or other person the option of carrying out the engagement subject to their providing a guarantee for the due and faithful performance of the engagement up to an amount to be determined by WTL.

31. FORCE MAJEURE

It is hereby defined as any cause, which is beyond the control of the Contractor or WTL as the case may be, which such party could not foresee or with a reasonable amount of diligence could not have foreseen and which substantially affect the performance of the contract, such as

- War, Hostilities or warlike operations (whether a state of war be declared or not), invasion, act of foreign enemy and civil war.
- Rebellion, revolution, insurrection, mutiny, usurpation of civil or military, government, conspiracy, riot, civil commotion and terrorist area.
- Confiscation, nationalization, mobilization, commandeering or requisition by or under the order of any government or de facto authority or ruler, or any other act or failure to act of any local state or national government authority.
- Strike, sabotage, lockout, embargo, import restriction, port congestion, lack of usual means of public transportation and communication, industrial dispute, shipwreck, shortage of power supply epidemics, quarantine and plague.
- Earthquake, landslide, volcanic activity, fire flood or inundation, tidal wave, typhoon or cyclone, hurricane, nuclear and pressure waves or other natural or physical disaster.

If either party is prevented, hindered or delayed from or in performing any of its obligations under the Contract by an event of Force Majeure, then it shall notify the other in writing of the occurrence of such event and the circumstances of the event of Force Majeure within fourteen days after the occurrence of such event. The party who has given such notice shall be excused from the performance or punctual performance of its obligations under the Contract for so long as the relevant event of Force Majeure continues and to the extent that such party's performance is prevented, hindered or delayed.

The party or parties affected by the event of Force Majeure shall use reasonable efforts to mitigate the effect of the event of Force Majeure upto its or their performance of the Contract and to fulfill its or their obligation under the Contract but without prejudice to either party's right to terminate the Contract.

No delay or nonperformance by either party to this Contract caused by the occurrence of any event of Force Majeure shall

- Constitute a default or breach of the contract.

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- Give rise to any claim for damages or additional cost or expense occurred by the delay or nonperformance. If, and to the extent, that such delay or nonperformance is caused by the occurrence of an event of Force Majeure.

32. INSURANCE COVERAGE

Appropriate insurance to cover all solution components for the transit period and until the time of its acceptance at the respective site is to be taken by the contractor. As the contractor will carry the risk for the material in his books during transit, the contractor should arrange insurance for the total system as period from the dispatch till Acceptance Test is successfully achieved. Further the contractor is to take all required insurance coverage in respect of all its personnel who shall be working on this engagement.

33. CAMC SUPPORT

Refer Section – A (Scope of Work & Responsibility)

34. SLA AGREEMENT

As per Section – Q

35. PERFORMANCE BANK GUARANTEE (PBG)

As a guarantee for timely delivery, installation and commissioning of equipment as well as performance of on-site warranty support, as mentioned in Bill of Material, from the date of final acceptance of systems and pertaining to proper running of the systems, the bidder will have to submit 3% of the contract value as security in the form of Performance Bank Guarantee from any nationalized bank as per format enclosed (Section – Q).

36. SI/BIDDER/CONTRACTOR'S RESPONSIBILITIES

Refer Section – A (Scope of Work & Responsibility)

37. NO WAIVER OF RIGHTS

Neither the inspection by WTL or any of their agents nor any order by WTL for payment of money or any payment for or acceptance of the whole or any part of the works by WTL, nor any extension of time, nor any possession taken by WTL shall operate as a waiver of any provision of the contract or of any power reserved to WTL, or any right to damages here in provided, nor shall any waiver of any breach in the contract be held to be a waiver of any other subsequent breach.

38. GRAFTS, COMMISSIONS, GIFTS, ETC.

It is the Purchaser's policy to require that bidders, suppliers, contractors and consultants under contracts, observe the highest standard of ethics during the procurement and execution of such contracts. Any graft, commission, gift or advantage given, promised or offered by or on behalf of the contractor or his partner, agent, officers, director, employee or servant or any one on his or their behalf in relation to the obtaining or to the execution of this or any other contract with WTL shall in addition to any criminal liability which it may incur, subject the contractor to the cancellation of this and all other contracts and also to payment of any loss or damage to WTL resulting from any cancellation. WTL shall then be entitled to deduct the amount so payable from any monies otherwise due to the contractor under contract.

39. ENFORCEMENT OF TERMS

The failure of either party to enforce at any time any of the provision of this contract or any rights in respect thereto or to exercise any option here in provided shall in no way be construed to be a waiver to such provisions, rights or options or in any way to affect the validity of the contract. The exercise by either party of any of its rights herein shall not preclude or prejudice either party from exercising the same or any other right it may have hereunder.

40. PERIOD OF VALIDITY OF OFFER

For the purpose of placing the order, the proposals shall remain valid till 180 days. During the period of validity of proposals, the rates quoted shall not change. In exceptional circumstances, WTL may ask for extension of the period of validity and such a request shall be binding on Bidders. WTL's request and the response to such a request by various Bidders shall be in writing. A Bidder agreeing to such an extension will not be permitted to increase its rates.

41. TAXES & DUTIES

- The prices shall be inclusive of all taxes & levies including GST and other statutory duties as applicable. Rate of taxes should be indicated separately in the Price Bid.
- Contract Price specified in Price Bid should be based on the taxes & duties and charges prevailing at the date one day prior to the last date of Bid submission.
- Statutory deduction, wherever applicable, shall be made from invoice as per government rules. Necessary certificate will be issued for such deductions.
- Bidder submitting a bid shall produce valid statutory documents / certificates with respect to GST, Income Tax, ROC, Prof. Tax, Trade License, etc. All such documents / certificates shall remain valid on the last date of tender submission.
- In case of inter-state transaction, WTL will provide "Waybill". However, statutory charges, if any will be borne by the bidder.
- GST component of the invoice of the bidder may be kept on hold in case there is any mismatch / irregularity in GST return filing on the part of the bidder.

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42. DISCREPANCIES IN BID

- Discrepancy between description in words and figures, the rate which corresponds to the words quoted by the bidder shall be taken as correct.
- Discrepancy in the amount quoted by the bidder due to calculation mistake of the unit rate then the unit rate shall be regarded as firm.
- Discrepancy in totaling or carry forward in the amount quoted by the bidder shall be corrected.

43. BID DUE DATE

The online tender has to be submitted not later than the due date and time specified in the Important Dates Sheet. WTL may at its discretion on giving reasonable notice by fax, or any other written communication to all prospective bidders who have been issued the bid documents, extend the bid due date, in which case all rights and obligations of the WTL and the bidders, previously subject to the bid due date, shall thereafter be subject to the new bid due date as extended.

44. LATE BID

Any proposal received by WTL after the deadline for submission of proposals may not be accepted.

45. OPENING OF BID BY WTL

Bids shall be opened and downloaded electronically through operation of the process in the e-Tender portal in presence of Tender Committee. Bidders interested to remain present during electronic bid opening may attend the bid opening session at WTL premises at scheduled date & time.

46. CONTACTING WTL

Bidder shall not approach WTL officers beyond office hours and/or outside WTL office premises from the time of the Bid opening to the time of finalization of successful bidder. Any effort by bidder to influence WTL office in the decision on Bid evaluation, Bid comparison or finalization may result in rejection of the Bidder's offer. If the bidder wishes to bring additional information to the notice of WTL, it should be in writing following the procedure mentioned hereinabove.

47. WTL'S RIGHT TO REJECT ANY OR ALL BIDS

WTL reserves the right to reject any bid and to annul the bidding process and reject all bids at any time prior to award of Contract, without thereby incurring any liability to the affected bidder(s) or any obligation to inform the affected bidder(s) of the grounds for such decision.

48. BID CURRENCIES

Prices shall be quoted in Indian Rupees, inclusive of all prevailing GST, levies, duties, cess etc.

49. PRICE

- Price should be quoted in the Price Bid format only. No deviation in any form in the Price Bid sheet is acceptable.
- Price quoted should be firm, inclusive of packing, forwarding, insurance and freight charges.
- Percentage/specified amount of taxes & duties should be clearly mentioned otherwise WTL reserves the right to reject such vague offer.
- Price to be quoted inclusive of supply, installation & commissioning charges.

50. CANVASSING

Canvassing or support in any form for the acceptance of any tender is strictly prohibited. Any bidder doing so will render him liable to penalties, which may include removal of this name from the register of approved Contractors.

51. NON-TRANSFERABILITY OF TENDER

This tender document is not transferable.

FORMATS AND SIGNING OF BID

The original and all copies of the proposals shall be neatly typed and shall be signed by an authorized signatory(ies) on behalf of the Bidder. The authorization shall be provided by written Power of Attorney accompanying the proposal. All pages of the proposal, except for un-amended printed literature, shall be initialed by the person or persons signing the proposal. The proposal shall contain no interlineations, erase or overwriting. In order to correct errors made by the Bidder, all corrections shall be done & initialed with date by the authorized signatory after striking out the original words/figures completely.

52. WITHDRAWAL OF BID

Bid cannot be withdrawn during the interval between their submission and expiry of Bid's validity period. Fresh Bid may be called from eligible bidders for any additional item(s) of work not mentioned herein, if so required.

53. INTERPRETATION OF DOCUMENTS

If any bidder should find discrepancies or omission in the specifications or other tender documents, or if he should be in doubt as to the true meaning of any part thereof, he shall make a written request to the tender inviting authority for correction/clarification or interpretation or can put in a separate sheet along with his technical bid document.

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54. SPLITTING OF THE CONTRACT AND CURTAILMENT OF WORK

WTL reserve the right to split up and distribute the work among the successful bidders and to curtail any item of work in the schedule partly or fully.

55. PREPARATION OF TENDER

Tender shall be submitted in accordance with the following instructions:

- a) Tenders shall be submitted in the prescribed forms. Digital signatures shall be used. Where there is conflict between the words and the figures, the words shall govern.
- b) All notations must be in ink or type written. No erasing or overwriting will be permitted. Mistakes may be crossed out and corrections typed or written with ink adjacent thereto and must be initialed in ink by the person or persons signing the tender.
- c) Tenders shall not contain any recapitulation of the work to be done. Alternative proposals will not be considered unless called for. No written, oral, telegraphic or telephonic proposals for modifications will be acceptable.
- d) Tenders shall be uploaded as notified on or before the date and time set for the opening of tenders in the Notice Inviting Tenders.
- e) Tenders subject to any conditions or stipulations imposed by the bidder are liable to be rejected.
- f) Each and every page of the tender document must be signed with company seal by the bidder.
- g) Any bidder may withdraw his tender by written request at any time prior to the scheduled closing time for receipt of tenders and not thereafter.

56. PRE-DISPATCH INSTRUCTION

All materials / equipments supplied against the order shall be subjected to Inspection, check and /or test by the authorized representative from WTL.

57. FINAL INSPECTION

Final inspection will be carried by the authorized representative from WTL.

58. SITE INSPECTION

Bidder can inspect (at their own cost) the sites if required, for which they have to take necessary permission from WTL in writing. WTL will take at least four days to organize such permission.

59. ERASURES OR ALTERNATIONS

The offers with overwriting and erasures may make the tender liable for rejection if each of such overwriting/erasures/manuscript ions is not only signed by the authorized signatory of the bidder. There should be no hand-written material, corrections or alterations in the offer. Technical details must be completely filled up. Correct technical information of the product being offered must be filled in. Filling up of the information using terms such as "OK", "accepted", "noted", "as given in brochure/manual" is not acceptable. The Customer may treat offers not adhering to these guidelines as unacceptable. The Customer may, at its discretion, waive any minor non-conformity or any minor irregularity in the offer. This shall be binding on all bidders and the Tender Committee reserves the right for such waivers.

COMPLIANCE WITH LAW

The contractor hereto agrees that it shall comply with all applicable union, state and local laws, ordinances, regulations and codes in performing its obligations hereunder, including the procurement of licenses, permits certificates and payment of taxes where required. The contractor shall establish and maintain all proper records (particularly, but without limitation, accounting records) required by any law, code/practice of corporate policy applicable to it from time to time including records and returns as applicable under labor legislation.

CLARIFICATION OF BIDS

During evaluation of the bids, the Customer/Tender Committee, at its discretion may ask the bidder for clarification of its bid. The request for the clarification and the response shall be in writing (fax/email) and no change in the substance of the bid shall seek offered or permitted.

QUALITY CONTROL

The contractor is obliged to work closely with WTL and/or Concerned Official, act within its authority and abide by directive issued by them on implementation activities.

The contractor will abide by the safety measures and free WTL and Concerned Official from all demands or responsibilities arising from accident/loss of life, the cause of which is due to their negligence. The bidder will pay all indemnities arising from such incidents and will not hold WTL and competent authority responsible.

The contractor will treat as confidential all data and information about the system, obtained in the execution of its responsibilities in strict confidence and will not reveal such information to any party without the prior written approval of WTL/ Concerned Official.

WTL reserves the right to inspect all phases of contractor's operation to ensure conformity to the specifications. WTL shall have engineers, inspectors or other duly authorized representatives made known to the contractor, present during the progress of the work and such representatives shall have free access to the work at all times. The presence or absence of representatives of WTL does not relieve the contractor of the responsibility for quality control in all phases.

SITE NOT READY

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The bidder shall not be in any manner liable for any delay arising out of respective location inability to make the site ready within the stipulated period.

GENERAL TERMS

1. All the pages of the bid document including documents submitted therein must be duly signed and stamped failing which the offer shall be liable to be rejected.
2. All the documents to be submitted by the bidder along with their offer should be duly authenticated by the person signing the offer and if at any point of time during procurement process or subsequently it is detected that documents submitted are forged/tampered/manipulated in any way, the total responsibility lies with the bidder and WTL reserves the full right to take action as may be deemed fit including rejection of the offer and such case is to be kept recorded for any future dealing with them.
3. No Technical/Commercial clarification will be entertained after opening of the tender.
4. Overwriting and erasures may make the tender liable for rejection if each of such overwriting/erasures/manuscription is not only signed by the authorized signatory of the bidder. All overwriting should be separately written and signed by the authorized signatory of the bidder.
5. Quantity mentioned in the tender document is indicative only and orders shall be placed subject to actual requirement. WTL reserve the right to increase or decrease the quantity specified in the tender.
6. WTL reserve the right to reject or accept or withdraw the tender in full or part as the case may be without assigning the reasons thereof. No dispute of any kind can be raised the right of buyer in any court of law or elsewhere.
7. WTL reserve the right to ask for clarification in the bid documents submitted by the bidder. Documents may be taken if decided by the committee.
8. Supporting technical brochures / catalogues indicating each feature in respect of offered model and make must be submitted along with the offer, in absence of which the offer is liable to be ignored.
9. No dispute by the bidders in regard to Technical/Commercial points will be entertained by WTL and decision taken by the Tender Committee will be final.
10. Discrepancy in the amount quoted by the bidder due to calculation mistake, the unit rate shall be regarded as firm and the totaling or carry in the amount quoted by the bidder shall be corrected accordingly.
11. The price offers shall remain firm within the currency of contract and no escalation of price will be allowed.
12. The acceptance of the tender will rest with the accepting authority who is not bound to accept the lowest or any tender and reserves the right to reject in part or in full any or all tender(s) received and to split up the work among participants without assigning any reason thereof.
13. The customer/WTL at its discretion may extend the deadline for the submission of Bids.
14. The Court of Kolkata only will have the jurisdiction to deal with and decide any legal matters or dispute whatsoever arising out of the contract.

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SECTION – E

BID FORM

(Bidders are requested to furnish the Bid Form in the Format given in this section, filling the entire Blank and to be submitted on Letter Head in original)

To

Webel Technology Limited
Plot – 5, Block – BP, Sector – V,
Salt Lake City,
Kolkata – 700091.

Sub : Supply, Installation and Commissioning of 8(eight) number Continuous Ambient Air Quality Monitoring Station (CAAQMS) at Various locations across West Bengal and Comprehensive Maintenance & Operation Contract (CMOC) of These CAAQMS installation for the period of 5 years.

Dear Sir,

1. We the undersigned bidder/(s), having read and examined in details the specifications and other documents of the subject tender no. WTL/PCB/CAAQMS/22-23/019 dated 15.09.2022, do hereby propose to execute the job as per specification as set forth in your Bid documents.
2. The prices of all items stated in the bid are firm during the entire period of job irrespective of date of completion and not subject to any price adjusted as per in line with the bidding documents. All prices and other terms & conditions of this proposal are valid for a period of 180 (one hundred eighty) days from the date of opening of bid. We further declare that prices stated in our proposal are in accordance with your bidding.
3. We confirm that our bid prices include all other taxes and duties and levies applicable on bought out components, materials, equipments and other items and confirm that any such taxes, duties and levies additionally payable shall be to our account.
4. Earnest Money Deposit: We have transferred the Tender Fee & EMD amount online through e-Tender portal.
5. We declare that items shall be executed strictly in accordance with the specifications and documents irrespective of whatever has been stated to the contrary anywhere else in our proposal. Further, we agree that additional conditions, deviations, if any, found in the proposal documents other than those stated in our deviation schedule, save that pertaining to any rebates offered shall not be given effect to.
6. If this proposal is accepted by you, we agree to provide services and complete the entire work, in accordance with schedule indicated in the proposal. We fully understand that the work completion schedule stipulated in the proposal is the essence of the job, if awarded.
7. We further agree that if our proposal is accepted, we shall provide a Performance Bank Guarantee of the value equivalent to three percent (3%) of the Order value as stipulated in Financial Bid (BOQ).
8. We agree that WTL reserves the right to accept in full/part or reject any or all the bids received or split order within successful bidders without any explanation to bidders and his decision on the subject will be final and binding on Bidder.

Dated, thisday of2022

WEBEL TECHNOLOGY LIMITED

Thanking you, we remain,

Yours faithfully

.....
Signature

.....
Name in full

.....
Designation

Signature & Authorized Verified by

.....
Signature

.....
Name in full

.....
Designation

.....
Company Stamp

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SECTION – F

TECHNO COMMERCIAL EVALUATION & AWARDING OF CONTRACT

1. EVALUATION PROCEDURE

- The Eligibility Criteria (Section - B) will be evaluated by Tender Committee and those qualify will be considered for further evaluation.
- The Tender Committee would evaluate the Techno Commercial Evaluation. In order to facilitate the evaluation, the marking scheme presented is an indication of the relative importance of the evaluation. Bidders securing a minimum of 70% marks in the Techno Commercial Evaluation for qualifying technical evaluation.
- Bidders after qualifying in Techno Commercial Evaluation will only be considers for Financial Bid Evaluation.

2. Technical Evaluation:

The minimum qualification criteria for technical evaluation and progression to commercial evaluation stage shall be minimum 70% (70 marks) of the overall (total) Technical Score. The evaluation shall be carried out based on the following criteria:

Sl. No.	Technical Evaluation Criteria	Points
1	Company's Financial Profile	25
1.1	The Bidder should have average turnover of minimum Rs. 4 Crore for the last 3 financial years (2018-19, 2019-20 & 2021-22) from the business area of IT/IOT/AIR QUALITY Monitoring. Above Rs 15.0 Cr (Marks -25) ≥ Rs 7 Cr and < Rs 15 Cr (Marks -20) ≥ Rs 4 Cr and < Rs 7 Cr (Marks- 15)	25
2	Relevant Experience	45
2.1	The Bidder should have - 1. Has completed at least 3 or more similar projects in the last 5 Years AND 1. Completed/Ongoing minimum 2 Similar projects, project cost of each project should not be less than Rs. 5 Cr. in last five year prior to bid due date OR 2. Completed/Ongoing minimum 1 Similar project, project cost of each project should not be less than Rs. 10 Cr. in last five year prior to bid due date Similar Project: Supply or Design, Implementation, Testing, and commissioning project of the IoT/ Sensor / Analyzer based/AIR QUALITY/ Environmental Monitoring system along with various analysing equipment's and setting up of online centralized information management system related projects for Central Government / State Government / Urban Local Bodies/ PSU in India/. For project mentioned in point (1 & 2)- 40 Marks,	40
2.2	The Bidder should have any IoT/Sensor intervention related project in water Supply system or Environmental Monitoring System for Central Government / State Government / Urban Local Bodies/ PSU in India/. Also, should have an IoT platform which has been deployed at any Central Government / State Government / Urban Local Bodies/ PSU in India in the last 5 years with capacity to handle at least 50K IIoT End points.	5

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	One Project – 2.5 Marks for each project (Maximum 5 Marks) Note: - project should be mutually exclusive	
3	Technical Presentation: Proposed Solutions/Resources, Approach and Methodology (Depending on the quality and comprehensiveness of the required sub – items mentioned below, the committee shall award marks)	20
4	Certificate of Experience of Usage of the Proposed Equipment in India or Globally. > 3 Years = 5 marks > 5 Years = 10 marks	10
	TOTAL	100

Bidder who meets the minimum pre-qualification criteria and minimum qualifying marks as specified shall be called for technical presentation online or offline (maximum duration of 30 minutes) with respect to above technical evaluation criteria during Technical Bid Evaluation. Date, Time and Venue for the Technical Presentation will be informed later to qualified bidders. The proposed Solution and Approach methodology submitted in the BID should be in sync or more with the Presentation, otherwise the Bidder is liable to lose marks in the Technical evaluation phase. Authority reserves right to enquire bidder’s customer where such a similar project execution has taken place.

3.FINAL EVALUATION

Financial bid of the qualified bidders shall be downloaded on the scheduled date & time in the presence of the Tender Committee. Final evaluation will be done among the short listed bidders (As per Section-F, Sl. no. 2) in accordance with the lowest price achieved.

4.AWARDING OF CONTRACT

An affirmative Post Qualification determination will be prerequisite for award of the contract to the lowest quoted bidder. A negative determination will result in rejection of bidder’s bid, in which event the WTL will proceed to the next lowest evaluated bidder to make a similar determination of that bidder’s capability to perform satisfactorily. The successful bidder (s) will have to give security deposit in the form of Performance Bank Guarantee.

5.POST QUALIFICATION

The determination will evaluate the Bidder’s financial, technical, design, integration, customization, production, management and support capabilities and will be based on an examination of the documentary evidence of the Bidder’s qualification, as well as other information WTL deems necessary and appropriate. This determination may include visits or interviews with the Bidder’s client’s reference in its bid, site inspection, and any other measures. At the time of post-qualification, Directorate of es may also carry out tests to determine that the performance or functionality of the Information System offered meets those stated in the detailed Technical Specification.

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SECTION – G

GUIDANCE FOR E-TENDERING

Instructions / Guidelines for electronic submission of the tenders have been annexed for assisting the Bidders to participate in e-Tendering.

Registration of Bidder:

Any Bidder willing to take part in the process of e-Tendering will have to be enrolled & registered with the Government e-Procurement System through logging on to <https://wbtenders.gov.in>. The Bidder is to click on the link for e-Tendering site as given on the web portal.

Digital Signature Certificate (DSC):

Each Bidder is required to obtain a Class-II or Class-III Digital Signature Certificate (DSC) for submission of tenders from the approved service provider of the National Informatics Centre (NIC) on payment of requisite amount. Details are available at the Web Site stated above. DSC is given as a USB e-Token.

The Bidder can search & download N.I.T. & BOQ electronically from computer once he logs on to the website mentioned above using the Digital Signature Certificate. This is the only mode of collection of Tender Documents.

Participation in more than one work:

A prospective bidder shall be allowed to participate in the job either in the capacity of individual or as a partner of a firm. If, found to be applied severally in a single job all the applications will be rejected.

Submission of Tenders:

Tenders are to be submitted through online to the website stated above in two folders at a time, one in Techno Commercial Proposal & the other is Financial Proposal before the prescribed date & time using the Digital Signature Certificate (DSC). The documents are to be uploaded virus scanned copy duly Digitally Signed. The documents will get encrypted (transformed into non readable formats)

The proposal should contain scanned copies of the following in two covers (folders).

Techno Commercial Cover:

Technical Document 1 (scanned & join in pdf format then upload)

1. Bid Form as per format (Section – E)
2. Undertaking Letter of Bidder (Section – S)
3. Undertaking Letter of OEM (Section – T)

Technical Document 2 (scanned & join in pdf format then upload)

1. NIT Declaration duly stamped & signed in letter head of bidder (Section – R)

Technical Compliance (scanned & joins in pdf format then upload)

1. Manufacturer Authorization Form (Section – M)

Financial Cover:

BOQ will be downloaded and same will be uploaded with quoted rates. While uploading BOQ file name shall remain unchanged. Absence of this document shall lead to summary rejection of the bid.

NON-STATUTORY COVER (MY SPACE) CONTAIN FOLLOWING DOCUMENT:

(In each folder, scanned coy will be uploaded with single file having multiple pages)

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Sl. No.	Category Name	Sub Category Name	Sub Category Description
A	CERTIFICATES	A1. CERTIFICATES	GST Registration Certificate PAN As required
B	COMPANY DETAILS	B1. COMPANY DETAILS 1	As required/Other documents
		B2. COMPANY DETAILS 2	Company Profile (Not more than 3 pages) As required/Other documents
C	CREDENTIAL	CREDENTIAL 1	Order copies as per Clause no. 4 of Section – B
		CREDENTIAL 2	Product brochure Other documents, if any
D	DECLARATION	DECLARATION 1	List of Clients as per format (Section – P) As required
		DECLARATION 2	Financial Capability of Bidder as per format (Section – K)
		DECLARATION 3	Bidder's Details as per format (Section – L)
		DECLARATION 4	Details of Order Execution as per format (Section – J)
		DECLARATION 5	As required/Other documents
F	FINANCIAL INFO	P/L & BALANCE SHEET 2019-2020	P/L & BALANCE SHEET 2019-2020
		P/L & BALANCE SHEET 2020-2021	P/L & BALANCE SHEET 2020-2021
		P/L & BALANCE SHEET 2021-2022	P/L & BALANCE SHEET 2021-2022

Submission of Hard copy of Technical Bid

- a) Each copy of the tender should be a complete document and should be bound as a volume. The bid document should be properly page numbered and appropriately flagged/tagged; and must contain the list of contents with page numbers.
- b) All outstation bids should be sent through registered post/speed post/ courier/ in person.
- c) Hard copy of Price Bid should be submitted.

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SECTION – H

BILL OF MATERIAL

The equipment are intended for Continuous Ambient Air Quality Monitoring Station (CAAQMS) with analyzers

Sl.	Item	Quantity
1.	CAAQM Station each consisting of the following components/items/services including (Table Sl. No. 1a.to 1w.) along with 0 -12 months CMOC from the date of go-live	8 nos.
a.	Monitoring Station (Container based) for housing the CAAQM set up	
b.	Air Conditioner	
c.	On line UPS (1X15 KVA, 1 hr. back up)	
d.	Sampling System having 10 port manifold	
e.	19" Rack cabinet or equivalent to accommodate all analyzers	
f.	Ambient Oxides of Nitrogen (NO/NO2/NOx/ NH3) Analyzer	
g.	Ambient Sulphur Dioxide (SO2) Analyzer	
h.	Ambient Ozone (O3) Analyzer	
i.	Ambient Carbon Monoxide (CO) Analyzer	
j.	Benzene Monitor / Analyzer	
k.	Multi calibration System for Gas calibration	
l.	Automatic PM2.5 Particulate Matter Monitor	
m.	Automatic PM10 Particulate Matter Monitor	
n.	Meteorological Sensors for Wind Direction, Wind Speed, Vertical Wind Speed, Ambient Temperature, Relative Humidity, Solar Radiation & Barometric Pressure, Rainfall and Telescoping Crank – up Meteorological Tower	
o.	Computer System consisting of one PC along with Laser Printer and DAS at each monitoring station with peripherals and software for data acquisition / display / transfer and systems integration.	
p.	Installations for Continuous Ambient Air Quality Monitoring Stations with Sampling line, Internal fitting, Instruments racks, Electrical connection from supply within 5 meter of the station and Gas line fittings, Tools (electrical and mechanical)	
q.	Central server system with required UPS	
r.	Day light & Night visible data display (Display Board) system. All works, civil, mechanical, electrical and data connectivity (wired or remote) to be done	
s.	Modem/Data Card/Communication system to be established between the station, WBPCB head quarter and the CPCB AQI portal.	
t.	RCC foundation, pillars, platform and misc. works - civil works only (In case the platform is at 1 meter height from ground)	
u.	RCC foundation, pillars, platform and misc. works - civil works only (In case the platform is at 4 meter height from ground)	
v.	RCC foundation, pillars, platform and misc. works - civil works only (In case the container is to be mounted on a roof top at a height between 3 to 10 meter)	
w.	Cost of FAT (Factory Acceptance Test) for a considered 5 days per OEM location (in case of more than 1 OEM) period for 4 officials at the OEM manufacturing location	
<p>“RCC foundation, pillars, platform and misc. works - civil works only (In case the container is to be mounted on a roof top at a height between 3 to 10 meter)” means the bidder may be required to construct a room of same dimension of the container on the roof top at such height and all works in relation to such construction is to be assessed in this item.</p> <p>Note: The quantity mentioned can be increased or decreased based upon the final requirement of the end customer</p>		

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shall be provided along with the lightning arrestor for the container. 2 numbers Emergency cut off switch & Thermostat switch (350C) for power disconnection, 6 free sockets and 3 fluorescent lamps for lighting will be provided. The station shall be properly grounded with chemical earthing or as per BIS Standards with proper plate and only copper strip at-least on 2 corners (diametrically opposite). One three phase energy meter (Digital Type) shall be installed. Weatherproof cubicles / enclosure for housing of MCB / TP & N Switch of main power termination (outside shelter) and weatherproof telephone junction box for terminations of telephone line are to be provided. Proper earthing for telescopic mast of meteorological system shall be provided. There should be conduction between the telescopic mast of the meteorological system and the station. The guy ropes or wires shall be provided for supporting the mast.

The housing will be partitioned as per drawing to create space for storing of gas cylinders, Meteorological mast & UPS. The size will be 2000 x 1400 x 2300 mm. A lockable door of size 900 x 2000 mm along-with 3 – Point locking system shall be provided on the outer wall of the housing. A 300 mm, single-phase (230 volts □ 10 volts AC and 50 Hz □ 3%) exhaust fan with safety grills will be provided. Mounting brackets in 2 levels for fixing of at-least 06 (six) gas bottles should be provided. Arrangements are to be made for auto switch off of the internal lights in case the station is left with the internal lights switched on.

Air conditioners shall be mounted on proper rust proof supporting structures with rubber blocks to avoid vibration of structures. Proper caging / grill should also be provided for the safety of ACs. Sun shades for external AC units shall be provided with fabricated pre-coated MS sheet (same as monitoring station) with supporting arrangements. AC unit's external piping shall be placed in GI trays. Cable trays fixed on exterior wall shall be covered with pre-coated MS sheet, of same colour shade of monitoring station. Roof top sheet to be levelled and sloped properly. Rain water spout shall be fixed at top with rain water down pipe at two corners. The external lights of the station should be Solar operated.

This paragraph is regarding the design of the container, and is only a sketchy one. The dimensions provided (including the drawings) are minimal ones. Individual bidders are to propose details on these items.

Station Furnishing:

19" racks – 3 Nos.

Fire extinguishers – 2 Nos.

Furniture:

Material - Furniture made of water resistant laminated board

Cupboard – As per drawing

Working table – Powdered coated MS frame size 1400 x 900 x 750 mm (w x d x h) and top 19 mm thickness Board

Revolving tilting chair – 2 Nos.

Miscellaneous

The exhaust gases from the analyzer should be collected and discharged by a common exhaust pipe and vented.

Folding aluminum ladder for roof access

Thermometer for measuring the temperature of the station

Hygro Meter for measurement of Humidity inside the station

Mounting bracket for the ladder

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No smoking stickers

Vacuum cleaner of reputed make with minimum 100 watt power

Tool Kit having following tools:

One screw driver set

One multi-meter

One box spanner set

One D spanner set

One watch maker set

One Hammer set

One precision screw driver set

One pliers set

One Tong tester

One Emergency LED Cluster light

Sign boards along-with logo of Government of West Bengal and West Bengal Pollution Control Board, to be embedded with size 1500 x 900 mm on the front of the container and on the two side of the container, The name of the Station i.e. Continuous Ambient Air Quality Monitoring Station, (Location) both in English and Bengali to be inscribed. The Sign Boards to be mounted on the station with proper spacers.

Container Foundation (RCC, at 1000 mm from ground) L X W: 6000 x 6000 mm

Height: 1000 mm from ground

Pillars: Nine concrete pillars of 1000 mm above the ground level and below the ground level with 200 x 200 mm beam and between pillar bricks to be used for filling the space. Outer wall of the foundation to be plastered with 1:4, Cement: Sand ratio and same has to be painted with weather proof coat.

Top of the platform: RCC 150 mm with concrete ratio of 1:1:2 and to plastered and covered with floor tiles.

Staircase: Staircase to approach the main door of the container and the UPS / Gas room door in the side to be provided and each step should not be more than 150 mm.

Container Foundation (RCC, at a height of 4000 mm from ground) L X W: 7400 x 6900 mm

Height: 4000 mm from ground

Pillars: Nine concrete pillars of 4000 mm above the ground level and below the ground level with 200 x 200 mm beam and between pillar bricks to be used for filling the space. Outer wall of the foundation to be plastered with 1:4, Cement: Sand ratio and same has to be painted with weather proof coat.

Top of the platform: RCC 150 mm with concrete ratio of 1:1:2 and to plastered and covered with floor tiles.

Staircase: Staircase to approach the main door of the container and the UPS / Gas room door in the side to be provided and each step should not be more than 150 mm.

Container Foundation (RCC, at roof top) L X W: 6000 x 6000 mm

Height: On roof top, not more than 7000 mm high.

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Pillars: Nine concrete pillars of 300 mm above the roof top with 200 x 200 mm beam and between pillar bricks to be used for filling the space. Outer wall of the foundation to be plastered with 1:4, Cement : Sand ratio and same has to be painted with weather proof coat.

Top of the platform: RCC 150 mm with concrete ratio of 1:1:2 and to be plastered and covered with floor tiles.

Staircase: Staircase to approach the main door of the container and the UPS / Gas room door in the side to be provided and each step should not be more than 150 mm.

The bidder may be required to construct a room of same dimension of the container on the roof top at such height and all works in relation to such construction is to be assessed in this item.

AIR CONDITIONER

Type: 3 Nos

- 24 X 7 operation
- G4 filtration
- RS485 communication
- Green Refrigerant
- EC Fan
- Metallic body
- 430 C ambient ready condenser
- >90% SHR
- Load sharing
- Free cooling
- Auto restart
- Control - Microprocessors based with corded remote
- Communications - RS485 based modbus
- Net sensible capacity - kW - 4.22
- SHR: >0.9 >0.9
- Airflow: CMH 1100
- Unit Power Supply: 230 V, 1phase, 50 Hz
- Condenser type: Air cooled

ON LINE UNINTERRUPTED POWER SUPPLY (UPS)

Capacity	Adequate capacity to cover all above IT Components at respective location
Output Wave Form	Pure Sine wave
Input Power Factor at Full Load	>0.90
Input	Three Phase 3 Wire for over 15 KVA
Input Voltage Range	305-475VAC at Full Load
Input Frequency	50Hz +/- 3 Hz
Output Voltage	400V AC, Three Phase for over 15 KVA UPS
Output Frequency	50Hz +/- 0.5% (Free running); +/- 3% (Sync. Mode)
Inverter efficiency	>90%
Over All AC-AC Efficiency	>85%
UPS shutdown	UPS should shutdown with an alarm and indication on following conditions 1)Output over voltage 2)Output under voltage 3)Battery low 4)Inverter overload 5)Over temperature 6)Output short
Battery Backup	180 minutes in Full Load in Each UPS
Battery	VRLA (Valve Regulated Lead Acid) SMF (Sealed

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	Maintenance Free) Battery
Sizing	2X20KVA (1+1) Parallel redundant UPS
Indicators &	Indicators for AC Mains, Load on Battery, Fault, Load Level, Battery Low Warning, Inverter On, UPS on Bypass, Overload, etc.
Metering	Metering for Input Voltage, Output Voltage and frequency, battery voltage, output current etc.
Audio Alarm	Battery low, Mains Failure, Over temperature, Inverter overload, Fault etc.
Cabinet	Rack / Tower type
Operating Temp	0 to 50 degrees centigrade
Management	SNMP Support through TCP/IP

AIR QUALITY ANALYSIS SYSTEM

(CO, SO₂, NO_x, NH₃, BENZENE, PM₁₀, PM_{2.5} and O₃ Analysers, if not specifically mentioned) (General Specifications

for all Analysers)

The analysers should be 19" rack mounting model with facilities for fixing the analysers from front side.

The ON / OFF switch and display of the entire important status signal viz. Sample flow, temperature, concentration, range switch, manual / auto mode, zero / span mode should be on front panel.

The analysers should operate at operating voltage 230 volts \pm 10 volts AC and 50 Hz \pm 3%. The power supply input to be protected against spikes from and to the analyser by an LC filter. The power connection cable should be CEE type complete with 15 Amperes plug adaptable to Indian mains socket.

The analysers must function properly in Indian conditions without any defect between 0 – 50o C ambient temperature, 10 – 95% relative humidity and in high ambient dust levels. The data capture rate should not be less than 90%.

The Manufacturer shall provide minimum of 2 weeks of operational & preventive maintenance hands-on training

The analysers should be complete with calibration system. The calibration system should be delivered along-with respective span gas cylinders. The span gas concentration should be within 60 – 90% of first measuring range. The analyser must have zero point internal calibration system and in agreement with minimum detection limit of each analyser. The calibration procedures are to be integrated into the software system for automatic calibration.

4.6.1 The calibration gases provided with the system shall have Traceability to NIST.

shall be supplied with all ancillaries necessary for operation including external pump (if any) and any other items such as charcoal scrubber, Teflon air sample intake filter, drier, Teflon tubing suitable for connection to air sampling manifold. All such items are to be itemized. Dust filter in all the analysers should be provided before solenoid valve to protect frequent chocking of solenoid valve.

The connector systems for out-going signal for recording and the computer terminal should be on back panel with screw type connecting pins.

All ambient gas analysers shall conform with the USEPA automated reference / TUV / EN or equivalent method designation as required by the specification for individual equipment / parameters. However, certificate of approval from USEPA is required for parameters covered by them. Method of measurement used shall also comply with the stipulation on National Ambient Air Quality Standards (NAAQS) 2009 (Details of Methods of Measurement is available at WBPCB AND CPCB websites). All analysers shall be micro – processor controlled with automatic calibration using an external dilution calibrator and calibration standards. All analysers and sensors should be fully integrated in the rack cabinet, fully calibrated & tested before supply and ready for start – up at the respective sites. Analyzer must exhibit performance equal to or better than values specified in the Calibration & test certificate provided with each analyzer.

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The manufacturer shall specify the cross sensitivity of measurement for all the analyzers.

Each set of analyzers shall be supplied with two copies of elaborate operation manuals comprising details in four parts:

Part (I) should comprise installation, operational and troubleshooting details;

Part (II) should have details about preventive, routine and corrective maintenance;

Part (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; and

Part (IV) Schematic diagram for possible repair & maintenance.

Digital Output:

Multi drop RS 232 port shared between Analyzers, Dust Monitor (PM2.5 & PM10), Meteorological Sensors and computer for data, status and control.

Quality Control and Standard

Data shall be collected and validated according to US EPA standards, using the methodologies included in 40 Code of Federal Regulations of the US. All analyzers shall have current US EPA reference or equivalent method designation and shall be of the latest design.

The supplier shall submit a Standard Operating Procedure for the air quality monitoring stations to the Buyer at the time of bid submission. This Standard Operating Procedure shall be approved by the Buyer prior to award. The Standard Operating Procedure shall contain the following:

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- Data validation procedures
- Quality Assurance procedures
- Sample quality assurance documentation
- Sample Air Quality Report
- Operating procedures for all analyzers and meteorological sensors
- Calibration procedures
- Calibration schedule
- Maintenance procedures
- Maintenance schedule

The calibration procedures for analyzers shall conform to US EPA methodologies and shall include daily calibration checks, biweekly precision checks and linearity checks every six weeks. All analyzers shall undergo full calibration every six weeks. Data obtained from these calibration checks and copies of associated Quality Assurance and calibration documentation, shall be submitted to the Buyer along with the Air Quality Data.

Air Quality Data shall be submitted to the Buyer on a monthly basis in the form of an Air Quality Report. This report shall include tabular and graphic information on gas and dust concentrations as well as meteorological data for each site. The data shall be reported in the form of 15 minute averages and shall also include daily, weekly and monthly averages, minimums, maximums, standard deviations, total data captured and percent data capture. The Air Quality Report shall also include wind roses where wind speed and direction are measured.

Upon 24 hour notice from the Buyer, once per year, the supplier shall agree to submit to an audit of calibrations, conducted, using pre-approved US EPA methodologies, by a third party. The results of these audits shall be made immediately available to both the supplier and Buyer.

SPECIFICATIONS OF SAMPLING SYSTEM

A suitable sampling system as specified by USEPA having 10 ports manifold and fitted with a suction pump to draw ambient air. System duly equipped with moisture removal systems should be provided for sampling of ambient air separately for gaseous and dust measurement.

Gases sampling system:

- Height of the sampling system : Approx. 1.0 meter above the roof
- Roof entry cut out: Stainless Steel
- Conduit : Stainless Steel
- Inner sampling system : Borosilicate glass
- Sampling head : Stainless Steel
- Manifold : 10 port for tubes 6 x 1 mm, self-tightening

6.0 SPECIFICATIONS OF 19" RACK

Suitable 19" Rack cabinet to accommodate all analyzers, calibrators, Zero air generators, data logger etc. The dimension of the rack without doors, with aluminum section and rear of 2 mm steel sheet, one removable roof plate, fitted with 4 filling eyebolts. Four roof fixing screws included in package to replace the lifting eyebolts. One gland plate three part, one pair of 475 mm (19") mounting angles depth adjustable in 25 mm pitch pattern fitted on two fixing angles approximately 150 mm unit from the front standard. To accommodate panel width of 19" size: width = 600 mm Height = 1400 mm and Depth = 800 mm. The 19" racks should be screwed to the floor of the station with anti-vibration pads. All nuts and bolts shall be cadmium coated.

7.0 AMBIENT AIR QUALITY MONITORING ANALYSERS

AMBIENT OXIDES OF NITROGEN (NO-NO₂-NO_x) ANALYSER

Conforming to USEPA Automated Federal Reference Method (FRM) Designation, or any other as mentioned in Clause 11, Section V (GCC), Volume-I of this Bid.

01.	Principle	:	Chemiluminiscence
02.	Measurement	:	NO / NO ₂ / NO _x in Ambient Air
03.	Display	:	Digital

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04.	Ranges	:	Auto ranging 0-2000 PPB
05.	Minimum Detectable Limit	:	1 PPB
06.	Noise Level	:	0.5 PPB
07.	Zero Drift	:	<1 PPB/24 Hrs.
08.	Span Drift	:	<2% in 15 days of full scale
09.	Response Time	:	30 seconds or earlier
10.	Linearity	:	□1% of full scale
11.	Calibration	:	Please see Multi-calibration section (Sl. No. J) and a calibration section in General Specifications (4.6 & 4.7).
12.	Output Signals or Analog Output	:	3 Analog output 0 – 1 V, 0 – 10 V, 0 – 20 mA or 4 – 20 mA
13.	Digital Output	:	Multi drop RS 232 port or Equivalent

AMBIENT AMMONIA ANALYSER (NH₃)

01.	Principle	:	Chemiluminescence NH ₃ conversion to NO by oxidation. NO ₂ also converted to NO. the difference obtained by measuring NO in output of two sample stream as equal to NH ₃
02.	Measurement	:	Ammonia in Ambient Air
03.	Display	:	Digital
04.	Ranges	:	Auto ranging 0-1000 PPB
05.	Minimum Detectable Limit	:	1 PPB
06.	Noise Level	:	0.2% of reading
07.	Zero Drift	:	<5 PPB /24 Hrs.
08.	Span Drift	:	<2% in 15 days of full scale
09.	NH ₃ /NO converter	:	Quartz at approx. 10000 C
10.	Linearity	:	□1% of full scale
11.	Response time	:	180 second
12.	Calibration	:	Please see Multi-calibration section (Sl. No. J) and also calibration section in General Specifications (4.6 & 4.7).
13.	Rise / fall Time 95% of the final value	:	<30 Sec
14.	Digital Output	:	Multi drop RS 232 port or Equivalent
15.	Analog Output	:	0 – 1 V, 0 – 10 V, 0 – 20 mA, 4 – 20 mA

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AMBIENT SULPHUR DIOXIDE (SO₂) ANALYSER

Conforming to USEPA Automated Federal Reference Method (FRM) Designation, or any other as mentioned in Clause 11, Section V (GCC), Volume-I of this Bid.

01.	Principle	: Pulsed UV Fluorescence
02.	Measurement	: Sulphur Dioxide in Ambient Air
03.	Lower Detectable Limit	: 1 PPB
04.	Ranges	: Auto ranging 0 - 500 PPB
05.	Display	: Digital
06.	Noise Level	: 0.50 PPB or 1% of the reading
07.	Zero Drift	: <1 PPB / 24 Hrs. With automatic zero compensation
08.	Span Drift	: <2 PPB full scale in 15 days
09.	Calibration	: Please see Multi-calibration section (Sl. No. J) and also calibration section in General Specifications (4.6 & 4.7).
10.	Precision	: 0.5 ppb or 1% reading whichever is greater
11.	Output Signals or Analog Output	: 3 Analog output 0 – 1 V, 0 – 10 V, 0 – 20 mA or 4 – 20 mA
12.	Digital Output	: Multiple drop RS 232 or Equivalent

AMBIENT OZONE (O₃) ANALYSER

Conforming to USEPA Automated Federal Reference Method (FRM) Designation, or any other as mentioned in Clause 11, Section V (GCC), Volume-I of this Bid.

01.	Principle	: UV Photometric
02.	Measurement	: Ozone in Ambient Air
03.	Display	: Digital
04.	Range	: Auto ranging 0 - 500 PPB
05.	Minimum Detectable Limit	: 2.0 PPB
06.	Noise	: □ 1.0 PPB
07.	Zero Drift	: <½ % per month
08.	Span Drift	: <1% per month
09.	Calibration	: With built in Zero and span generator and also see Multi-calibration section (Sl. No. J)
10.	Linearity	: Continuous + 1%
11.	Output Signals or Analog Output	: 3 Analog output 0 – 1 V, 0 – 10 V, 0 – 20 mA or 4 – 20 mA
12.	Digital Output	: Multiple drop RS 232 or Equivalent

AMBIENT CARBON MONOXIDE (CO) ANALYSER

Conforming to USEPA Automated Federal Reference Method (FRM) Designation, or any other as mentioned in Clause 11, Section V (GCC), Volume-I of this Bid.

01.	Principle	: Non Dispersive Infra-Red (NDIR) with Gas Filter Correlation
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02.	Measurement	: Carbon Monoxide in Ambient Air
03.	Display	: Digital
04.	Ranges	: At least four ranges Auto ranging 0 - 100 PPM.
05.	Minimum Detectable Limit	: 0.1 PPM
06.	Zero Noise	: 0.05 PPM with time constant \square 30 seconds
07.	Zero Drift	: <0.2 PPM/7 days
08.	Span Drift	: <1% full scale in 24 hrs.
09.	Calibration	: Calibration gas (CO) cylinder – 10 liters capacity. A Highly polished aluminum cylinder portable filled with 40 PPM NIST traceable Calibration gas has to be provided along-with the instrument for calibration purpose. It should also have pressure gas valve for Zero and Span gas.
10.	Linearity	: Continuous + 1%
11.	Output Signals or Analog Output	: 3 Analog output 0 – 1 V, 0 – 10 V, 0 – 20 mA or 4 – 20 mA
12.	Digital Output	: Multiple drop RS 232 or Equivalent

PM10 MONITOR

Conforming to USEPA Automated Federal Reference Method (FRM) Designation, or any other as mentioned in Clause 11, Section V (GCC), Volume-I of this Bid.

Based on the principle of \square -ray attenuation by particulate sampled through the instrument and collected on fiberglass filter tape. Before and after sampling \square -ray radiation is measured by scintillation / G.M. counter. An internal microprocessor handles all sequences and automatically calculates the concentration of collected particulate matter.

01.	Principle	: Continuous measurement of PM10 in ambient air
02.	Particle Size Cut Off	: 0 - 10 Microns
03.	Measuring Range	: 0 to 2000 \square g/m ³
04.	Resolution	: 1% of the concentration
05.	Minimum Detectable Limit	: 2 \square g/m ³
06.	Detector	: Plastic Scintillator / GM Counter, Silicon Semiconductor Beta Detector
07.	Air Flow Rate	: At - least 1.5 m ³ / hrs. (Adjustable to 1 m ³ /hr)
08.	Filter Material	: Glass Fiber Filter
09.	Display	: LED / LCD or Equivalent
10.	Sampling Head	: Dynamic heated sampling head for measurement of PM10, with adjustable temperature 20 – 70 \square C
11.	Calibration	: Reference membrane facility should be provided for calibration of analyser.
12.	Compatibility	: Analyser should be compatible with protocols mentioned in DAS section
13.	Roll Length	: Approximately 30 meters
14.	Measurement Result	: 1 hr average or shorter

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PM2.5 MONITOR

Conforming to USEPA Automated Federal Reference Method (FRM) Designation, or any other as mentioned in Clause 11, Section V (GCC), Volume-I of this Bid.

Based on the principle of α -ray attenuation by particulate sampled through the instrument and collected on fiberglass filter tape. Before and after sampling α -ray radiation is measured by scintillation / G.M. counter. An internal microprocessor handles all sequences and automatically calculates the concentration of collected particulate matter.

01.	Principle	:	Continuous measurement of PM2.5 in ambient air
02.	Particle Size Cut Off	:	0 – 2.5 Microns
03.	Measuring Range	:	0 to 1000 $\mu\text{g}/\text{m}^3$
04.	Resolution	:	1% of the concentration
05.	Minimum Detectable Limit	:	2 $\mu\text{g}/\text{m}^3$
06.	Detector	:	Plastic Scintillator / GM Counter, Silicon Semiconductor Beta Detector
07.	Air Flow Rate	:	At - least 1.5 m ³ / hrs. (Adjustable to 1 m ³ /hr)
08.	Filter Material	:	Glass Fiber Filter
09.	Display	:	LED / LCD
10.	Sampling Head	:	Dynamic heated sampling head for measurement of PM2.5 with adjustable temperature 20 – 70 °C
11.	Calibration	:	Reference membrane facility should be provided for calibration of analyser.
12.	Compatibility	:	Analyser should be compatible with protocols mentioned in DAS section
13.	Roll Length	:	Approximately 30 meters
14.	Measurement Result	:	1 hr average or shorter

BENZENE MONITOR / ANALYSER

1.0 GENERAL

A complete monitor / analyzer system including continuous automatic sampling (pump etc.), sampling, analyzer, detector, computer hardware and software for instrument control, data storage, display, acquisition, processing and for selective determination of volatile compounds in ambient air optimized for Benzene, Toluene, Ethyl Benzene and o, m, p -Xylenes. Compatible to power supply (voltage 230 volts \pm 10 volts AC and 50 Hz \pm 3%). Continuous unattended measurement system of individual BTEX should work without cryogenic cooling. System should have protocol compatible to communicate & transfer data to main computer through modem and subsequently to CPCB/SPCB website preferably having features of security, data validation & alarms etc. Raw data storage capacity without erase minimum for three month or more. The system should be delivered with all necessary spares, consumables, tubing etc. for making it functional. In cases of Benzene analyzer, if USEPA approval is not available, TUV or EN approval will do. A separate high purity nitrogen cylinder with double stage regulator is to be supplied with each Benzene analyzer. Cost of this cylinder is to be compounded with that of the Benzene analyzer.

TECHNICAL SPECIFICATIONS

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AUTOMATIC SAMPLING (MONITOR) with Sample volume controlled by thermal mass flow controller (dust protected). Sample flow range may be 20 -100 ml/min or more (adjustable). Sample volume should be between 400 ml – one liter or more of ambient air over a 10-15 min sampling cycle. All sample transfer tubing's should be in stainless steel flow / pressure sensor to be preferred with digital display. Sample volume should be controlled by flow controller (dust protected) with volume measurement saved in memory.

DETECTOR

Photo Ionization Detector (PID) or other equivalent detector as per EPA/EU/TUV approved specs, which do not require hydrogen or other gas to operate it. The system should have auto-clean & auto calibration facilities. PID Lamp eV should be 10.6eV. PID sensitivity sensor should be available to check sensitivity.

MINIMUM SPECIFICATIONS

Lowest detector limit	: 0.1 μ g/m ³ (0.03 ppb) or less for Benzene (There should be no interferences on Methyl-cyclopentane, 2,2,3-trimethylbutane, 2,4-dimethylpentane, Tetrachloromethane, Cyclohexane, 2,3-dimethylpentane, 2- methylhexane, 3 - ethylpentane, Trichloroethylene, n-heptane, isooctane with BENZENE components.)
Temperature Range	: 5 - 35oC or more
Measuring Range	: 1 - 1000 μ g / m ³ or better (0.3 ppb to 270 ppb)
Repeatability	: Retention Time : <0.1% RSD Amount : <1.0% RSD
Typical Cycle Time	: Total Cycle Time should not exceed 15/30 min. approx. i.e. Sample Collection Time - 15 min. approx. Analytical Time – 15 min. approx.

CALIBRATION UNIT WITH SPAN GAS / IN BUILT CALIBRATION WITH /PERMEATION TUBES AND GAS MIXING / DILUTION FACILITY

Bidder is to propose the calibration system of this analyzer in detail. The calibration is to be established and continued with NIST traceable calibration gas for Benzene at appropriate concentration.

MEMORY AND CONTROL FACILITIES

Method auto load and system restart after power failure. Methods storage capacity with timed events programs for control of system parameters in permanent memory.

Diagnostics & Fault status; gas supply (low press). System stability (temperature and sample flow). Detector signal (low) and communication should be in digital form on monitor by LED's & be controlled from computer.

Output signals: Analog 0-1 mV, Serial RS 232 for data intermission and CP-BUS for monitor control from remote. Both digital & analog outputs should be available.

Hardware/Software(s)

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Latest PC with operating system/software. Basic Window based latest software's (English version) consisting instrumental control features as well as data storage, acquisition, processing and handling in desired/customized format including sorting of data (1 / 4 / 8 / 12 / 24 hourly, days wise /date wise reporting as microgram / m3 or ppb (selectable) & averaging, data capture rate s etc.).

Data presentation / graphical & statistical processing & data transfer to Excel including time series, correlation matrix etc. is required.

Communication software with protocol compatible to communicate & transfer data from BENZENE monitor to central computer through modem (preferably including sample chromatogram) and from central computer to WBPCB and CPCB servers and website preferably having features of security, data validation & alarms etc.

System should have remote access to BENZENE monitor.

Resident program as well BENZENE control / monitor user program with monitor startup / off / status, blank / calibration and sample gas measured, fault status, carrier gas if any, and communication errors indications. Updation of response factors automatically after calibration run. Auto tune facility. Raw data storage capacity without erase minimum for three month or more.

MULTICALIBRATION SYSTEM

Calibration system should provide for the calibration of the air quality analysers, data acquisition system, meteorological equipment, and gas calibration system. This calibrator should have two (2) mass flow calibrators. One dedicated zero air generator is to be supplied with each multi point calibrator for each station. The cost of each such item is to be compounded with the calibrator.

Gas Calibration System:

The calibration system for air monitoring equipment (listed above) should incorporate an automatic gas dilution calibrator, calibration gas standards and a high performance zero air generator to calibrate all of the analysers in the system. The calibration cycles should be able to be configured through the Data Acquisition System at any specific time during the day and night. It should be mounted on standard 19" rack.

The dilution calibrator should be able to perform mixing of source gas, from the calibration gas bottles, with zero air generator, in order to generate a wide range of calibration gas concentrations and minimising the number of calibration gas standards required. All the calibration gases provided along-with the system MUST be NIST Traceable (certificate should be provided). It should have facility for Gas Phase titration (GPT), having Ozone generator of 6 PPM / Liters and the converter efficiency should be 100% for conversion of NO₂ concentration to NO.

The system should also include calibration of Ozone analyzer.

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Meteorological, Flow and Electronics Calibration

The supplier should provide calibration devices or calibration check devices for all the meteorological and other electrical equipment mentioned above as per the specifications of the manufacturers.

8.0 METEOROLOGICAL MONITORING SYSTEM

The meteorological instrumentation should be interfaced directly with the Data Acquisition System after passing through a lightning protection isolation box. A crank - up telescopic 10 meters tower should be erected for mounting of meteorological sensors. The relative humidity and solar radiation sensors should be mounted on the tower. All sensors should be NIST (National Institute for Standards and Technology, USA) traceable. The specifications are follows:

Wind Speed

Range (Operation)	: 0 – 60 m/s or better
Sustainability	: Up-to 75 m/sec
Accuracy	: ± 0.5 m/sec or better
Resolution	: 0.1 m/sec
Sensor Type	: Ultrasonic
Threshold	: 0.5 m/sec or less
Response time	: 10 sec or better

Wind Direction

Range	: 0 – 359 degree
Accuracy	: ± 5 degree or better
Resolution	: 1 degree
Sensor type	: Ultrasonic
Threshold	: 0.5 m/sec or less
Response time	: 10 sec or better

Ambient Temperature

Range	: -10 o C to 60 o C
Accuracy	: ± 0.2 o C or better (with radiation shield)
Response	: 10 seconds in still air
Sensor type	: Resistance type
Response time	: 10 sec or better

Relative Humidity

Range	: 0 to 100% RH
Accuracy	: ± 3.0 % or better
Resolution	: 1%
Sensor type	: Capacitive / Solid State
Response Time	: 10 sec or better

Solar Radiation

Range	: 0 to 1500 W/m ² or better
Accuracy	: ± 5.0 % or better

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Resolution : 5W/m²

Rainfall

Range : 0.2 mm to 100 mm /hr
Accuracy : ± 5% or better
Resolution : 0.2 mm
Sensor type : Tipping bucket rain gauge or any other suitable sensor
Response Time : 10 sec or better

Telescopic Crank – Up Meteorological Tower

The wind speed, wind direction, temperature, relative humidity and solar radiation sensors are to be mounted on the Meteorological Tower. The tower is to be a free standing four section telescopic tower provided with a hand crank to raise and lower the instruments mounted on the tower. Specifications are as follows:

Extended Height : 10 meters
Retracted Height : 2 meters
Wind load Limit : 0.7896 sq. m. (8.5 sq. ft) at 50 mph
Number of Sections : 4
Construction material : Galvanized steel or aluminium

Note: Humidity and temperature sensors are to be supplied with weather and thermal radiation shield made of anodized aluminium and sensor should be supplied with all necessary cables, connector and mounting arrangements as required.

SPECIFICATIONS OF DATA LOGGER

Detail specification of the Data Logger is to be provided by the Bidder.

SPECIFICATION OF SOFTWARE FOR CAAQMS.

TABLE OF CONTENT

DATA ACQUISITION SYSTEM IN THE STATION

DATA ACQUISITION SYSTEM IN THE CENTRAL

COMPATIBILITY

SECURITY

OTHER TECHNICAL CONDITIONS

ANNEXURE – I

DETAILS OF DESIRED DATA VALIDATION SYSTEM

LIST OF PROTOCOLS FOR WHICH SOFTWARE SHOULD SUPPORT

CHECKLIST TO COMPARE FIRM'S TECHNICAL CAPABILITY TABLE FOR SPECIFICATION OF SOFTWARE.

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DATA ACQUISITION SYSTEM IN THE STATION

SPECIFICATIONS OF STATION SOFTWARE

The station software captures data from all channels in the system and stores in the Personal Computer. Personal computer is used for calibration and configuration of each channel.

Data Acquisition

Frequency of data acquisition

User selectable 1, 5, 30, 60, 120 second averaging duration online digitally.

Channel size

32 Channels or more supported

Expandable to 64 channels, if required in future

Data input

Either Analog (0-1 volt / 0-10 volt / 2-20mA / 4-20mA)

Or Digital (firm will develop the protocol, if required without additional cost within project duration) to configure with the PC.

User configurable channels, stations and equipments with communication parameters.

Analyzer data channel should comprise of Name, Units, Communication Address, Validity Range, Operation and Error Status.

Provision to incorporate conversion factors such as PPB to $\mu\text{g}/\text{m}^3$ etc.

Software should be equipped to configure the analysers with it, irrespective of the output mode i.e. Analog or Digital (RS 232) of the instrument.

System should read raw data values of the analyzers and meteorological instruments and duration of averaging data should be user selectable like 10 / 20 / 30 / 40 / 50 / 60 seconds.

The output should be converted into realistic data in prescribed units.

Data Collection

Software should collect each second data.

Average data over user selectable time (1, 5, 30, 60 seconds time interval) period.

Operational status, Error status, calibration status and calibration values observed from the analyzer should be captured and should be made available along with the data with a frequency of maximum five minutes.

System should collect of the diagnostics of the instrument comprising actual diagnostics parameters and their values at least once in every five minute to check the state of the health analyzer.

Calibration parameters

Provision to entering calibration, span calibration values of gas cylinder/permeation to devices

Provision for collecting zero calibration, span calibration values (pre calibration & post calibration) in to the database for further analysis.

Provisions to collect electronic system pre calibration & post calibration to ascertain the percentage deviation/correction apply during each calibration.

Data Storage

Data along-with diagnostic, calibration, alarms should be stored at station computer at a defined path.

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Interval of data dumping will be same as defined in the data collection

System should be capable to keep every second acquired data from 32 channels for a period of minimum five years.

Data stored should be plain text format

No data encryption should be done at the station and if encryption is done than decryption procedure should be made available in soft file format to check the data at station at any point of time. To convert data on continuous basis for exporting to any other software, if required, procedure should be available without any licensing.

Data Display (Statistical analysis of data)

In 4-in-4 graphs, 4-in-1 graph and / or 16-in-1 graph formats

In terms of 4-in-1 table format

Real time multi – graphs over user selectable time period.

Display of graphic & tabular display of the current data.

Graphical form should comprise of 4-4 graphs, 4-1 graphs in user defined format i.e. 1, 5, 10, 15, 30 min, 1hour, 4, 8, 24 hour, 30 days and yearly. (user definable time series)

Tabular form should comprise of 4 channel list in user defined format i.e. 1, 5, 10, 15, 30 min, 1hour, 4, 8, 24 hour, 30 days and yearly. (user definable time series)

Station instruments basic configuration etc. should be visible on screen continuously.

Main window for real time display of all measured parameters with status of all analyzers/sensors.

Statistical analysis tools like regression analysis, co-relation analysis and other analysis as per industry standards in the field of environment should be available and if not the firm should develop these for WBPCB AND CPCB within a time frame.

The system should have procedures for normal analysis tools like calculation of data with respect to a threshold value, average, minimum, maximum, calculation of violating value with respect defined values (Air Quality Standards) for defined period for the database etc.

Data analysis of diagnostics parameters

Data analysis of Pre calibration and post calibration data (if facility not available can be developed)

Data analysis of corrections applied of each calibration cycle (if facility not available can be developed)

The system dashboard should have the option for customization as per the requirement and request of the authorities.

Data Backup

There should be defined data backup procedure through which data can be extracted from station computer in simple text format / excel (user definable).

There should be defined restore procedure also to restore the data in case of data loss.

A display screen should be available to update the user about data availability.

Data Validation automatic checks at station software

Zero level and span level checks if performed cyclically and defined results are not obtained up to +/- 5% (user definable 0-10%) then system should alarm the user of system failure and the recorded alarm should be transmitted to central software.

After instruments perform the calibration the results obtained should be recorded and should be transmitted to central computer.

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Data validation requests generated at station computer

At least three tier request generation and request acceptance system procedure is desired. Details are given in the Annexure –I.

Inbuilt checks capability may be provided, where if instrument throws erratic data software can check automatically and display message and send information in the form of corrected data in corrected database to be approved by the central software at central level. (facility if not available needs to be developed by the system provider)

There should be provision of two databases one is raw database and another corrected database. (facility if not available needs to be developed by the system provider)

Validation of data through calibration database Pre calibration & post calibration values collected.

Calibration of systems

Calibration window for analyzer for the calibration from computer.

Remote Access to Calibration: Calibration exercise need to be done remotely. All necessary arrangements for it should be made in the system.

Calibration data file may be prepared separately.

Calibration database need to be formed, stored and transmitted to central.

Calibration cycles to be as per the models of the instruments.

Calibration records should store the calibration values displayed by instrument.

Diagnostics during calibration should also be recorded.

Location of station

Fixed Station location to be recorded

Moving station location to be recorded

Latitude and longitude of stations be recorded

Data transfer to Central System and Other Servers

All data captured at station computer should be transferred to central software.

User selectable time frame for transmission of data to central server.

Diagnostics (actual diagnostics parameter values recorded each time in the station), configurations (station channel configurations), alarms (generated alarms) should be transmitted.

The bidder has to ensure and facilitate online and real time transfer of data to the WBPCB AND CPCB server(s) as and when required and as per direction(s) of the WBPCB AND CPCB.

Data transfer to Display Boards

The system provider is responsible to make necessary software provisions to connect output on display boards. The formats of files may vary, the formation of defined formats is the responsibility of system provider for the project duration. Location of the display Board will be a prominent place within the city. GPRS/3G/4G/5G assisted technology for data transfer to the Board is preferred.

Software should be capable to transfer and display online data on display board at the station location.

The data in user defined formats (customizable) should be made available for continuous display.

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DATA ACQUISITION SYSTEM AT THE CENTRAL STATION

SPECIFICATIONS OF CENTRAL SOFTWARE

Data communication system handles the data transmission of an ambient air quality network and receives incoming messages / signals from remote stations. The central software processes signals and data and displays it on the web and other interfaces. Detailed requirement is as below:

Software at Central Station

Software should not have any restriction on number of locations and computers either technologically or in terms of licensing.

Should display multiple stations on - line data (momentary values) in tabular text and graphic format.

Data should be received by the central from all locations within 5minutes duration or at user defined time intervals.

Data along-with diagnostics and calibration details should be transmitted at central from all connected locations.

Should support dialup systems, broadband connectivity, wireless connectivity, 2G or 3G or any new technology which shall be in place during project time should be compatible and if not need to developed by the system provider up-to project duration without additional charges.

Should have the remote control facilities for calibrations (Zero & Span) of instruments and measuring range modifications.

Should have facility for displaying data communication error reports, image management which should be recorded and should be available for display.

The software should also have REST API support for connectivity for any future 3rd party integration.

Data Display at Central Station

In 4-in-4 graphs, 4-in-1 graph and/or 16-in-1 graph formats

In terms of 4-in-1 table format

Real time multi – graphs over user selectable time period.

Display of graphic & tabular display of the current data like simple 3D line and column chart, polar diagnostics and 3D perspective column chart.

Graphical form should comprise of 4-4 graphs, 4-1 graphs in user defined format i.e. 1, 5, 10, 15, 30 min, 1hour, 4, 8, 24 hour, 30 days and yearly. (user definable time series)

Tabular form should comprise of 4 channel list in user defined format i.e. 1, 5, 10, 15, 30 min, 1hour, 4, 8, 24 hour, 30 days and yearly. (user definable time series)

Display of data using selectable name of different stations.

Generation of Wind Roses, Pollution Roses (12 & 16 directional i.e. 0 degree, 22.5, 45, 67.5, 90 and 360 degree) with user defined time limits.

Calculate vector mean of wind direction.

Programmable down loading of data.

Comparison of data w.r.t. Standards in Graphical form and tabular form with information of values exceeds the Standards.

Specific data zooming facility

Database correction procedure

Separate user ID and Password for correction of database so that all regional level users if authorized can validate their regions data and the events be recorded along-with ID and time.

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Data validation trail recording.

The system dashboard should have the option for customization as per the requirement and request of the authorities.

Data Export

Customizable data format developing capability required.

Possibility to export the data files in Excel, Text and other formats Tabular form should be in user defined format i.e. 1, 5, 10, 15, 30 min, 1 hour, 4, 8, 24 hour, 30 days and yearly.

Compulsory and on-line and real time transfer of data from the central DAS to the Database of the WBPCB. This has to be complied as a precondition of commissioning.

The total number of export is not limited to the mentioned scope.

Data Import

In case of communication medium phase there should a mechanism to shift the data into Pen drive (Physical medium for data collection) physically and a procedure to import the same on central software.

Printing

Possibility to connect different types of printers and auto printing facility for all displays generated throughout the analysis of data at any point of time.

Data Validation automatic checks at Central software

Zero level and span level checks if performed cyclically and defined results are not obtained up to +/- 5% (user definable 0-10%) then system should generate alarm the user of system failure and the recorded alarm should be transmitted to central software and stored. There should be provisions to read these alarms in a database for corrective actions and for comparison of data for acceptability or rejection.

After instruments perform the calibration the results obtained should be recorded and should be transmitted to central computer and stored.

There should be provisions to configure at least 08 alarms for any given instrument auto check.

Data validation requests management at central computer (if not available facility may be developed by the firm)

Data validation requests sent by station computer should be recorded and the system should provide a window to user to accept or reject the reasons mentioned by the user end.

Inbuilt checks capability should be provided, which can be configured by the administrator at central to put alarms according to requirement on data, errors generated or on diagnostics of systems.

The software at central should have facility to log in data validation requests. These requests will carry the erroneous data for user selected period and for which user at station will request to change the data due to environmental or instrumental operation conditions. These requests will reside in central location and whenever user at central agrees the data will be changed in the validated database. Hence, system will have two types of databases 1) Raw database which can never be touched 2) which has to be modified and corrected as per agreed conditions. The detail of user requesting or applying changes in corrected database should be recorded with time.

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Data Display at Web (if not available facility may be developed by the Vendor)

System should have standard web display software in place.

Central software should be capable to show the data in predefined formats at website on a physical map.

The data from Corrected database shall be displayed on the web.

Current data should be displayed on web page.

There should be provisions to show no. of violations occurred, percentage of violation occurred at stations parameters comparing hourly, 8 hourly, 24 hourly and yearly standards

Provision is required to change standard value, since standard values do change after certain period of time as per Govt. policy.

Displayed web page should have facility of providing information to all with respect to environment as well as to provide specific files for downloading.

The logo of both GoWB and WBPCB should be displayed on webpage.

The disclaimer have to be provided on the webpage

Some predefined queries have to be developed to display the data on web page. A search page needs to be developed for converting data into meaningful format for the general public. Help in developing such kind of systems can be taken from existing running system at www.cpcb.gov.in/caaqm and www.cpcb.gov.in/cpcbpa.

The current data displayed on the web should have comment inserting facility at individual data and for running data as well like if any station instrument out of order then station official should be able to display message "Instrument under maintenance".

Similarly, when data goes beyond a defined limit it should automatically display a predefined message as comment on webpage as "Data under Scrutiny".

Automatic e-mail messages to be generated for the identified end users to start a corrective action.

Station photos to be uploaded for the display along-with the data.

User defined 05 pages may be developed additionally, if required by WBPCB designs for which may be decided mutually.

Data display at display board outside the office at central location also

Data display is also required at regional and central locations for which software provision has to be made at each location.

Remote Procedures (if not available facility may be developed by the Vendor)

Central software should have capability to allow to connect any station instrument through remote.

Central software administrator should be able to go for remote calibration of any of the systems.

Software should be capable to operate remote stations configurations.

Control panel window should be available for controlling each analyzer.

Alarm window for valid alarms of all analyzers and sensors.

It should have transparent data – connection to each analyzer from remote.

System should be capable to remotely configure all stations through remote location using configuration file to maintain the uniformity. The configuration command from central or from regional location should be active.

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Data Reports Generation

To prepare reports hourly, weekly, monthly, yearly in user defined interval and formats.

Mean, Median, Percentile, Maximum, Standard deviation, Frequency analysis and Maximum Frequency analysis.

System should have predefined user selectable procedures through which reports of any specific station or multi stations reports upto four parameters can be generated as per user selected time frame.

Data Comparison

Software should be able to compare any of the four channels irrespective of type of data in the system with respect to each other on a single time scale user selectable.

Data Comparison on different time scale

Software should be able to compare data on the basis of different time scales like one station (x) parameter (y) of one given date is compared with other station (z) parameter (y) on any other date in a single graph.

Data reports, calibration reports and status reports with user time periods.

Historic multi – curves / graphs over user selectable time period.

Report generation over user selectable time period (instantaneous or averaged over a period of 1, 15, 30 min, 1 hr, 4, 8, 12, 16 and 24 hrs etc.).

Diurnal variation, standard deviation, regression and other statistical parameter reporting possibilities with various available mathematical methods.

If required separate report generation procedures have to be developed for which firm will be responsible for project duration.

Compatibility

Should have compatibility with the latest Operating System with a contract of 05 (five) years from the date of supply of software for providing assistance to operate system at WBPCB and CPCB and all the new patches developed for the software during these 05 years without additional cost. Software should have capability of data transmission with the presently available PROTOCOL (list attached).

Security

System should have the facility to have it Password protected or without password as decided by WBPCB at the time of implementation.

System software should be totally secured and any antivirus software required to run the system for the complete project duration has to be managed by the system provider.

Other Technical Conditions

Hardware required for data transmission has to be made available by the firm and there should not be non-compatibility.

Firm should have the capability to develop the Software PROTOCOL for data transmission from any system available in the field in future during next 05 years or up-to the project period.

Should support the latest formats of Windows 32 bit or 64 bit or any other available platform like Linux etc.

Manual of complete system should be provided.

Firm should provide the hardware required for data acquisition along with all the software's required like OS, MS. Office, Networking software, Remote functionality software, Data uploading software on website, Data display software if required, and should maintain hardware for project duration.

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Since, system has to be placed in NIC domain for which the web software developed along- with the database and web server software should be certified by CERT-IN empaneled vendors for vulnerability. The system provider is responsible for fulfilling all criteria required to place the system at NIC domain. The firm will be responsible for entire duration of the project for any vulnerability if noticed by NIC.

The computers required for the work to be supplied by the bidder. Scope of supply of computer lies exclusively with the bidder Details specifications of the system is to be provided by the bidder with bid document. Transferring of data (1) to the Central Server (to be supplied and installed through this project) at WBPCB head office and then to the WBPCB air quality web server database, (2) to the WBPCB AND CPCB server at Delhi and (3) to the server for National Air Quality Index are mandatory. Respective guidelines as available in the WBPCB AND CPCB web site are to be incorporated in the scope and implemented.

Scope of supply of the Display Board exclusively lies with the Bidder.

Details of desired data validation system

At least three tier request generation and requests acceptance procedure is desired in the system. It is presumed that level 1 is station, level 2 is Central location at regional level and level 3 at Central level.

The regional and central levels will have central station computers and software installed and stations will have station computer installed with station data acquisition software and data transmission software.

The flow of data has to be from station to Regional Level and then to Central level. It is desired that environmental database has to be corrected for instrumentation issues as well as for the environmental issues. Hence, officials available at stations will communicate with central and state levels through system itself by commenting on the data. The respective data can be picked up from the database at station itself, corrected to the desired numbers and then transmitted to regional level central computer where, the administrator of system if agrees to the changes desired then data flows to the next level else request is rejected. If request will come to Central server for accepting or rejecting then central level should have authority of accepting or rejecting the data. If central level agrees to the changes than data should be changed in the corrected database else request should be rejected. Hence, there should be provisions for accepting or rejecting data at all three levels accordingly. Here, whenever such requests are generated, concerned administrators need to be sent email alerts.

List of protocols for which CAAQM software should support

Bayern-Hessen	Intercomp5	FH62 Konf.	ChemPro 100
Intercomp 6	Intercomp 1	PVM100	MultiPD II
LabCom	Metek USA-1	VC820	X am 7000
Unor, Oxor	AK R+P	TSI 30222/25	HG Monitor 3000
Defor	MBF	Blendmaster	ESM FH40G
Multor	Gemi	Klimet	Travelpilot DX-V
Adam Module	Uras 14 Modbus	Thygan	AK Conf.
CLD700	Binos1000	USA Turbulence	Thermo Instr.
FH62	HP34970A	Thies DL14/15	PR820R

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Hygrowin	Almemo	Innova1312	PAC3
Gesytec II	Modbus	Multiwarn II	Data Collect SDR
RFM433	DGH Module	MeteoBus	VDO Navigation
NMEA183	BH/Timo 9600	Windobserver	Other IoT Protocols like MQTT, CoAP, LwM2M, AMQP

Internet Connectivity

Bidder will provide one Broad Band and one Leased Line (not less than 2 MBPS) connectivity or Multi-Service Provider 4G Connectivity via Wireless Modem or Wireless Broadband Service (depending on the the survey of the area) for each station.

The bidder's system needs to have compatibility with wireless connectivity as a mandatory requirement as well.

The arrangement for data porting to the display boards are to be made by the bidder

– be it wired or not.

Checklist to compare Firm's Technical capability table for specifications of Software

S. No.	Details	Capability of firm's software as on date	Firm agree or disagree to develop software in future	If firm agrees to develop application then time frame from individual activity
1.	Data transfer interval Max. 5 minutes from all locations or better?			
2.	System will transmit data along with diagnostics. If yes then how many channels diagnostics values shall be transmitted to central and at what duration?			
3.	System will transmit data along with Calibration values (Pre cal and Post Cal)?			
4.	System has remote calibration procedures in place for Regional level and central level both?			
5.	System has remote configuration facility for regional and central level both?			
6.	System has database validation procedure in place?			
7.	Web software already developed or not?			
8.	If Web software is available is it modifiable as per WBPCB AND CPCB need by the firm?			
9.	Whether agree to develop five web pages as per mutual discussion			
10.	Web software with password and or without password			
11.	Password providing facility available at regional levels			
12.	Statistical tools available at web software or not?			
13.	System provider is capable of placing system in NIC domain			
14.	System provider will provide certification from CERT-IN empanelled firms			
15.	Data import from other files			

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16.	Data export to other files			
17.	Pre-defined queries to be inbuilt for providing data to public whether these are already available or to be developed if yes then time frame?			
18.	Standards comparison and exceedances be reported on web			
19.	Different types of predefined formats of report preparation available or not?			
20.	support various protocols available till date as listed provided or not?			
21.	If new protocol based software is to be developed whether firm will			
22.	Unlimited Number of stations supported by Central Server software or not? If not then support for how many stations will be provided			
23.	System compatibility with Dialup/BB/2G/3G/4G/5G/Wireless available or not? If not then what technologies supported as on date? What time frame if other to be develop.			
24.	Software has Wind rose reports generating capability			
25.	Software has pollution rose generating facility			
26.	Software has diurnal variation facility			
27.	Software has mathematical tools			
28.	Software has 16 channels display at on Page or Integrated			
29.	Software has data communication error reports			
30.	System has error correction procedure			
31.	Software has parallel data display reports			
32.	Software has virtual channel deployment capacity			
33.	Software has data encrypting procedures at stations or not? If yes then data can be retrieved from station or not?			
34.	Software compatible for ANDROID technology			
35.	System Provider will provide all Hardware required at station and Central			
36.	System Provider all necessary software required for data acquisition, display, Analysis, website uploading etc.			

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10.0 SPECIFICATIONS OF DAY LIGHT & NIGHT VISIBLE DATA DISPLAY SYSTEM

- 10.1 Size of display System : 4' x 12'
- 10.2 Visibility range : 200 Meters (Day Time)
- 10.3 Nos. of display Line : 4
- 10.4 Display of colour elements : Multi Colour (Red, Green and Blue)
- 10.5 Minimum life span of the system : 10 Years
- 10.6 Smallest Character Size : 260 mm x 190 mm (approx.)

10.7 Operating and Non Operating Temperature : 0 – 50 °C

10.8 Humidity Tolerance Range : 0 – 100%

10.9 Languages supported by the display : English & Hindi

10.10 Color Gradient : Cluster LED based

10.11 Display Characters (Example):

S. No.	Parameters	Concentration (µg / m3)	Standard Limit (µg / m3)
10.11.1	Particulate Matter (PM10)	400	100
10.11.2	Particulate Matter (PM2.5)	160	60
10.11.3	SO ₂	35	80
10.11.4	NO ₂	79	80
10.11.5	CO	3320	2000
.....
.....

The display of above variable data should be supported with moving messages / slogans to be changed from time to time

- 10.12 Input Power requirement : Cluster LED based
- 10.13 Display Mounting : Weather proof casing to cope up with local condition
- 10.14 Computer System : Software compatible with latest version
- 10.15 General : The display system should be capable to transfer the data from computer to Display Board through Modem System. The system should also have the facility to display the environment text message for public awareness.

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The display board is to be mounted within a distance of 200 meter from the station and is to be mounted on a steel structure at a height of 3.5 to 4 meters (ground to bottom of board) on suitable strong structure.

11.0 SPARES AND CONSUMABLES FOR ALL ITEMS COVERED IN THIS BID

The successful bidder shall ensure a steady stock of all required brand new spares and consumables at their "office-cum-service-center within West Bengal preferably in Kolkata" or in the stations. Spares and Consumables, whenever supplied to the office-cum-service-center or the stations, should be enlisted in a register and their use and disposal should also be recorded appropriately. Such repository of spares and consumables shall be checked and audited from time to time by the Board and loss of performance of the system due to non-availability of spares or consumables shall be covered by the CPG during that material time.

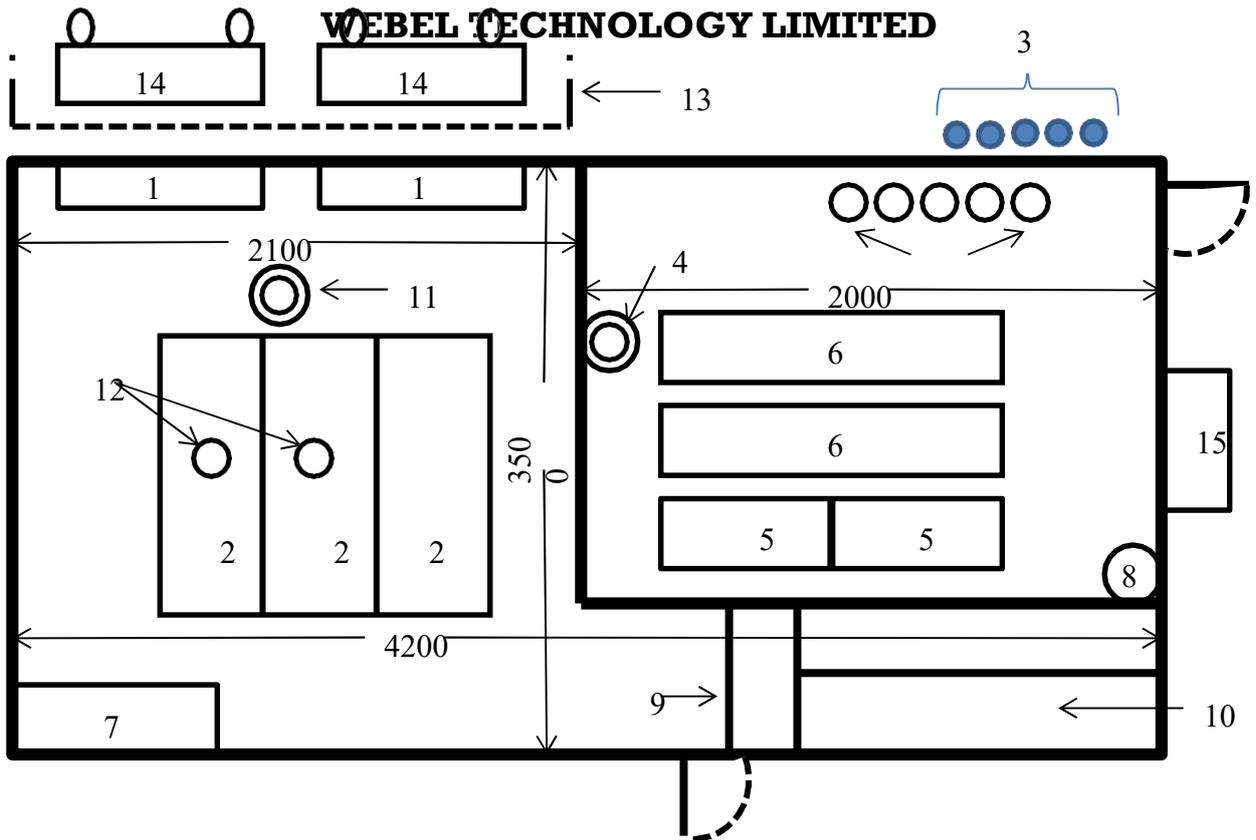
Spares and consumables for 3 months of operation depending on the last year's consumption shall have to be handed over to the WBPCB at the time of closing of the contract along with the list and use history.

12.0 CALIBRATION GAS AND CYLINDERS

Calibration gases are essential consumables. All required calibration gases are to be supplied and refilled in due time by the successful bidder for the entire period of the contract. Every batch of calibration gas has to be of highest quality and accompanied with the certificate traceable to NIST. Date expired calibration gases should never be used. All the calibration gases are to be supplied in separate cylinders (with double stage regulator) for each monitoring station. All the cylinders have to have a calibration certificate traceable to the NIST. The certifying authority has to have appropriate accreditation for such certification. Cost of this item may be compounded with that of the respective analyser. All cylinders are to be placed outside the shelter in a separate cage

13.0 Lightning arrestor and earthing.

Appropriate lightening arrestor and separate electrical earthing is to be established for each station. Apart from that two more earthings for (1) instruments and (2) electrical line are also to be established. The cost of this item may be compounded with the item "Installations for Continuous Automatic Monitoring Stations with Sampling line, Internal fitting, Instruments racks, Electrical connection from supply within 5 meter of the station and Gas line fittings, Tools (electrical and mechanical)".



1.	Roof Mounted Split AC	9.	Working Table
2.	19" Rack	10.	Racks for spare parts
3.	Gas Bottles	11.	Ambient Air Sampling System
4.	Mast for Meteorological Sensors	12.	Dust Sampling System (PM2.5 & PM10)
5.	Battery Box for UPS	13.	Sun Shed
6.	UPS Unit (5 and 10 kVA)	14.	Air Conditioning unit
7.	Electric supply Box	15.	UPS Room AC
8.	Exhaust fan		

All Dimensions are in mm

Drawing of Continuous Ambient Air Quality Monitoring Station

The minimum technical specification requirements for the CAAQMS to be installed at the locations are provided along with this document. However, the actual technical proposal can have higher or better technical performance parameters and the minimum specifications proposed should not be taken as a constraint on the upper side. The technical specifications given are descriptive and the Board may consider technical proposals having similar specifications.

WEBEL TECHNOLOGY LIMITED

SECTION – I

Place of installation for Continuous Ambient Air Quality Monitoring (CAAQM) Station

Place of installation for CAAQMS	Number of Units	District
Asansol	2	Paschim Bardhaman
Durgapur	2	Paschim Bardhaman
Raniganj	1	Paschim Bardhaman
Howrah	2	Howrah
Barackpore	1	North 24 Parganas
Total Number of Units	8	

WEBEL TECHNOLOGY LIMITED

SECTION – J

DETAILS OF ORDERS EXECUTED BY BIDDER

(Tender No. WTL/PCB/CAAQMS/22-23/019)

Sl. No.	Order No.	Order Date	Order Value	Brief description of items and job details	Completed (Yes/NO)	Name of the Customer	Contact details of the Customer

Authorized Signatory (Signature In full): _____

Name and title of Signatory: _____

Stamp of the Company: _____

Note:

Type of Project shall indicate the implementation of services (Delivery & Installation of CAAQMS & peripherals Air Quality Monitoring System).

Scope of work shall indicate whether it is implementation, Operation or maintenance.

Submit Customer Order Copy details of the order indicating the project value, customer contact details.

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SECTION – K

FINANCIAL CAPABILITY OF BIDDER

(Tender No. WTL/PCB/CAAQMS/22-23/019)

FINANCIAL INFORMATION

Sl. No.	Name of the Bidder	Turnover (Rs. / Crores)		
		2019-20	2020-21	2021-22
1				

Authorized Signatory (Signature In full): _____

Name and title of Signatory: _____

Stamp of the Company: _____

Note: Submit the audited financial statement/ audited annual report of the last three financial years.

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SECTION – L

BIDDERS'S DETAILS

(Tender No. WTL/PCB/CAAQMS/22-23/019)

1	Name of the Firm	
2	Registered Office Address	
	Contact Number	
	Fax Number	
	E-mail	
3	Correspondence / Contact address	
	Name & Designation of Contact person	
	Address	
	Contact Number	
	Fax Number	
	E-mail	
4	Is the firm a registered company? If yes, submit documentary proof	
	Year and Place of the establishment of the company	
6	Former name of the company, if any	
7	Is the firm <ul style="list-style-type: none"> • a Government/ Public Sector Undertaking • a propriety firm • a partnership firm (if yes, give partnership deed) • a limited company or limited corporation • a member of a group of companies, (if yes, give name and address and description of other companies) • a subsidiary of a large corporation (if yes give the name and address of the parent organization). If the company is subsidiary, state what involvement if any, will the parent company have in the project. 	
8	Is the firm registered with Sales Tax department? If yes, submit valid GST Registration certificate.	
9	Is the firm registered for Service Tax with Central Excise Department (Service Tax Cell)? If yes, submit valid Service Tax registration certificate.	
10	Total number of employees. Attach the organizational chart showing the structure of the organization.	
11	Are you registered with any Government/ Department/ Public Sector Undertaking (if yes, give details)	
12	How many years has your organization been in business under your present name? What were your fields when you established your organization	
13	What type best describes your firm? (Purchaser reserves the right to verify the claims if necessary) <ul style="list-style-type: none"> • Manufacturer • Supplier • System Integrator • Consultant • Service Provider (Pl. specify details) • Software Development • Total Solution provider (Design, Supply, Integration, O&M) • IT Company 	

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14	Number of Offices in district headquarters in West Bengal	
15	Is your organization having ISO 9001:2015 certificates?	
16	List the major clients with whom your organization has been / is currently associated.	
17	Have you in any capacity not completed any work awarded to you? (If so, give the name of project and reason for not completing the work)	
18	Have you ever been denied tendering facilities by any Government / Department / Public sector Undertaking? (Give details)	

Authorized Signatory (Signature In full): _____

Name and title of Signatory: _____

Company Rubber Stamp: _____

WEBEL TECHNOLOGY LIMITED

SECTION – M

MANUFACTURER'S AUTHORIZATION FORM

Date:

To
Webel Technology limited
Plot-5, Block-BP, Sector-V
Salt Lake
Kolkata-700 091

Ref: Tender No.: WTL/PCB/CAAQMS/22-23/019 dated 15.09.2022

WHEREAS _____ who are official producers of
_____ and having production facilities at
_____ do hereby authorize
_____ located at
_____ (hereinafter, the "Bidder") to submit a bid of the following
Products produced by us, for the Supply Requirements associated with the above Invitation for Bids.

When resold by _____, these products are subject to our applicable standard end user warranty terms.

We assure you that in the event of _____, not being able to fulfill its obligation as our Service Provider in respect of our standard Warranty Terms we would continue to meet our Warranty Terms through alternate arrangements.

We also confirm that _____ is our authorized service provider/system integrator and can hence provide maintenance and upgrade support for our products.

We also confirm that the products quoted are on our current product list and are not likely to be discontinued within 5 years from the day of this letter. We assure availability of spares for the products for the next two years after three years warranty.

We also confirm that the material will be delivered as per delivery schedule against above mentioned tender from the date of placement of confirmed order.

Name _____ In the capacity of _____

Signed

Duly authorized to sign the authorization for and on behalf of _____

Dated on _____ day of _____ 2022

Note 1: This letter of authority must be on the letterhead of the Manufacturer and duly signed by an authorized signatory.

Note 2: Bidder need to submit individual MANUFACTURER'S AUTHORIZATION FORM against serial no. "b,c,f,g,h,i,j,l,m,n,o" as per bill of materials.

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SECTION – N

FORMAT FOR PRE-BID MEETING QUERY

(Tender No. WTL/PCB/CAAQMS/22-23/019)

Name of the Bidder:

Queries

Sl. No.	Section No.	Clause No.	Page No.	Queries

Note: The filled form to be submitted in XLS & PDF Format. There is a cut off date for receiving of queries before Pre Bid Meeting. Queries received after the cutoff period will not be accepted. The Purchaser reserves the right to respond all queries over e-mail.

Authorized Signatory (Signature In full): _____

Name and title of Signatory: _____

Company Rubber Stamp: _____

WEBEL TECHNOLOGY LIMITED

SECTION – P

PROFORMA FOR PERFORMANCE BANK GUARANTEE

(On non-judicial stamp paper of appropriate value to be purchased in the name of executing Bank)

PROFORMA OF BANK GUARANTEE FOR SECURITY DEPOSIT –CUM-PERFORMANCE GUARANTEE

Ref Bank Guarantee no.....

Date.....

PROFORMA OF BG FOR SECURITY DEPOSIT **Undertaking formats**

KNOW ALL MEN BY THESE PRESENTS that in consideration of WEBEL TECHNOLOGY LIMITED, a Government of West Bengal Undertaking incorporated under the Companies Act, 1956 having its Registered office at Webel Bhavan, Block EP&GP, Sector V, Kolkata-700 091 (hereinafter called "The Purchaser") having agreed to accept from _____ (hereinafter called "The Contractor") Having its Head Office at _____, a Bank guarantee for Rs. _____ in lieu of Cash Security Deposit for the due fulfillment by the Contractor of the terms & conditions of the Work Order No. _____ dated _____ issued by the Purchaser for _____ (hereinafter called "the said work order _____ dated _____"). We _____ (Name & detailed address of the branch) (hereinafter called "the Guarantor") do hereby undertake to indemnify and keep indemnified the Purchaser to the extent of Rs. _____ (Rupees _____) only against any loss or damage caused to or suffered by the Purchaser by reason of any breach by the Contractor of any of the terms and conditions contained in the said Work Order No. _____ dated _____ of which breach the opinion of the Purchaser shall be final and conclusive.

(2) AND WE, _____ DO HEREBY Guarantee and undertake to pay forthwith on demand to the Purchaser such sum not exceeding the said sum of _____ Rupees _____) only as may be specified in such demand, in the event of the Contractor failing or neglecting to execute fully efficiently and satisfactorily the order for _____ Work Order no. , _____ dated _____

(3) WE _____ further agree that the guarantee herein contained shall remain in full force and effect during the period that would be taken for the performance of the said order as laid down in the said Work Order No. _____ dated _____ including the warranty obligations and that it shall continue to be enforceable till all the dues of the Purchaser under or by virtue of the said Work Order No. _____ dated _____ have been fully paid and its claims satisfied or is charged or till the Purchaser or its authorized representative certified that the terms and conditions of the said Work Order No. _____ dated _____ have been fully and properly carried out by the said contractor and accordingly discharged the guarantee.

(4) We _____ the Guarantor undertake to extend the validity of Bank Guarantee at the request of the contractor for further period of periods from time to time beyond its present validity period failing which we shall pay the Purchaser the amount of Guarantee.

(5) The liability under the Guarantee is restricted to Rs. _____ (Rupees _____) only and will expire on _____ and unless a claim in writing is presented to us or an action or suit to enforce the claim is filed against us within 6 months from _____ all your rights will be forfeited and we shall be relieved of and discharged from all our liabilities (thereinafter)

(6) The Guarantee herein contained shall not be determined or affected by liquidation or winding up or insolvency or closer of the Contractor.

WEBEL TECHNOLOGY LIMITED

(7) The executants has the power to issue this guarantee on behalf of Guarantor and holds full and valid power of Attorney granted in his favour by the Guarantor authorizing him to execute the Guarantee.

(8) Notwithstanding anything contained herein above, our liability under this guarantee is restricted to Rs. _____ (Rupees _____) only and our guarantee shall remain in force up to _____ and unless a demand or claim under the guarantee is made on us in writing on or before _____ all your rights under the guarantee shall be forfeited and we shall be relieved and discharged from all liabilities there under.

WE, _____ lastly undertake not to revoke this guarantee during the currency except with the previous consent of the Purchaser in writing. In witness whereof we _____ have set and subscribed our hand on this _____ day of _____.

SIGNED, SEALED AND DELIVERED

(Stamp of the executants)
WITNESS

(Name & address in full with Rubber Stamp)

Form of Bid Security (Bank Guarantee)

Bank Guarantee No.....

Date.....

WHEREAS,.....(name & address) (hereinafter called "the Applicant") has submitted his Bid dated _____ [date] or will submit his Bid for execution of _____ [name of Contract] (hereinafter called "the Bid") under Request for Bids No..... [insert number] (hereinafter called "the RFB")

KNOW ALL PEOPLE by these presents that We _____ [name of bank] of _____ [name of country] having our registered office at _____ (hereinafter called "the Bank") are bound unto _____ [name of Employer] (hereinafter called "the Employer") in the sum of _____ for which payment will and truly to be made to the said Employer the Bank binds itself, his successors and assigns by these presents.

SEALED with the Common Seal of the said Bank this _____ day of _____ 20____.

THE CONDITIONS of this obligation are:

- (1) If after Bid opening the Applicant (a) withdraws his bid during the period of Bid validity specified in the Letter of Bid, ("the Bid Validity Period"); or (b) does not accept the correction of the Bid Price or
- (2) If the Applicant having been notified of the acceptance of his bid by the Employer during the period of Bid validity:
 - (a) fails or refuses to execute the Contract Agreement in accordance with the Instructions to Bidders, if required; or
 - (b) fails or refuses to furnish the Performance Security, in accordance with the Instruction to Bidders.

WEBEL TECHNOLOGY LIMITED

we undertake to pay to the Employer up to the above amount upon receipt of his first written demand, without the Employer having to substantiate his demand, provided that in his demand the Employer will note that the amount claimed by him is due to him owing to the occurrence of one or any of the four conditions, specifying the occurred condition or conditions.

This Guarantee will remain in force up to and including the date _____ 30 days after the deadline for submission of Bids as such deadline is stated in the Instructions to Bidders or as it may be extended by the Employer, notice of which extension(s) to the Bank is hereby waived. Any demand in respect of this guarantee should reach the Bank not later than the above date.

DATE _____ SIGNATURE OF THE BANK _____

WITNESS _____ SEAL _____

[signature, name, and address]

WEBEL TECHNOLOGY LIMITED

INSTRUCTIONS FOR FURNISHING BANK GUARANTEE

1. Bank Guarantee (B.G.) for Advance payment, Mobilization Advance, B.G. for security Deposit-cum-Performance Guarantee, Earnest Money should be executed on the Non- Judicial Stamp paper of the applicable value and to be purchased in the name of the Bank.
2. The Executor (Bank authorities) may mention the Power of Attorney No. and date of execution in his/her favour with authorization to sign the documents. The Power of Attorney is to be witnessed by two persons mentioning their full name and address.
3. The B.G. should be executed by a Nationalised Bank/ Scheduled Commercial Bank preferably on a branch located in Kolkata. B.G. from Co-operative Bank / Rural Banks is not acceptable.
4. A Confirmation Letter of the concerned Bank must be furnished as a proof of genuineness of the Guarantee issued by them.
5. Any B.G. if executed on Non-Judicial Stamp paper after 6 (six) months of the purchase of such stamp shall be treated as Non-valid.
6. Each page of the B.G. must bear signature and seal of the Bank and B.G. Number.
7. The content of the B.G. shall be strictly as Proforma prescribed by WTL in line with Purchase Order /LOI/ Work Order etc. and must contain all factual details.
8. Any correction, deletion etc. in the B.G. should be authenticated by the Bank Officials signing the B.G.
9. In case of extension of a Contract the validity of the B.G. must be extended accordingly.
10. B.G. must be furnished within the stipulated period as mentioned in Purchase Order / LOI / Work Order etc.
11. Issuing Bank / The Bidder are requested to mention the Purchase Order / Contract / Work Order reference along with the B.G. No. For making any future queries to WTL.

WEBEL TECHNOLOGY LIMITED

SECTION – Q

SERVICE LEVEL AGREEMENT

The purpose of this Service Level Agreement (hereinafter referred to as SLA) is to clearly define the levels of service which shall be provided by the SI to SIA for the duration of this contract.

The SI and SIA shall regularly review the performance of the services being provided by the SI and the effectiveness of this SLA

Note: The purpose of this Service Level Agreement (hereinafter referred to as SLA) is to clearly define the levels of service which shall be provided by the SI to SIA for the duration of this contract.

The SI and SIA shall regularly review the performance of the services being provided by the SI and the effectiveness of this SLA

Service Level Agreement

Uptime Service: The service of the application should be available with at least 95% Availability. The percentage uptime is calculated on monthly basis as follows:

$(\text{Total hours in a month} - \text{Downtime hours within the month}) * 100 / \text{Total hours in a month}$

If the service provider fails to maintain guaranteed uptime of 95% on quarterly basis, customer shall impose penalty as mentioned below on slab basis.

Sl. No.	Availability in a quarter	Penalty (In Rs.)
1.	>= 95.0%	No Penalty
2.	>=93.0% And < 95.0%	₹ 25,000/-
3.	>=91.0% And < 93.0%	₹ 50,000/-
4.	< 91.0%	₹ 1,00,000/- This penalty will be cumulative with other conditions also. If it continues for more than 3 quarters, the project may be cancelled.

WEBEL TECHNOLOGY LIMITED

SECTION - R

NIT DECLARATION FOR BIDDER

(Bidders are requested to furnish the Format given in this section, filling the entire Blank and to be submitted on Bidder's Letter Head)

To
Webel Technology Limited
Plot – 5, Block – BP, Sector - V,
Salt Lake City,
Kolkata – 700091.

Sub: Supply, Installation and Commissioning of 8(eight) number Continuous Ambient Air Quality Monitoring Station (CAAQMS) at Various locations across West Bengal and Comprehensive Maintenance & Operation Contract (CMOC) of These CAAQMS installation for the period of 5 years.

Dear Sir,

We the undersigned bidder/(s) declare that we have read and examined in details the specifications and other documents of the subject Tender No. (Tender No. WTL/PCB/CAAQMS/22-23/019 dated 15.09.2022 for Delivery, Installation & Onsite comprehensive Annual Maintenance of CAAQMS & peripherals subjected items mentioned in BOM with Serial No. "b, c, f, g, h, i, j, l, m, n, o" to be for mentioned location(s) for West Bengal Pollution Control Board, published by Webel Technology Limited in e-Tender website.

We further declare that we have agreed and accepted all the clauses / sub-clauses / formats / terms & conditions other requirements related to the said tender and we will abide by the same as mentioned in the tender document while participating and executing the said tender.

Thanking you, we remain

Yours faithfully

.....
Signature

.....
Name in full

.....
Designation

.....
Company Stamp

Dated, thisday of2022

WEBEL TECHNOLOGY LIMITED

SECTION - S

Please submit undertaking letter as per Ministry of Finance Memorandum No.: F.No.6/18/2019PPD dated 23.07.2020 & Office Memorandum No.: F.18/37/2020-PPD dated 08.02.2021 as per proforma given below on bidder's letterhead.

UNDERTAKING LETTER OF BIDDER

Sub: Undertaking as per Office Memorandum No.: F. No.6/18/2019-PPD dated 23.07.2020 & Office Memorandum No.: F.18/37/2020-PPD dated 08.02.2021 published by Ministry of Finance, Dept. of Expenditure, Public Procurement division

Ref: Bid Number: _____

Dear Sir,

I have read the clause regarding restriction on procurement from a bidder of a country which shares a land border with India. I certify that we as a bidder and quoted product from following OEMs are not from such a country or, if from such a country, these quoted products OEM has been registered with competent authority. I hereby certify that these quoted product & its OEM fulfills all requirements in this regard and is eligible to be considered for procurement for Bid number _____.

No.	Item Category	Quoted Make & Model

In case I'm supplying material from a country which shares a land border with India, I will provide evidence for valid registration by the competent authority, otherwise Webel Technology Limited/End user Dept. reserves the right to take legal action on us.

(Signature)

Authorized Signatory of **M/s <<Name of Company>>**

Date

WEBEL TECHNOLOGY LIMITED

SECTION - T

Please submit undertaking letter as per Ministry of Finance Memorandum No.: F.No.6/18/2019PPD dated 23.07.2020 & Office Memorandum No.: F.18/37/2020-PPD dated 08.02.2021 as per proforma given below on OEM letterhead.

UNDERTAKING LETTER OF OEM

Sub: Undertaking as per Office Memorandum No.: F. No.6/18/2019-PPD dated 23.07.2020 & Office Memorandum No.: F.18/37/2020-PPD dated 08.02.2021 published by Ministry of Finance, Dept. of Expenditure, Public Procurement division

Ref: Bid Number: _____

Dear Sir,

I have read the clause regarding restriction on procurement from a bidder of a country which shares a land border with India. I certify that our quoted product and our company are not from such a country, or if from such a country, our quoted product and our company have been registered with competent authority. I hereby certify that these quoted products and our company fulfills all requirements in this regard and is eligible to be considered for procurement for Bid number _____.

No.	Item Category	Quoted Make & Model

In case I'm supplying material from a country which shares a land border with India, I will provide evidence for valid registration by the competent authority; otherwise, Webel Technology Limited /End user Dept. reserves the right to take legal action on us.

(Signature)

Authorized Signatory of **M/s <<Name of Company>>**

Date

WEBEL TECHNOLOGY LIMITED

SECTION – U

DEVIATION SCHEDULE

(Tender No. WTL/PCB/CAAQMS/22-23/019)

Sl.	Item Description	Compliance (YES/NO)	Remarks (if any deviation)
1	CAAQM Station each consisting of the following components/items/services as described below		
	Monitoring Station (Container based) for housing the CAAQM set up		
	Air Conditioner		
	On line UPS (1X15 KVA, 1 hr. back up)		
	Sampling System having 10 port manifold		
	19" Rack cabinet or equivalent to accommodate all analyzers		
	Ambient Oxides of Nitrogen (NO/NO2/NOx/ NH3) Analyzer		
	Ambient Sulphur Dioxide (SO2) Analyzer		
	Ambient Ozone (O3) Analyzer		
	Ambient Carbon Monoxide (CO) Analyzer		
	Benzene Monitor / Analyzer		
	Multi calibration System for Gas calibration		
	Automatic PM2.5 Particulate Matter Monitor		
	Automatic PM10 Particulate Matter Monitor		
	Meteorological Sensors for Wind Direction, Wind Speed, Vertical Wind Speed, Ambient Temperature, Relative Humidity, Solar Radiation & Barometric Pressure, Rainfall and Telescoping Crank – up Meteorological Tower		
	Computer System consisting of one PC along with Laser Printer and DAS at each monitoring station with peripherals and software for data acquisition / display / transfer and systems integration.		
	Installations for Continuous Ambient Air Quality Monitoring Stations with Sampling line, Internal fitting, Instruments racks, Electrical connection from supply within 5 meter of the station and Gas line fittings, Tools (electrical and mechanical)		
	Central server system with required UPS		
	Day light & Night visible data display (Display Board) system. All works, civil, mechanical, electrical and data connectivity (wired or remote) to be done		
	Modem/Data Card/Communication system to be established between the station, WBPCB head quarter and the CPCB AQI portal.		
	RCC foundation, pillars, platform and misc. works - civil works only (In case the platform is at 1 meter height from ground)		
	RCC foundation, pillars, platform and misc. works - civil works only (In case the platform is at 4 meter height from ground)		
	RCC foundation, pillars, platform and misc. works - civil works only (In case the container is to be mounted on a roof top at a height between 3 to 10 meter)		
	FAT (Factory Acceptance Test) for a considered 7 day period for 2 officials at the OEM manufacturing location		

Authorized Signatory (Signature In full): _____

Name and title of Signatory: _____

Company Rubber Stamp: _____

WEBEL TECHNOLOGY LIMITED

ATTACHMENT - 1: PROTOCOL OF MANUAL CALIBRATION

PROTOCOL OF MANUAL CALIBRATION

WBPCB/CAAQMSPROTOCOL NO..... DATE.....

NAME OF THE INSTRUMENT	CALIBRATION PARTICULAR				REMARKS
	ZERO	SPAN -1	SPAN – 2	SPAN SOURCE VALUE	
SO ₂ ANALYZER					
NO ANALYZER					
NO ₂ ANALYZER					
NO _x ANALYZER					
NH ₃ ANALYZER					
CO ANALYZER					
O ₃ ANALYZER					
PM 2.5 ANALYZER					
PM 10 ANALYZER					
BENZENE ANALYZER					

WEBEL TECHNOLOGY LIMITED

ATTACHMENT - 2, DAILY REPORTING FORMAT OF METREOLOGICAL PARAMETERS

DAILY REPORTING FORMAT FOR METREOLOGICAL PARAMETERS

(To be submitted daily through automated portal at 12 Noon for the previous day ending 12midnight)

Location:

Date:

Hrs.	WIND SPEED	WIND DIRECTION	VERTICAL WIND SPEED	HUMIDITY	TEMPERATURE	SOLAR RADIATION	PRESSURE	REMARKS
00-01								
01-02								
02-03								
03-04								
04-05								
05-06								
06-07								
07-08								
08-09								
09-10								
10-11								
11-12								
12-13								
13-14								
14-15								
15-16								
16-17								
17-18								
18-19								
19-20								
20-21								
21-22								
22-23								
23-24								
Min.								
Max.								
Average								

WEBEL TECHNOLOGY LIMITED

ATTACHMENT - 3: MONTHLY REPORTING FORMAT FOR METREOLOGICAL PARAMETERS MONTHLY REPORTING FORMAT FOR METREOLOGICAL PARAMETERS

(To be submitted monthly next day ending month)

WBPCB

Location:

Month:

DATE	WIND SPEED	WIND DIRECTION	VERTICAL WIND SPEED	HUMIDITY	RAIN FALL	TEMPERATURE	SOLAR RADIATION	PRESSURE	REMARKS
1.									
2.									
3.									
4.									
5.									
6.									
7.									
8.									
9.									
10.									
11.									
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24.									
25.									
26.									
27.									
28.									
29.									
30.									
31.									
Min.									
Max.									
Average									

WEBEL TECHNOLOGY LIMITED

ATTACHMENT - 4: DAILY REPORTING FORMAT FOR MAIN POLLUTANTS

DAILY REPORTING FORMAT FOR MAIN POLLUTANTS

(To be submitted daily at 12 Noon for the previous day ending 12 midnight)

(Parameters not available at a station shall be omitted)

WBPCB

DAILY AMBIENT AIR QUALITY DATA

Location:

Date:

Hrs.	SO2	NO	NO2	NOX	NH3	CO	O3	PM 2.5	PM 10	Benzene	Remarks
00-01											
01-02											
02-03											
03-04											
04-05											
05-06											
06-07											
07-08											
08-09											
09-10											
10-11											
11-12											
12-13											
13-14											
14-15											
15-16											
16-17											
17-18											
18-19											
19-20											
20-21											
21-22											
22-23											
23-24											
Standards											
Min.											
Max.											
Average											

WEBEL TECHNOLOGY LIMITED

ATTACHMENT - 5: MONTHLY REPORTING FORMAT FOR MAIN POLLUTANTS MONTHLY REPORTING FORMAT FOR MAIN POLLUTANTS

(To be submitted monthly at 12 Noon next day ending month)
(Parameters not available at a station shall be omitted)

WBPCB MONTHLY AMBIENT AIR QUALITY DATA

Location:

Month:

Date	SO2	NO	NO2	NOX	NH3	CO	O3	PM 2.5	PM 10	Benzene	Remarks
1.											
2.											
3.											
4.											
5.											
6.											
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31.											
Min.											
Max.											
Average											