**Punjab Pollution Control Board,**

**Vatavaran Bhawan,**

**Nabha Road, Patiala**



**INTERNATIONAL COMPETITIVE BIDDING**

**FOR**

**SUPPLY, INSTALLATION, COMMISSIONING**

**AND**

**OPERATION & MAINTENANCE SERVICES**

**OF**

**04 No. CONTINUOUS AMBIENT AIR QUALITY MONITORING**

**STATIONS (CAAQMS)**

**E-BIDDING DOCUMENT**

**Volume-I**

**23.09.2022**

**Supply and O & M of Continuous Ambient Air Quality Monitoring Stations (CAAQMS)**

**E-BIDDING DOCUMENTS**

**INTERNATIONAL COMPETITIVE BIDDING FOR**

**SUPPLY, INSTALLATION, COMMISSIONING**

**AND**

**OPERATION & MAINTENANCE SERVICES**

**FOR**

**04 No. CONTINUOUS AMBIENT AIR QUALITY MONITORING STATIONS (CAAQMS)**

|  |  |
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**INVITATION FOR BIDS (IFB)**

INTERNATIONAL COMPETITIVE BIDDING

NO. Date ---------------

PROJECT: SUPPLY, INSTALLATION, COMMISSIONING AND OPERATION

* + MAINTENANCE SERVICES OF 04 Nos. of CONTINUOUS AMBIENT AIR QUALITY MONITORING STATIONS (CAAQMS) IN PUNJAB POLLUTION CONTROL BOARD, PATIALA (Pb.) INDIA

**GLOBAL TENDER NOTICE**

1. Punjab Pollution Control Board (PPCB), Patiala invites single stage two bid system (Technical & Financial) through e-submission of competitive bids on Punjab Government Portal at www.eproc.punjab.gov.in for supply, installation & commissioning of equipment’s (listed in Bid documents) for 04 nos. of Continuous Ambient Air Quality Monitoring Stations (CAAQMS) and Operation & Maintenance of these CAAQMS at various locations as listed and related services as specified in the bid document. Manual bid shall not be accepted.

|  |  |  |
| --- | --- | --- |
| Name of Work | : | SUPPLY, INSTALLATION, COMMISSIONING AND OPERATION &MAINTENANCE SERVICES OF 04 Nos. of CONTINUOUS AMBIENT AIR QUALITY MONITORING STATIONS (CAAQMS) |
| Bid Price/Tender Fee | : | Rs. 5,000/- (Rs. Five Thousand only) in the form of A/c Payee Demand Draft in favour of ‘Member Secretary’ Punjab Pollution Control Board payable at Patiala.’ |
| EMD Price | : | Rs. 20.00 Lacs (Rs. Twenty Lacs) @Rs.5.00 Lacs (Rs. Five Lacs only) for each station in the form of A/c Payee Demand Draft in favour of ‘Member Secretary’ Punjab Pollution Control Board payable at Patiala or through a bank guarantee as per attachment 10.  Bank detail and PAN of PPCB  Name of A/C holder: Punjab Pollution Control Board  Name of Bank: Punjab National Bank  A/C Number: 2918000100226267  IFS Code: PUNB0291800  PAN: AAATP7006K  GST No. : 03AAATP7006K1ZP |

**DATE SHEET**

|  |  |
| --- | --- |
| Date of Publishing of Tender |  |
| Bid Document Download/Sale Start Date |  |
| Pre Bid Meeting |  |
| Bid Submission START Date |  |
| Bid Submission LAST Date |  |
| technical Bid Opening Date |  |

1. This invitation for the Bid is open to any bidder who is a reputed manufacturer (Original Equipment Manufacturer) or authorized representative (O&M Partner, authorized channel partner, Indian subsidiary) of the manufacturer, who on its own or along with his associate as O & M partner, authorized channel partner, Indian subsidiary meets the qualifying requirements stipulated hereunder for participation in the tender. The bidder shall furnish satisfactory evidence to establish that bidder meets the requisite qualifying requirements.

2.1 The Principal Firm (manufacturer firm) should have minimum three years’ experience of supply, installation and commissioning of CAAQMS and his representative firm (O&M Partner, authorized channel partner, Indian subsidiary) should have minimum one-year experience of satisfactory operation, maintenance, and report preparation etc. of CAAQMS.

2.2 For all the items not manufactured by the Bidder i.e. Analyzers, Monitors, Calibrators and Sensors, the bidders should be authorized by the manufacturers for these items as per the format “Form of letter of authority” provided as Attachment 3 of Section III, except where make is prescribed.

2.3 Bidder or their authorized representative should have A MINIMUM TURNOVER OF at least Rs. 300 Lacs (Rs. Three Hundred Lacs) OVEREACH OF THE LAST 03 YEARS to execute the contract. (Attach Last three years' balance sheets)

2.4 The bidder should furnish information on all past supplies along with satisfactory performance Certificate, in “Performance Statement” as per Attachment No. 8 C/8 B of Section III and minimum two (2) no. documentary evidences (client certificates in favors of bidder or manufacturers of equipment) in support of the satisfactory networking and operation of similar air monitoring stations having at least Four parameters PM 2.5, PM 10, SO2, NOx.

2.5 The bidder or its associates as an O&M Partner, authorized channel partner, Indian subsidiary in India, (any authorized agency in India) should have well trained O & M personnel on its regular rolls and on award of LOI bidder shall submit the name of Project Engineer (Grad. Engineer), Technicians (Diploma holder in electronics/ instrumentation) and Data Processor for central data management and CAAQM station respectively, along with their resume & Provident Fund slip as proof of their regular employment with the bidder. All personnel should be on the pay roll of the bidder or its O&M Partner, authorized channel partner, Indian subsidiary.

2.6 The bidder or its O&M Partner, authorized channel partner, Indian subsidiary shall furnish an undertaking regarding carrying out satisfactory O &M CAAQMS covered in this document as per terms & conditions of the document on behalf of the bidder. This information is to be provided as per Attachment 5 & 9 of Section III.

1. A complete set of bidding documents may be downloaded by any interested eligible bidder from the Web-site of Punjab Government Portal at www.eproc.punjab.gov.in at a cost of Rs. 5000/- (Rs. Five Thousand only) and send the cost of tender documents in the form of Demand Draft in favor of **Member Secretary, Punjab Pollution Control Board, Patiala Payable at Patiala & send the same with tender documents in separate envelope earmarking “the cost of Tender Documents” on the envelope.**
2. This bidding takes simultaneous bidding procedure in two part (folder) bidding systems as Part-1: Technical Requirements for participation and Part:2 Financial Bid. All the eligible and interested bidders are required to submit the Technical Offer for building the station at selected/specified cities and data transmission to PPCB and CPCB, Delhi along with online data transfer by means of lease line having independent IP Address in parallel; and Financial Bid for data supply simultaneously through online e-tender system. Technical offers will be opened and evaluated first. Only the bidders whose Technical bid is found substantially responsive will be notified by the Board and uploaded on the web-portal of the Board. Financial bids (to be submitted in the Template provided with the tender document) will be opened of only technically qualified firms and the date and place intimated to participate in the public opening of the financial bid.
3. Eligible Bidders must submit their bids for complete scope of work. Any bid submitted for incomplete scope shall be rejected out rightly.
4. The authorized representative of Foreign Bidders in India are also permitted to purchase Tender Document on behalf of their Principals by submitting a letter of authority from their Principals and by depositing requisite cost of tender document.
5. All the bids must be accompanied by bid security (EMD) in accordance with the Instructions to Bidders in the bidding documents.

8**.** All bids must be submitted on or before the date mentioned in the Tender Document above. Any offer received after expiry of the time and date prescribed for receiving complete bid will not be entertained. Only technical Bid will be opened in public on the date as specified in the Tender Document above in the presence of the bidders or their representative, who choose to attend on the said date in the Committee Room, Punjab Pollution Control Board, Nabha Road, Patiala.

1. Issuance of Bidding Documents will not be construed to mean that such bidders are automatically considered qualified.

1. Punjab Pollution Control Board will not be responsible for any cost(s) or expense(s) incurred by bidder(s) in connection with the preparation or delivery of bids.
2. The Punjab Pollution Control Board reserves the right to reject any or all the bids without assigning any reason whatsoever.
3. In the event of date being declared as a closed holiday the date for submissions of bids and opening of bids will be the following working day at the appointed time.
4. Interested eligible Bidders may obtain further information from website of Punjab Government (www.eproc.punjab.gov.in).
5. Description of works shall be as per Annexure -I enclosed.

**Sd/-**

**The Member Secretary,**

**Punjab Pollution Control Board,**

**Vatavaran Bhawan,**

**Nabha Road, Patiala**

**List of the Cities where CAAQMS will be installed**

1. Dera Baba Nanak (Punjab), India -1 No.
2. Dera Bassi (Punjab), India -1 No.
3. Naya Nangal (Punjab), India- 1No.
4. Barnala (Punjab), India- 1No.

**ANNEXURTE-I (Items Description for one CAAQM Station)**

|  |  |  |
| --- | --- | --- |
| **Sr.No.** | **Item/Analyzer Name** | **Total Quantity** |
| 1. | Monitoring Station foundations. | Actual |
| 2. | Air Conditioner, Split Type, Wall mounted/ roof mounted along with voltage stabilizer (2 X 2 ton, 1 X 1 Ton) at the CAAQM Station | Three |
| 3. | On line UPS (1 X 10 KVA, 1 hr. back up and 1 X 5 KVA, 2 hr. back up) at the CAAQM Station | Two |
| 4. | Sampling System having 10 port manifold | One |
| 5. | 19” Rack cabinet to accommodate all analyzers & systems | Three |
| 6. | Continuous Ambient Oxides of Nitrogen (NO/NO2 / NOX) Analyzer | One |
| 7. | Continuous Ambient Ammonia (NH3) Analyzer | One |
| 8 | Continuous Ambient Sulphur Dioxide (SO2) Analyzer | One |
| 9. | Continuous Ambient Ozone (O3) Analyzer | One |
| 10. | Continuous Ambient Carbon Monoxide (CO) Analyzer | One |
| 11. | Continuous BTEX Monitor/ Analyzer | One |
| 12. | Multi calibration System for Gas calibration and Meteorological, Flow and Electronic Calibration | One set |
| 13. | Automatic PM2.5 Particulate Matter Monitor | One |
| 14. | Automatic PM10Particulate Matter Monitor | One |
| 15. | Meteorological Sensors for Wind Direction, Wind Speed, Ambient Temperature, Rainfall, Relative Humidity, Solar Radiation and Telescoping Crank- up Meteorological Tower | One set |
| 16. | **IT PERIPHERLS:** | |
| (a) | Data Acquisition System (DAS) : One for each CAAQM Station | One |
| (b) | Computer System for DAS: One for each CAAQM Station | One |
| (c) | Laser Printer ColourMFP : One for each CAAQM Station | One |
| (d) | Server Rack : One for PPCB | One |
| (e) | Rack Server : One for PPCB | One |
| (f) | Access Point : One for PPCB | One |
| (g) | UTM : One for PPCB | One |
| (h) | 24 Ports CISCO Switch : One for PPCB | One |
| (i) | Central Management Software with License w.r.t. Data Acquisition : One for PPCB | One |
| (j) | Remote Calibration & Validation Software: One for PPCB | One |
| (k) | Remote Connectivity Tool/ Software : One for PPCB | One |
| 17. | Data display Board Transmission Device | Two |
| 18. | Day & Night Visible Data Display Board (Near to the station) | Two |
| 19. | Continuous Automatic Monitoring Stations with Sampling line, Internal fitting, Instruments racks, Electrical fittings and Gas line fittings, Tools (electrical and mechanical), Data display system, Recommended spares in a Housing Container | One set |
| 20. | Lease Line for Internet and Broadband (for station) and Data Card as mode communication system(for display Board) | One set |
| 21. | RCC foundation, pillars misc. works including caging, civil & electrical work (for CAAQM Stations as well as Data Display Boards) | Actual |

**VOLUME 1**

**SECTION I (ITB)**

**INSTRUCTIONS TO BIDDERS**

**CONTENTS**

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2. Introduction …………………………………………………………….
3. Bidding Documents …………………………………………………...
4. Preparation and Submission of Bid ………………………………...
5. Preparation of Technical Bid …………………………....................
6. Preparation of Financial Bid …………………………………………
7. Submission of Bid ……………………………………………………….
8. Opening and Evaluation of Technical Bid ………………………..
9. Notification of Successful Technical Bid ……………....................
10. Opening of Financial Bid ………………………………………………
11. Examination of Financial Bid ………………………………………….
12. Evaluation and Comparison of Financial Bid ………………………
13. Award of Contract ………………………………………………………
14. Performance Security …………………………………………………..
15. Expense of Bid ……………………………………………………………
16. Responsibility for information supplied ………………………………

Important: Bidders are expected to examine the Bidding Documents carefully and are deemed to have received and read all documents. It shall be the responsibility of the Bidder to request for copies of missing documents, if any. Failures to do so will be at the Bidder’s risk.

**INSTRUCTION TO BIDDERS**

**1.0** **DEFINITIONS**

The terms used in this bidding document shall have the meaning defined hereunder:

* 1. “The Project” or “The Works” means supply, installation & Commissioning of equipment’s for 3 nos. of Continuous Ambient Air Quality Monitoring Stations (CAAQMS) and their Operation & Maintenance in the pre-defined cities & locations.

1.2 “The Board” means the **Punjab Pollution Control Board,** having its office at Vatavaran Bhawan, Nabha Road, Patiala, Punjab, India and shall include any person or persons authorized by the Board. The Board is also executing agency of the Project. “The **Owner” means the Punjab Pollution Control Board.**

1.3 “The Bid” means the offer or proposal of the Bidder to be submitted for the works in accordance with the stipulations set forth in this Bidding Documents.

1.4 “The Technical Bid” means the Technical part of the Bid.

1.5 “The Financial Bid” means the financial part of the Bid.

1.6 “The Bidder” means either the manufacturer of the Equipment or his authorized Representative, who submits the Bid for the Works.

1.7 “The Authorized representative” means the bidder who has enclosed the manufacturer’s authorization as per the format “Form of letter of authority” provided as Attachment 3 of Section III.

1.8 “The Contractor” or “The Contractor” means the Bidder, whose Bid for the Works has been accepted by the Board and includes his personal representatives, successors and authorized assignees.

1.9 “The Manufacturer” means Original Equipment Manufacturer the firms, which produces the equipment to be furnished by the Contractor under the Contract with the Board.

1.10 “The Bidding Documents” mean all the documents in Volume I and II in the bidding documents annexed thereto.

1.11 “The Contract” means the written agreement to be concluded between the Board and the Contractor and includes terms and conditions stipulated in the Bidding Documents and any other descriptions annexed thereto which form an integral part of the agreement to be provided by the Board.

1.12 “The Equipment” means all kind of materials, machinery, components, apparatus, articles and instruments for the Project to be provided by the Contractor to the Board under the Contract.

1.13 “The Specifications” means the specifications of the Works to be performed by the Contractor in conformity with those specified in the Technical Specifications and all other related documents in the Bidding Documents and modifications thereof or additions thereto as may from time to time be made and approved in writing by the Board in case prior to the Contract and agreed upon by both the Board and the Contractor after the Contract.

1.14 “S/W” means the Scope of Works as defined in Section II of this Volume. O&M means Operation and Maintenance

1.15 “The Sites” means the site for installation of CAAQMS in the defined cities / locations.

1.16 “The Contract Price” means the price payable to the contractor under the contract for full and satisfactory compliance/ performance of its contractual obligations.

**2.0** **INTRODUCTION**

2.1 The **Punjab Pollution Control Board** intends to invite bids from eligible bidders for supply, installation & commissioning of equipment’s for 04 No. Continuous Ambient Air Quality Monitoring Stations (CAAQMS) and their operation & Maintenance in specified cities / locations.

2.2 **Scope of Works**

The description of Scope of Works is set forth in Section II of this Volume 1.

2.3 **Size of Bid**

The whole bid is for single composite package as detailed at Section – II of this Volume 1 i.e. scope of work.

2.4 **Eligible Equipment and conformity to the bidding documents**

1. Being Global Tender, bidders from all countries are the eligible source countries for goods and services to be supplied under this contract.
2. For the purpose of this clause “origin” means the place where the equipment or component parts thereof are manufactured/ produced. Equipment is produced when, through manufacturing, processing or substantial and major assembling of components.
3. The Bidder shall furnish the Certificate of Country of Origin (duly authenticated by competent authority of that country) for each Equipment (as per Attachment 4 to Section III in these instructions), as the documentary evidence of the eligibility of the Equipment.
4. The origin of equipment may be distinct from the nationality of the bidder(s).
5. Conformity of the Bidding documents may be in the form of literature, drawings, and data, and the Bidder shall also furnish:
6. Detailed description of equipment, essential technical and performance characteristics.
7. A list giving full particulars, including available sources of all spares (whether mandatory or recommended) and their prices, special tools etc., necessary for proper and continued functioning / maintenance of the equipment on long term basis.
8. An inventory of the spare parts for each equipment available with the O&M Partner, authorized channel partner, Indian subsidiary in India mentioning the ones not available in India and need to be imported in case necessary after the expiry of O&M period.
9. A clause-by-clause commentary of the Board’s Technical

Specifications demonstrating the equipment’s substantial responsiveness of these specifications or a statement of deviations of exceptions to the provisions of Technical Specifications.

The above stated requirements are a minimum and the Board reserves the right to request any additional information concerning the Bid Proposal in response to this Invitation of Bids.

2.5 **Qualifying Requirements of Bidders**

This invitation for the Bid is open to any bidder who is a reputed manufacturer or authorized representative (**O&M Partner, authorized channel partner or Indian subsidiary)** of the manufacturer, who on its own or along with his associate as O&M partner meets the Qualifying Requirements stipulated hereunder for participation in the tender. The bidder shall furnish satisfactory evidence to establish that bidder meets the following qualifying requirements.

2.5.1 The bidder should be a manufacture or authorized representative **(O&M Partner, authorised channel partner or Indian subsidiary)** as listed in the scope of work and must have manufactured, supplied, tested and commissioned minimum six (6) nos. similar air monitoring stations having **at least four basic** Parameters PM 2.5, PM 10, SO2, NOx either container based or otherwise in the last three years which should be in satisfactory operation. The Principal Firm (manufacturer firm) should have minimum three years’ experience of supply, installation and commissioning of CAAQMS and his representative firm **(O&M Partner, authorised channel partner or Indian subsidiary)** should have minimum **one years’** experience of operation, maintenance, and report preparation etc. of CAAQMS.

2.5.2 For all the items not manufactured by the Bidder i.e. Analyzers, Monitors, Calibrators and Sensors, the bidders should be authorized by the manufacturers for these items as per the format “Form of letter of authorities” provided as Attachment 3 of Section III.

2.5.3 Bidder or their authorized representative should have A MINIMUM TURNOVER OF at least Rs.300 LACS (30% OF THE ESTIMATED COST OF THE TENDER OVEREACH OF THE LAST 03 YEARS to execute the contract. (Attach Last three years balance sheets)

2.5.4 Bids of bidders quoting as authorized representative of **a manufacturer, who meets the above requirements** in full, can also be considered, provided:

1. the manufacturer furnishes a legally enforceable authorization certificate in the prescribed form at Attachment-3 Section-III, assuming full guarantee and O&M obligations as per GCC and SCC, for the goods offered; and
2. **The bidder, and its authorized representative should have supplied, tested and commissioned minimum six (6) nos. similar air monitoring stations having at least four (4) basic parameters PM 2.5, PM 10, SO2, NOx stations either container based or otherwise in last THREE years which should be in satisfactory operation with no adverse report for last one year as on date of bid opening.**
3. **In this tender, either the Indian subsidiary/channel partner on behalf of the Principal/OEM or Principal/OEM itself can bid but both cannot bid simultaneously for the same item/product in the same tender.**
4. **If a subsidiary/ channel partner submits the bid on behalf of the Principal/OEM, the same agent shall not submit a bid on behalf of another Principal/OEM in the same tender for the same item/product.**

2.5.5 **The bidder should furnish information on all past supplied systems and their satisfactory performance as required for both Para(s) 2.5.1 and 2.5.4 (ii) above, in “Performance Statement” as per Attachment No. 8B & 8C respectively of Section III and minimum two (2) nos. documentary evidences (client certificates and/or recent commissioning reports duly signed by the customer which can be cross-verified from the customer in favor of the bidder or manufacturer of equipment) in support of the satisfactory operation of similar continuous air quality monitoring stations having at least four basic Parameters PM 2.5, PM 10, SO2, NOx which is in use for last two(2) years in case bidder is manufacturer or bidder is authorized representative/ subsidiary/agent/ channel partner.**

2.5.6 The bidder or their associates with an O&M Partner, authorized channel partner, Indian subsidiary in India, (any authorized agency in India) should have adequate no. of well-trained O&M personnel on its regular rolls and with experience not less than as per following details to establish this bidder should enclose/submit the curriculum vitae, appointment letter and slip of PF contribution of persons with required experience.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Sl. | Responsibility | No. of | Minimum Qualification | Experience |
| No. |  | Persons |  |  |
| 1. | Project Manager | 1 | Graduate Egg./ M.Sc. | 10 years |
| 2. | Technician | 3 | Diploma in | 3 years |
|  |  |  | Electronics/C&I/ |  |
|  |  |  | Electrical |  |
| 3 | Data Processor | 2 | Science Graduate | 2 Years |
| 4 | Operator | 3 (1 for | Diploma (ITI) certified | 2 years |
|  |  | each city) |  |  |

2.5.7 The Bidder or its O&M Partner, agent, authorized channel partner, Indian subsidiary shall furnish an undertaking regarding carrying out satisfactory O&M of CAAQMS covered in this document as per terms & conditions of the document on behalf of the bidder. This information is to be provided as per Attachment 5 & 9 of Section III.

2.5.8 The bidder firm (representative firm or **agent or Indian subsidiary/ channel partner**) and their Principal Firm (Manufacturer firm) have to give undertaking that they will continue the formal collaboration till the entire duration of O&M contract. The spares/consumables will be supplied by the Principal Firm to authorized representative firms/ subsidiary/

channel partner till entire duration of O&M contract of CAAQMS.

2.6 **Bidding Procedure**

1. The Bidding will be in two parts, **Part-1: Technical Offer** and **Part-2: Financial Bid** trough **e-tender system**.
2. Both parts of the bids shall be submitted online simultaneously **through e-tender** system by the designated date specified in Tender Notice above. Technical offer for Supply, Installation, Commissioning and O&M of CAAQM Stations, as mentioned above, will be opened and evaluated first. Those who technically qualified alone will be considered for opening of financial bid and status notification will be uploaded through e-tender system. The comprehensive Financial Bids of tender documents based on the status will be opened. The date to participate in opening of the financial bid will be informed through e-tender system.

|  |  |
| --- | --- |
| **S.No.** | **Documents to be uploaded by the Bidder** |
| 1. | Scanned copy of Bid Document Fees |
| 2. | Scanned copy of Bid Security |
| 3. | The Power of Attorney authorizing the signatory of the Bid. |
| 4. | Financial Capability of Bidder (for a period of last three years) |
| 5. | Performance Statement for Manufacturer (for a period of last five years) |
| 6. | Performance Statement for Authorized Representative of the Manufacturer (for a period of last five years). |
| 7. | Certificate of letter of Authority from Manufacturers of all the Equipment |
| 8. | Certificate of supply of Spares and Consumables by Manufacturers up to 10 years. |
| 9. | Certificate from Manufacturer stating the country of origin of each Equipment. |
| 10. | List of Equipment offered. |
| 11. | List of Manufacturers of the Equipment offered |
| 12. | Financial Bid i.e. CAAQM Station cost and O&M Cost in the prescribed template. |
| 13. | Deviation Schedule |
| 14. | Technical Data Sheets of all the Equipment in the Package |

1. The bidder must quote for complete scope of work in package. In case the bidder does not quote for complete scope of work,

The bid shall be rejected at Technical evaluation stage.

1. The bidder shall bear all costs associated with the preparation,

& delivery of its bid .and the purchaser will in no case be responsible or liable for those costs.

**3.0** **BIDDING DOCUMENTS**

3.1 **Issue of Documents**

The complete set of bidding documents can be downloaded from the website of Punjab Government www.eproc.punjab.gov.in. The bid shall be accompanied along with a demand draft of Rupees 5000/- (Rupees Five Thousand only) in favour of Member Secretary, Punjab Pollution Control Board, Patiala as cost of tender document.

**Bidding Documents are not transferable.**

3.2 **Confidentiality of Documents**

All recipients of the Bidding Documents, regardless of whether the Bid is submitted or not, shall treat the details of the documents as private and confidential.

3.3 **Check of the Bidding Documents**

Upon receipt of the Bidding Documents, the Bidder shall check the number of pages and drawings and notify the Board of any missing or duplicate pages and drawings or of any figures or words, which may be indistinct or ambiguous.

No claim will be admitted as result of the Bidder’s failure to comply with the foregoing. The address for the contact is specified in Sub-clause 3.5 of this Instruction.

3.4 **Contents of Bidding Documents**

1. The Bidding Documents include: -

**Volume I**

Invitation for Bids

|  |  |
| --- | --- |
| SECTION I | INSTRUCTION TO BIDDERS |
| SECTION II | SCOPE OF WORK(S) |
| SECTION III | FORM FOR TECHNICAL BID |
| SECTION IV | FORM FOR FINANCIAL BID |
| SECTION V | GENERAL CONDITIONS OF CONTRACT |
| SECTION VI | SPECIAL CONDITIONS OF CONTRACT |

**Volume II**

**Technical Specifications**

1. Bidders must acquaint themselves with all the Bidding Documents embodied in Volume I and Volume II. In order to familiarize with the Works, the Bidders should ascertain all particulars regarding the location and site conditions at their own expenses. No plea attributed to lack of information or insufficient information will be entertained at any time.

The Board shall reserve the right and privilege to settle the affairs in case any doubt may occur concerning the Bidding Documents.

3.5 **Clarification of Bidding Documents**

If a prospective Bidder has any doubt as to the meaning of any part of the Bidding Documents, he may notify the Board for supplementary information and explanation in writing in compliance with Form of Questionnaire of Attachment 1 in Section III of this Volume 1 at least seven (7) days before the closing date of the bid at the following address.

**The Member Secretary,**

**Punjab Pollution Control Board,**

**Vatavaran Bhawan,**

**Nabha Road, Patiala,**

**(Punjab)**

3.6 **Amendment of Bidding Documents**

1. At any time prior to the deadline for submission of the Bid, the Board, for any reason, whether at its own initiative or in response to a clarification requested by a prospective Bidder, may modify the Bidding Documents by amendment.

For amendment in bidding documents or extension of bid submission date, if any, bidders are requested to visit website/ portal www.eproc.punjab.gov.in before bid submission closing date.

**Board will not publish further any notice in newspapers for such amendment/extension.**

1. The Board will not be responsible or take any liability arising out of non-receipt of the same in time or otherwise.
2. In order to allow prospective Bidders reasonable time in which to take amendment into account in preparing their Bids, the Board at its discretion may extend the deadline for submission of the Bid.

**4.0** **PREPARATION AND SUBMISSION OF BID**

Bid submission to be done through e-tendering procedure(s).

4.1 **Language**

The Bid to be prepared by the Bidders, as well as all correspondence and documents relating to the Bid exchanged by the Bidder and the Board or the Consultant shall be written in English. Failure to comply with this may disqualify a bid.

4.2 **One Bid per Bidder**

Each Bidder shall submit one Bid only.

4.3 **Local Representation**

1. Foreign Bidders, if they have in India a local Indian representative shall indicate in their bid (Bid Proposal Sheets), the name of such person or firm and also shall furnish the following information in their bid:
   1. The precise relationship between the Bidder and his Indian Agent.
   2. The mutual interest which the Bidder and the Indian Agent have in business of each other.
   3. Any payment which the Indian Agent receives in India or abroad from the Bidder whether as a commission for the Contract or as a general retainer fee.
   4. Indian Agent’s Income Tax Permanent Account Number.
   5. Bidder’s Income Tax Permanent Account Number.
   6. All services to be rendered by the Indian Agent whether of general nature or in relation to the particular contract.
   7. All above statements have to be substantiated by authenticated documents from competent authority.
2. Agent’s commission, if any, (to be included in the Bid Price) shall

be indicated separately but as a part of Bid Price and the same will be payable only in equivalent Indian Rupees. Indian agent’s commission will not be subject to any escalation whatsoever and will be payable at the time of final payment after commissioning & training. To effect such payments, the Indian Agent’s commission will be calculated on the basis of exchange rates (State Bank of India T T Exchange buying rate) as on the date of notice of the award to the successful Bidder.

1. The bidder /Contractor shall not pay Indian Agent’s Commission, unless declared in the bid.

4.4 **Bid Security / Earnest Money**

1. Pursuant to Clause 5.1 in this instruction, the Bidder shall furnish, as part of its Bid, his Bid Security amount of Rs. 15.00 lac in **Indian Rupees**(Rs. Fifteen lacs. only) @ Rupees 5.0 lacs **per CAAQM Station** in the form of Bank draft, in favour of **Member Secretary, Punjab Pollution Control Board** payable at Patiala or Bank Guarantee as per Attachment 10.
2. The Bid securities in the form of Bank Draft/ Bank Guarantee shall be valid up to the expiry of warranty period from the date of opening of Technical Bids for successful bidder. This Bid Security shall provide security for the due performance by the Bidder of the obligations and undertakings in the Bid on his part contained.
   1. The Bid Security shall be submitted through a crossed bank draft in favour of ‘Member Secretary’ **Punjab Pollution Control Board** payable at Patiala or in the form of Bank Guarantee from a Scheduled Commercial Bank as listed at Attachment 14 in Section III of this Volume 1. The Bank Guarantee should be as per Attachment 10.
   2. Any Bid not secured by the Bid Security will be rejected by the Board as non-responsive pursuant to Sub-clause 8.4. Unsuccessful

Bidder’s Bid Security will be discharged or returned as promptly as possible, but not later than thirty (30) days from the expiration of the period of the Bid validity specified in Sub-clause 4.5 hereunder. The successful Bidder’s Bid Security will be discharged upon the Bidders signing the Contract pursuant to Sub-clause 13.3 in this instruction and furnishing the Performance Security pursuant to Clause 14 in this instruction.

1. The Bid Security may be forfeited:
   * 1. If a Bidder withdraws its Bid during the period of Bid validity specified in Sub-clause 4.5 hereunder;
     2. If a bidder refuses to accept the arithmetical corrections made according to ITB (Instructions to the Bidder) Clause No. 11;
   1. In case of a successful Bidder, if the Bidder fails to sign the Contract in accordance with Sub-clause 13.3 in this Instructions and furnish Performance Security in accordance with Clause 14 in this Instructions;
   2. In case bidder refuses to withdraw, without any cost to the Owner, those deviations, which the bidder did not state in the Deviation Schedules.
2. **No interest will be payable by the Board on the above Bid Security.**

4.5 **Validity of Bid**

The bid shall remain valid and binding on the Bidder for one hundred eighty (180) days from the final time and date of submission of the Bid. Bid validity for a shorter period shall be rejected by the Board as non-responsive.

In exceptional circumstances, the Board may in writing or by facsimile, solicit the Bidder’s consent to an extension of the period of the Bid validity. If the Bidder agrees to the request for extension, the Bid Security shall also be extended for an equivalent period of time.

Any Bidder may refuse to extend the validity of his Bid without forfeiting his Bid Security, but the Bid will not be considered.

Bidders granting the requests for extension of the Bid validity will not be required or permitted to modify their Bids.

4.6 **Modification and Withdrawal of Bid**

* + - * For amendment in bidding documents or extension of bid submission date, if any, bidders are requested to visit website/portal www.eproc.punjab.gov.in before bid submission closing date.
      * **Board will not publish further any notice in newspapers for such amendment/extension.**
* The Bidder may modify or withdraw its Bid after the Bid’s submission; provided that written notice of the modification or withdrawal is received by the Board prior to the deadline prescribed for submission of Bids.
* No Bid shall be allowed to be modified subsequent to the deadline for submission of Bids.
* No bid shall be allowed to be withdrawn in the interval between the deadline for submission of Bids and the expiration of the period of bid validity specified in the clause 4.5 above. Withdrawal during this period may result in the forfeiture of the bid security pursuant to clause 4.4 (5).

4.7 **Rejection of Bid**

Failure by the Bidder to comply with the provisions of these Instructions to Bid or any part of the Bidding Documents may result in rejection of the Bid and forfeiture of the Bidders Security.

The Board reserves the right to accept or reject any or all Bids or to amend the Bidding process at any time prior to award of the Contract without thereby incurring any liability to the affected Bidder or Bidders or any obligation to inform the affected Bidder or Bidders of the grounds for the Board’s action.

4.8 **Contacting the Board**

Except for responses to request for clarification of the Bid by the Board, the Bidder shall not contact the Board for any matter related to this Bid from the time of submission of the Bid until the Contract is awarded.

Any effort by the Bidder to influence the Board in his decision in respect of evaluation of the Bid or award of the Contract shall result in the rejection of the Bid and forfeiture of the Bid security.

**5.0** **PREPARATION OF TECHNICAL BID**

5.1 **Contents of Envelop “A”, Bid Security**

The Bidder shall enclose his Bid Security in the sealed envelope marked “A-Bid Security” and “ORIGINAL” pursuant to sub-clause 4.4 in this Instructions. The Bidder shall drop this envelop at the Board’s office in Tender Box before the closing date of the bid.

5.2 **Qualification Documents**

**Contents of Envelop “B”**

Following documents shall be submitted through e-portal:

1. Authorization letter authorizing the signatory of the Bid to commit the Bidder.
2. Attachments in support of meeting qualifying requirements as per Clause No. 2.5 for the quoted packages (Attachments 8A, 8B& 9 in Section-III of this Volume 1).
3. Copy of certificate of local branch, sales, residential and representative office(s) of the Bidder in India as per certificate from pursuant to Attachment 2 in Section III of this Volume 1.
4. Certificate of letter of authority from manufacturers of all the Equipment (Attachment 3 in Section III of this Volume 1).
5. Certificate from manufacturer stating the country of origin of each Equipment duly authenticated by competent authority of that country (Attachment 4 in Section III of this Volume 1).
6. Certificate of carrying out O&M by O&M Partner, authorized channel partner, Indian subsidiary (Attachment 5 in Section III of this Volume 1)
7. List of Equipment offered (Attachment 6 in Section III of this Volume 1).
8. List of Manufacturers of the equipment offered (Attachment 7 in Section III of this Volume I).
9. Pre-requisite for installation of equipment offered (Attachment 11 in Section III of this Volume 1).
10. The Authorized Indian Agent/Representative Indian supplier should have minimum 02 years continuous agency partnership/joint venture/preparation or collaboration with their Principal foreign supplier. The documentary proof of such agency ship/authorization/MOU should be submitted along with the technical part. The bid of the firm does not contain the proof of such nomination/authorization as Indian agent will be rejected.

5.3 **Contents of Envelop “C”; Technical bid including Technical**

**Specifications and Catalogues**

The following documents shall be uploaded by the bidder and the files clearly marked about the contents.

1. Attachments 1, 2, 3, 3(A), 3(B) & 3(C) of Financial Bid, in Section IV of this Volume 1.
2. Deviation Schedule (Attachment 12 of Technical Bid, Section-III of this Volume 1).
3. Technical Data sheets of the Equipment in the package (Annexure-I of technical specifications) offered:
   1. In case that there is no deviation from the Board’s requirement, the Bidder must write down “complied” in the column for “Bidder’s Response” and it is not necessary to rewrite the same words of the requirements.
   2. In case of any deviation from the requirement the Bidder must write down the “not complied” & the deviation specified in blanks under “Bidder’s Response”.
   3. The Bidder shall clearly indicate contents and quantities of standard accessories for the proposed Equipment in the blanks.
   4. The Bidder shall understand that decision of the Board will be binding in regards of anything not specifically mentioned in the technical specification.
   5. The Bidder shall offer only one manufacturer, one brand and one model.
4. Complete set of original catalogues and/or photographs and/or pamphlets illustrating principal feature.

**6.0** **PREPARATION OF FINANCIAL BID**

6.1 **Preparation of Financial Bid**

The Bidder shall enter a price or rate against all the items specified in the following Sub-clauses from 6.2 to 6.4 and Attachments in Section IV.

The Bid Price to be quoted by the Bidder shall be prepared according to the Attachment in Section Iv of this Volume 1 without any alteration or change.

The Bid Price shall be quoted for performing the Contract strictly in accordance with the Technical Specifications.

The Bid Price quoted by the Bidder shall be firm during the Bidder’s performance of the Contract and not subject to variation on any account.

**A Bid Price submitted with an adjustable price will be treated as non-responsive and will be rejected.**

6.2 **Summary of Bid Price**

Summary of Bid Price shall be prepared and submitted in accordance with the Attachment 2 in Section IV of this Volume 1.

The Bidder shall indicate prices for the package in the following manner:

1. For the Goods Supplied from Foreign Origin
   1. CIF Price at Port of dis-embarkment.
      1. FOB Price of the Package (for the equipment to be supplied of Foreign Origin)
      2. Freight for complete Package
      3. Insurance covering all risks up to Port of dis-embarkment
   2. Local Costs
      1. Port handling and clearance charges.
      2. Transportation cost from the port to Port of dis-embarkment to Sites.
      3. Insurance covering all risks from Port of dis-embarkment up to handing over.
      4. Installation and commissioning.
2. For the Goods Supplied from India
   1. The price of the Equipment quoted ex-works, ex-factory, ex-warehouse, ex-showroom, or off-the-shelf including all customs duties and sales and other taxes already paid or payable on the components and raw material used in the manufacture or assembly of the Equipment quoted ex-works or ex-factory.
   2. Price for handing and inland transportation, insurance up to handing over the equipment at Site and other local costs up to delivery of the Equipment to each Site.
   3. Installation and commissioning
   4. Price of other incidental cost, if any. Then the Bidder shall specify the same.
3. Price of other incidental cost such as Indian Agent’s Commission, if any. The Bidder shall specify the same.
4. Cost of O&M of CAAQMS for Five (5) years including insurance.
5. Training:

The cost towards training as indicated in clause 10 of S/W is imbibed in the system cost.

The entire cost of training including travelling, boarding &lodging will be borne by bidder.

**Note:**

1. Quoted cost O&M of a CAAQMS for each year should be at least 10% (ceiling price) against the cost of supply & installation of the CAAQMS and it should be in ascending order during the entire period of contract i.e. 05 years with the objective to maintain the quality of operation.
2. The above ceiling O&M cost also includes incidental charges (Security, Data Connectivity, Stations Supervisor, Insurance) and services.
3. Health of the Stations should be sound for the entire period (05 years) so that the contract can be further renewed on mutual agreement.
4. All the statutory taxes & duties as applicable in the State of India i.e. Duties and Taxes, as applicable will be paid as actual by the Vendor for simplification. However, these taxes will be reimbursed by the Board on production/submission of original bills.

6.4 **Bid Price Breakup**

The Bidder shall prepare and submit the Bid Price Breakdown (CIF Price or Ex-works price as applicable) for each item of the quoted package(s) in accordance with Attachment 3 in Section IV of this Volume 1.

The Bidder shall prepare and submit break up of Operation & Maintenance of CAAQMS as per Attachment 3A in Section-IV of this Volume 1.

6.5 **Currencies of Bid:**

The unit rates and the prices shall be quoted by the bidder separately in any one of International trading currencies as mentioned in Attachment 3 in Section IV of this Volume 1of Bidding Document for the equipment, which the bidder proposes to supply.

**7.0** **COMPLETION AND SUBMISSION OF BID**

7.1 **Completion of Bids**

7.1.1 **Technical Bid**

1. The Technical Bid shall not contain any information regarding Bid Prices and other financial matters except the Bid Security pursuant to Clause 4.4 in this instruction.

7.1.2 **Financial Bid**

The Bidder shall submit the price bid in the prescribed Price Bid Template along with the Tender Document on the portal and upload after quoting the price with the bid.

The Bid shall be signed by the Bidder himself or for and on behalf of the Bidder by an officer or officers with authorization letter as the case may be. A notarized copy of such Power of Attorney shall be submitted with the Bid pursuant to Clause 5 in this instruction.

7.2 **Submission of Bid**

All the documents for the Techno-commercial Bid (technical) and Financial Bid (financial) shall be uploaded on the Punjab Govt. website/portal www.eproc.punjab.gov.in. Within the specified time and date.

Bids in the form of Telex, facsimile, telegraph or email, will not be accepted. Only the complete documents specified above, uploaded on the specified tender site and time will be considered.

**8.0** **OPENING AND EVALUATION OF TECHNICAL BID’**

8.1 **Opening of Technical Bid**

Only the Technical Bid will be opened in public on the date mentioned in the Tender Document above at the Board’s place i.e. in the committee room of the Board. Bidders or their representatives may attend the opening.

During opening of the Technical Bid, the Bidder’s name, the presence or absence of necessary envelopes, withdrawals of the Bid and such other details as the Board at their discretion may consider appropriate will be announced and recorded.

**All the Bidders or their representatives present shall sign a format evidencing their attendance.**

8.2 **Confidentiality of the Process**

Information relating to the examination, clarification, evaluation and comparison of Bids and recommendations for the award of the contract shall not be disclosed to bidders or any other person not officially concerned with such process. Any effort by a bidder to influence the Board’s processing of Bids or award decisions may result in the rejection of the Bidder’s Bid. The request for clarification and response shall bein writing or by fax, but no change in the price or substance of the bid shall be sought, offered or permitted except as required to confirm the correction of arithmetic errors discovered by the Board in the evaluation of the bids in accordance with the clause 11.2 of these instructions.

8.3 **Clarification of Technical Bids**

To assist the Technical examination and evaluation of bids, the Board may, at its discretion ask the bidder for a clarification of its Technical bid**.** All responses to request for clarification shall be in writing, and **no change in the price bid shall be sought, offered or permitted after the tender closing date.**

8.4 **Preliminary Examination**

The Board will examine the Technical Bids to determine whether they are complete, whether the documents have been properly signed and whether the Technical Bids are generally in order. Any Technical Bid found to be non-responsive for any reason i.e. non-conformity of bid security, or not meeting the eligibility criteria and/ or qualifying requirements pursuance to clause 2.4 & 2.5 of Institutions to Bidders (ITB) etc. will be rejected by the Board. No further Technical evaluation shall be carried out for such bidders**.**

Prior to detailed evaluation of Technical bids, pursuant to clause 8.5, the Board will determine the substantial responsiveness of each Bid to the Bidding Documents including acceptable quality of goods offered pursuant to clause 2.4 & 2.5. A substantially responsive Bid is one, which conforms to all terms and conditions of the Bidding Documents without material deviations, objections, conditionality or reservations. A material deviation, objection, conditionality or reservation is one (i) that affects in any substantial way the scope, quality or performance of the contract; (ii) that limits in any substantial way, inconsistent with bidding documents, the Owner’s right or the successful Bidder’s obligations under the Contract; or (iii) whose rectification would unfairly affect the competitive position of other Bidders who are presenting substantially responsive bids.

No deviation, whatsoever, is permitted by the Owner to the provisions relating to the following clauses (important Conditions):

1. Bid security (ITB Clause 4.4)
2. Resolution of Disputes (G.C.C clause 36),
3. Applicable law (G.C.C clause 41),
4. Taxes & duties (G.C.C clause 37),
5. Performance security (ITB clause 14 & GCC clause 27),
6. Force Majeure (G.C.C Clause 34).

A bid with deviation to any of the above clauses (important Conditions) will be liable to be rejected.

The Owner’s determination of bid’s responsiveness is to be based on the contents of the bid itself without recourse to extrinsic evidence. If a bid is not substantially responsive, it will be rejected by the Owner, and may not subsequently be made responsive by the Bidder by correction of the non-conformity.

8.5 **Evaluation of Technical Bid**

1. The Board will determine the responsive Technical Bids for invitation of opening of Financial Bid if the Technical Bid meets satisfactorily technical specification and any other information, which they consider relevant to his offer.
2. If a Bidder is found not substantially responsive to the technical requirement, the Technical Bid will be rejected and the subsequent information as to opening of the Financial Bid will not be notified.
3. If the Technical clarifications are required by the Board to any part of the Technical Bids, the Bidders will be requested to clarify the same in writing by Board.

8.6 **Evaluation Criteria of Technical Bid**

The Bidder who fulfills the requirements specified under Qualification Requirement (**Clause 2.5**) will be short listed. Under the Qualification Requirement a minimum threshold limit has been set for each parameter like technical experience and financial strength. Bidders not meeting the minimum threshold limit in any of these parameters will not be short-listed.

**The detailed technical evaluation to be carried out shall be restricted to these short listed Bidders only.**

**9.0** **NOTIFICATION OF SUCCESSFUL TECHNICAL BID**

After completing the Technical evaluation of the Technical Bid first, the Board will notify in e-tender portal the **pre-qualified and technically responsive Bidders,** of the date and venue for the opening of the Financial Bid.

1. **OPENING OF FINANCIAL BID**

The Bidders to whom the opening time, date and venue for the Financial Bid are notified by the Board in e-tender portal will be invited to attend the Financial Bid opening. **The Bidder’s representatives present shall sign format evidencing their attendance.**

During opening of the Financial Bid, the Bidder’s name, quoted price of package and other details as the Board, as its discretion may consider appropriate will be announced and recorded.

1. **EXAMINATION OF FINANCIAL BID**

11.1 After opening of the Financial Bid, the Board will examine them to determine whether they are complete, signed, generally in order and substantially responsive to the Bidding Documents or not.

A Financial Bid determined as being not substantially responsive will be rejected.

The Board may waive any minor informality or non-conformity or irregularity in a Financial Bid which does not constitute a major deviation or reservation provided such waiver does not prejudice or affect the relative ranking of any Bidder.

If there is any discrepancy between words and figures, the amount in words will prevail.

The Financial Bid which is incomplete or conditional will be rejected.

The Financial Bid shall not be returned to the Bidder regardless of the result of the Bid.

**11.2 During examination of Financial Bid any arithmetical error(s) will be corrected as follows**:

* 1. If there is a discrepancy between the unit price and the total price per item that is obtained by multiplying the unit price and quantity, the unit price shall prevail and total price per item will be corrected. If there is a discrepancy between the Total Amount and the sum of the total price per item, the sum of the total price per item shall prevail and the Total Amount will be corrected accordingly.
  2. The amount stated in the Form of Bid shall be adjusted by the Board in accordance with the above procedure for the correction of errors and, shall be considered as binding upon the bidder. If the bidder does not accept the corrected amount of bid, its bid will be rejected, and the bid security will be forfeited in accordance with clause 4.4.5

1. **EVALUATION AND COMPARISON OF FINANCIAL BID**

12.1 **Evaluation Procedure**

The Board will evaluate the Bid previously determined to be technically responsive pursuant to clause 8.6. The Board reserves the right to reject any bid or bids received at its discretion without assigning any reason whatsoever.

12.2 The purchaser’s evaluation of a bid will take into account following factors:

1. **Total cost of supply, installation & commissioning at the identified city / location of the equipment as below:**
   1. The CIF port of entry price of the equipment to be offered from abroad including price of consumables & spare parts.
   2. The ex-factory/ ex-warehouse/ off-the shelf price of the equipment to be offered from within India (such price include all costs as well as duties and taxes paid or payable on components and raw material incorporated or to be incorporated in the equipment)
   3. Local costs i.e.
      1. Cost of port handling and custom clearance,
      2. Transportation cost from Port of dis-embarkment to Sites,
      3. Insurance from Port of dis-embarkment up to handing over and
      4. Installation and commissioning charges at site.
   4. Other incidental costs, if any (such as Indian agent’s commission)
2. **O&M cost (including insurance) for five years**

**NOTE:**

Taxes and duties shall not be considered for the purpose of evaluation.

12.3 The Board will evaluate and compare Bid for all the stations as a complete package, which covers all items as specified under clause; Schedule of Requirement in Scope of Work.

12.4 **The rate of exchange for evaluation**

To facilitate evaluation and comparison, the Owner will convert all Tender prices to Indian Rupees at the prevailing selling exchange rate as determined by the State Bank of India, on the date of opening of Financial Bids.

12.5 **Clarification on Financial Bid**

For the purpose of examination, evaluation and comparison of the Financial Bid, the Board may at his discretion request the Bidder in writing to clarify his Financial Bid, but no change in the Bid Price or substance of the Bid will be sought, offered or permitted.

12.6 **Cost Compensation for deviations**

Deviations specifically declared by the bidders in respective Deviation Schedule (Attachment 12 of Technical Bid, Section – IIIof this Volume 1) only will be taken into account for the purpose of evaluation.

In case of any of these deviations are not acceptable to the Owner, the Bid shall be rejected.

In case any of the deviations are acceptable to the Owner, the Owner will make its own assessment of the cost of these deviations and consider it for evaluation for the purpose of ensuring fair comparison of bids. Bidders may note that all deviations / variations and additional conditions etc. found elsewhere in the bid other than those stated in the Deviation Schedules, save those pertaining to any rebates, shall not be given effect to in evaluation and it will be assumed that the bidder complies to all the conditions of Bidding Documents. In case bidder refuses to withdraw, without any cost of the Owner, those deviations, which the bidder did not state in the Deviation Schedules, the bid shall be rejected and the bid security of the bidder may be forfeited.

**13.** **AWARD OF CONTRACT**

13.1 **Award of Contract to Successful Bidder**

The Board will award the Contract to successful Bidder:

1. Whose Bid will be determined to be substantially responsive to this Bidding document and who will be determined by the Board, to be qualified technically, financially and otherwise in respect of such other capabilities, as the Board may be deem necessary and appropriate to satisfactory performance of the Contract and
2. Whose Bid will be determined to be lowest evaluated, responsive Bid and is determined to be qualified to satisfactorily perform the contract.
3. The Board reserves the right to reject any bid or bids received at its discretion without assigning any reason whatsoever.

13.2 **Notification to Award**

Prior to the expiration of the Bid validity pursuant to sub-clause 4.5in this Instructions, the Board will notify the successful Bidder in writing by registered letter or by facsimile to confirm that its Bid has been accepted.

The notification of award will constitute the formation of the Contract.

Upon the successful Bidder’s furnishing of the Performance Security pursuant to Clause 14 the Board will promptly notify each unsuccessful Bidder and will discharge their Bid Security pursuant to Clause 4.4

13.3 **Signing of Contract**

Within Thirty (30) days of the receipt of notification of award from the Board, the successful Bidder shall sign within the stipulated period of Contract.

The Contract shall take the form of General and Special Conditions attached to Section V, VI of this Volume 1 and such modifications as may be necessary.

The Bidder shall prepare at his own cost one (1) original and three (3) bind copies of the Contract including the Contract Form attached to the Special Conditions of Contract (Attachment 2 of Section VI of this Volume 1) for distribution to the parties concerned.

1. **PERFORMANCE SECURITY**

Within thirty (30) days of notification of award from the Board, the successful Bidder shall furnish the Performance Security in the form of bank guarantee issued by a Scheduled Commercial Bank (As per list enclosed at Attachment – 15 in section III of this Volume 1) having license to do business in India in accordance with Attachment 2 ”Performance Security Form” provided in Special Conditions Contract for an amount equivalent to 10% (ten percent) of the Contract Price, for two years after successful commissioning of system.

Failure of the successful Bidder to comply with the requirement of Sub-clause 13.3 or Clause 14 in these instructions shall constitute sufficient grounds for the annulment of the award and forfeiture of the Bid Security in which event the Board may make the award to the second-high ranked Bidder or call for new Bids.

1. **EXPENSE OF BID**

Under no circumstances the Board will be liable to the Bidder for any expenses, losses or damages whatever incurred in the Bid including but not limited to expenses, losses or damages associated with preparation of the Bid, visits to the Sites and all matters in connection with the Contract negotiations and signing regardless of the conduct or outcome of the bidding process.

1. **RESPONSIBILITY FOR INFORMATION SUPPLIED**

Prior to the final time and date for submission of the Bids, no representation, communication, explanation or statement, verbal or written, made to the Bidder or anyone else by the Bidder or any of their employees or authorized representatives other than as may be set out in amendment issued in accordance with Sub-clause 3.6 in this Instructions shall bind the Bidder in the exercise of their powers and duties under the Contract.

The information given in the Bidding Documents is the best in the possession of the Board, but the Board does not hold himself responsible for its accuracy.

**VOLUME - I**

**SECTION II**

**SCOPE OF WORKS**

1. Details of Project Structure ……………………………………………
2. Scope of Services ……………………………………………………….
3. Minimum Specifications ……………………………………………….
4. Desired Output for CAAQMS Equipment …………………………….
5. Data Management and Quality checks ………………………….
6. Location …………………………………………………………………..
7. Supply of Equipment ……………………………………………………
8. Installation of Equipment ……………………………………………....
9. Inspection and Test ……………………………………………………..
10. Provision of Training ……………………………………………………..
11. Operation & Maintenance of CAAQMS ……………
12. Schedule …………………………………………………………………..

Attachment 1 Equipment List …………………………………………………..

Attachment 2 Protocol Manual Calibration ………………………………..

|  |  |
| --- | --- |
| Attachment 3 | Daily Reporting Format for Meteorological Parameters … |
| Attachment 4 | Monthly Reporting Format for Meteorological Parameters.. |
| Attachment 5 | Daily Reporting Format for Main Pollutants ……………… |

Attachment 6 Monthly Reporting Format for Main Pollutants ……………

**1.0** **DETAILS OF PROJECT STRUCTURE**

1. Successful Bidder would be awarded the project/work under a Supply and Service Agreement, which would entail:
2. Supply, installation and Commissioning of 04 Set of CAAQMS Equipment at the defined cities/ locations

|  |  |
| --- | --- |
| 2. Operation and Maintenance of the 04 CAAQMS for a period of |  |
| 5years from the date of its commissioning. The Operation and Maintenance Contract of the CAAQMS can be extended further for a period of up to 05 years. |  |

1. Daily reporting of data pertaining to Ambient Air Quality to PPCB/ CPCB. PPCB would make payment for CAAQMS as per schedule of requirement, for Supply, Installation and Commissioning of the system. PPCB would procure all the CAAQMS equipment on its name. PPCB will make regular payments for the O&M and supply of Data at the end of each Quarter. The bidders therefore need to quote two prices for;
   1. Supply Installation and Commissioning of the System and;
   2. Reporting of data to PPCB / CPCB. The price for the data supply would include the Operation and Maintenance, including incidental charges, electricity, manpower, security, etc.

PPCB would provide land for installation of CAAQMS free of cost, in the identified city/location to the Successful Bidder. Along with the land, PPCB would provide letter/ documents to facilitate telephone and electricity connections at the proposed location. Bidder would bear the initial installation cost for these facilities and the monthly recurring cost pertaining to their usage (monthly telephone and electricity bill) would also be borne by the Successful Bidder.

The requirement is of two Day light & Night visible data display boards per station, therefore total requirement of 16 display boards. The location or installation of display Board will be specified by PPCB. Day light & Night visible data display system is to be supplied, installed and maintained initially for five years, extendable further for a period of up to 05 years. PPCB would identify location(s) for installation of Day light & Night visible data display system(s). The successful bidder shall also set up Central Server Stations at the Punjab Pollution Control Board, Head Office, Patiala for data connectivity and management from all the CAAQM stations installed. The successful bidder shall also arrange lease line (main Medium of data connectivity) and also provide broadband/telephone/data card (as a backup connection) and electricity connections at the identified location and all the documents required for the

connection shall be provided by the Punjab Pollution Control Board. The Successful Bidder would bear the initial installation cost for these facilities and the monthly/recurring cost pertaining to their usage (monthly telephone and electricity bill) would also be borne by the Bidder. All other foundation, installation, connectivity requirement for Display System is to be arranged by the successful bidder and cost for same should be included in bid price. All the operation & maintenance expenses of CAAQMS shall be borne by the bidder except for the rent of location of CAAQMS (if required).

1. **SCHEDULE OF REQUIREMENTS**

The CAAQMS shall have the following schedule of requirement. The system should be completely functional. Any balance of material not specified but required for the purpose must be supplied by the bidder.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Schedule** | **Brief Description** |  |  | **Qty. in nos.** | |
| **No.** |  |  |  |  |  |
| 1. | Continuous Automatic Air Quality Monitoring | | | 1 unit each | |
|  | Analyzers for CO, SO2, NO-NO2-,,NOx,NH3, O3, and | | |  |  |
|  | Beta Gauge PM2.5 and PM10 Monitors | | |  |  |
| 2. | BTX Analyzer |  |  | 1 | Unit |
| 3. | Multi-calibration | systems for | gaseous monitors | 1 | Unit |
|  | comprising of gas supply / Permeation tubes/ generation and | | |  |  |
|  | automated calibration | |  |  |  |
| 4. | Meteorological | Instrumentation comprising Wind | | 1 | Set |
|  | Direction, Wind Speed, Ambient Temperature, | | |  |  |
|  | Relative Humidity, Solar Radiation and Rainfall | | |  |  |
|  | mounted on telescoping crank up meteorological | | |  |  |
|  | Mast |  |  |  |  |
| 5. | Computer system consisting of one PC along with | | | 1 | Lot |
|  | Laser Printer and DAS at the monitoring station | | |  |  |
|  | and one PC at central office with peripherals and | | |  |  |
|  | software for data acquisition / Data display Board | | |  |  |
|  | / transfer and system integration, telephone, | | |  |  |
|  | Modem |  |  |  |  |
| 6. | Modem |  |  | 2 Units | |
| 7. | Recommended spares and supplies | | | 1 Year | |
| 8. | Data Display System | |  | 2 | Unit |
| 9. | Housing/ Container for Continuous Automatic | | | 1 | Unit |
|  | Monitoring Stations with Sampling line, Internal | | |  |  |
|  | fitting, Instruments racks, Electrical and Gas line | | |  |  |
|  | fittings, Tools (electrical and | | mechanical), and |  |  |
|  | Recommended spares. | |  |  |  |
| 10. | UPS, 10 KVA (1hr. full load back-up) | | | 1 | Unit |
| 11. | UPS, 5 KVA (2hrs. full load back-up) | | | 1 | Unit |
| 12. | Split Air Conditioners (2 Ton capacity) | | | 2 | Units |
| 13 | Split Air Conditioners (1 Ton capacity) | | | |  |  | | --- | --- | | 1 | Unit |   1 | Unit |
| 14. | RCC foundation, pillars misc. works including civil & | | | 1 | Lot |
|  | Electrical |  |  |  |  |

**2.0** **SCOPE OF SERVICES**

The Scope of Works under the package shall include:

1. The supply includes 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 PPCB officials station wise.
2. Operation & Maintenance of Air Monitoring Stations for a period of five (5) years from the date of commissioning of the station on the O&M rates quoted by the successful bidder (year wise), which can be extended further for a period of up to Five (5) years at the mutually agreed rates and terms and conditions.
3. Data & Report of data pertaining to CAAQMS to PPCB/CPCB.
4. On line transfer of data to PPCB & CPCB.

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

**3.0** **MINIMUM TECHNICAL SPECIFICATIONS**

The minimum technical specification requirements for the CAAQMS to be installed are given in the Technical Specifications of bid 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 in Volume – II (Technical Specifications) of bid documents are descriptive and Selection Committee can consider technical proposals having similar specifications.

**4.0** **DESIRED OUTPUT FOR CAAQMS EQUIPMENT**

The desired output requirements from the CAAQMS equipment to be installed at are given in Attachment 2 to 6 in section-II of this Volume 1 i.e. Scope of work of bid document.

**5.0** **DATA MANAGEMENT AND QUALITY CHECKS**

Data shall be collected and validated according to US EPA standards/National Ambient Air Quality Standards using the methodologies included in 40 Code of Federal Regulations. All analyzers shall have current US EPA reference or equivalent method designation and shall be of the latest design, a certificate/declaration in this regard need to be submitted.

Successful bidder shall submit a Standard Operating Procedure for the continuous ambient air quality monitoring station to the Board before award of contract. The 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 reporting as per attachment X1 to X4 in section VI of this Volume 1

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.

Inventory of spares and consumables to be maintained and recorded from time to time and a buffer stock for any eventuality to be maintained.

Upon 3 days’ notice from the Board once per year, Successful Bidder shall agree to submit to an audit of calibrations, conducted, using pre-approved US EPA methodologies, by a third party. Third party audit will be arranged by the Owner (PPCB) by the agency decided by them, at their cost and bidder shall provide all necessary facilities to carryout required audit. The results of these audits shall be made immediately available to both the Seller and Buyer.

Operator shall participate in Proficiency Testing Exercise organized by reputed organization.

**GENERAL GUIDELINES**

**Working Hours:** The site for CAAQMS operation should be attended daily by the employees of the Successful Bidder at least once in 24 hours. In addition, the Successful Bidder would arrange for 24 hours' security at all the CAAQMS site(s) through appointment from security agency (providing at least one security guard in each shift). Bidder should quote separately for manpower and security for each station. PPCB will assess the requirement of security at each station before awarding the job.

**Insurance:** Successful Bidder would bear the cost of insuring the equipment (Comprehensive) and facilities against any theft, fire and other applicable provisions during the entire tenure of the contract period including O&M for an appropriate amount with a copy marked to PPCB.

**Station plate form, pillars Electricity & telephone / modem arrangement:**

The successful bidder shall construct station platform pillars etc. as required and shall also arrange electric and telephone connection, modemed; as required for the smooth Operation of the CAAQMS. The necessary documentation as regards to the permissions shall be made available by PPCB.

**6.0** **LOCATION**

The locations of the Air Monitoring Station shall be decided by the Board. City wise details are as under:

**1. Dera Baba Nanak-01 CAAQMS,** **2. Dera Bassi-01 CAAQMS.**

**3. Naya Nangal-01 CAAQMS 4. Barnala- 01 CAAQMS**

The no. of CAAQMS/Nos. and name of cities may change as required.

**7.0 SUPPLY OF EQUIPMENT**

Attachment – 1, Section-III of this Volume 1, specifies the list of equipment in the package, quantity of equipment to be supplied, delivered and installed.

**8.0** **INSTALLATION OF EQUIPMENT**

All necessary arrangements and adjustments for installation and operation of the equipment shall be made by the Bidder including getting power supply and telephone / mobile/ internet connection, however all the required document shall be arranged by the PPCB.

**9.0** **INSPECTION AND TEST**

9.1 **Unpacking Inspection**

The Contractor shall inspect at Site whether all the Equipment are packed in conformity with the Equipment list and packing list and are damage free, immediately after arrival of the Equipment at each Location.

9.2 **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 supplemental and/ or supporting Equipment, the Contractor shall carry out the performance test including such Equipment.

**10.0 PROVISION OF TRAINING**

The supplier shall provide training to the Boards staff for minimum two (2) weeks and **to a minimum of Six (6) persons** after the performance test and commissioning. Training should include but shall not be limited to the following:

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 Validation & management and software application.
10. Safety precautions.
11. Basic maintenance procedure& Preventive Maintenance.
12. “Do’s” and “Don’ts” in operation of the Equipment.
13. Handling of hazardous chemicals and gases.
14. Other aspects if any, which are deemed to be necessary by the Supplier.

In case the Equipment for training requires 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 during installation of the Equipment.

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

Contents of training manual and/or Pen drive for the Equipment shall include the following:

1. Principle of the Equipment.
2. Operation and calibration of the Equipment.
3. Maintenance and basic repair of the Equipment.
4. Safety instruction of the Equipment.
5. Others, which are deemed to be necessary by the Supplier.
6. QA/QC, Data Validation & management and software Application

**11.0 Operation & maintenance of Air Monitoring Stations**

11.1 The Contractor’s responsibilities without limitations shall include the following works to be carried out on the Continuous Ambient Air Quality Monitoring Stations installed under this Contract during their period of Operation &Maintenance:

1. Operation and Maintenance of all the commissioned equipment’s and amenities as supplied by the Manufacturer under the Contract including servicing during forced and planned outages and overhauls.
2. The Contractor shall take over the entire Continuous Ambient Air Monitoring Station (including all equipment) for O&M after execution of Indemnity Bond as per format placed at Attachment- 13, Section III of this Volume 1 of bid document.
3. The Contractor shall provide to the owner a monthly summary of all operation and maintenance activities performed during the month within a week of the succeeding month.
4. Operation and Maintenance Obligations:

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

* 1. Undertake comprehensive maintenance including i.e. schedule and breakdown maintenance & repair at site and keep the Board regularly informed regarding the status of the equipment’s and forward daily data as per Attachment 3 in Section – II of this Volume 1.

ii) Obtain permission from the owner and inform the O&M status of the equipment required to be sent to the works for repairs. The Contractor shall arrange spare equipment to keep CAAQM station operational.

1. Take reasonable action to ensure that the Personnel deployed at Continuous Ambient Air Quality Monitoring Stations and any subcontractor(s) and their agents are provided with a work place in compliance with applicable Law.
2. Keep the Continuous Ambient Air Quality Monitoring Stations clean, well maintained and in good working condition.
3. Security: It is the duty of the Contractor to secure the movable, immovable and other properties of the Owner at the Continuous Ambient Air Quality 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.
4. Scheduled Maintenance: Unless Owner and Contractor mutually agree otherwise, perform all required Scheduled maintenance for all equipment, auxiliaries etc., in accordance with the O&M specifications.

vii) 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.

* 1. The Contractor shall source all the spares required for maintenance & repairs of the installed equipment from Original Equipment Manufacturer (OEM) only.

1. The Operator shall not:
   1. Make any modifications as to the Continuous Ambient Air Quality Monitoring Stations, other than in an Emergency and without the prior written approval of the Owner, or
   2. 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.

1. The Contractor shall purchase spare parts, materials, supplies and other consumable items, and maintain an inventory thereof, for the Continuous Ambient Air Quality 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.
2. The Contractor shall review all applicable Laws and initiate and maintain such prosecution, procedures and operating plans relating to operation of the Continuous Ambient Air Quality Monitoring Stations as are necessary to comply therewith or assist the owner in complying therewith as the case may be.
3. The Contractor shall operate the equipment as per the laid out standards in the operating manual of the equipment and providing data of ambient air quality to PPCB on daily basis in the suggested format. The daily monthly and yearly Reporting Formats are attached as **Annexures X1 to X4** in section VIof this Volume 1
4. The valid data capture rate from the CAAQMS has to be 85%. The CAAQMS should not be inoperable for more than 2 days at a stretch failing which a penalty @ Rs. 5000/-only per day from the date of non-operation of the CAAQMS shall be levied.
5. Provide data collected through operation of the equipment’s on daily basis in suggested output formats as given in the bid document to the owner or as required.
   1. Establish and maintain daily, monthly and yearly 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.
   2. Provide access to the owner to the Continuous Ambient Air Quality Monitoring Stations and its data at all reasonable times and as and when required.
   3. Provide the operational date required to all competent authorities including, Government of India or concerned State Governments.
   4. On line transfer of data to PPCB /CPCB web site.
6. The Contractor shall ensure accuracy of the data provided as per standards.
7. The contractor shall ensure that zero checks performed daily, zero & span calibration on weekly basis and multipoint calibration performed every 03 months or re-calibration of all the equipment as per manufacturer’s instructions whichever is earlier or after any major repair or replacement of lamp as per requirements and maintain “Protocol Calibration” as per Attachment 2 in Section II of this Volume I.

11.2 Owner shall arrange for the following and Contractor shall guide and assist the Owner:

1. The Owner shall pay O&M charges to the Contractor at the end of each quarter after submission of validated data & report by the Contractor, in accordance with the payment terms detailed in Special Conditions of Contract.
2. Owner shall pay all fees including Service Tax, etc., imposed upon Owner by the Applicable Law.
3. The Owner shall identify and hand over the site for erection & commissioning of Air Monitoring Stations free from all encumbrances.
4. The Owner shall provide necessary documentation to the Contractor required to make arrangement for electricity & telephone connection at the site. However monthly charges for both electricity and phone bill shall be borne by the Contractor.
5. The data capture rate should be at least 85%. The full payment shall only be made if validated data is 85% and all the calibration protocol maintenance scheduled and spare parts/ consumable replacement document are maintained and verified by the owner/ board. The contractor has to maintain records / Receipts/ bills paid available as and when required.

**Data Display & supply frequencies and requirements**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Description of Data Submission** | | | | |
| **Data Display** | Daily | Display on real time basis (15 min for all pollutions & meteorological data and hourly for PM) | 85% or above daily data and AQI (between 6am to 6PM or as agreed upon time duration) |  |
| **Data Supply** | Daily | Data hourly average values of 15 min for all pollutions & meteorological data and hourly Data for PM | 85 % or above daily data (between 6am to 6PM or as agreed upon time duration) | Submission of daily data after logical checks (through software) in the form of soft and hard copy |
| Weekly | Report for all pollutants & meteorological data | 85% or above weekly data | Submission of data on weekly basis (soft & hard copy) |
| Monthly | Report for all pollutants & meteorological data | 85% or above monthly data | Submission of data on monthly basis (soft & hard copy) |
| Quarterly | Report for all pollutants & meteorological data | 85% or above Quarterly data | Submission of data on Quarterly basis (soft & hard copy) |
| Annually | Report for all pollutants & meteorological data | 85% or above annual data | Submission of data on annual basis (soft & hard copy) |

1. 85% of data will be treated for 100% payment and less than that will be on pro-rata basis. No data will be accepted less than 75% and will be treated at nil data and the appropriate penalties shall be applied (refer Penalties clause)

**Bidder Responsibility**

1. Setting up of Central Data Server Centre at Punjab Pollution Control Board Head Office and its Regional Offices in Batala, Mohali & Roopnagar & Lease Line connectivity for data transmission.
2. Trained Manpower deployment at respective Data Centers.
3. Bidder will participate in the coordination meetings, training etc.
4. Bidder will ensure quality data generation, regular calibration of Analyzers online data validation, and timely submission of software validated data.

11.3 **Handing Over of Station:** On expiry/closure/termination of the Contract Agreement, stations shall be handed over to Board in working condition to the satisfaction of Board. 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.

11.4 **Relocation of Station:**

During contract period, if Board intends to shift CAAQM station from one location of the city to another location, due to some 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 mutual agreed cost.

11.5 **Penalties:**

During O&M period, in case of any Analyser/ system failure, penalty will be charged by PPCB @ Rs.1000/- (one thousand) per day per Analyzer after a grace period of Two (2) continuous non-working days then penalty will be charged from day one of the fault. The grace period of Two (2) continuous non-working days shall be given only once per quarter (3 months) and then penalty will be charged from day one of the failure of data display.

For a failure of Data Display Board/panel, penalty will be charged by PPCB @ Rs. 1,000/- (one thousand) per day after a grace period of two (2) continuous non-working days. The grace period of two (2) continuous non-working days shall be given only once per quarter (3 months) and the penalty will be charged from day one of the failure of data display.

Failure due to power outage and other "Force Majeure" conditions shall not be considered for levy of penalty.

Total penalty per year during O&M period on account of above conditions shall be limited to 30% of total O&M charges for one year. Failing which defective/ malfunctioning analyser / system has to be replaced.

In case penalty in the year exceeds 30% as above, the Contractor shall be required to replace the defective analyzer (s) or systems with new ones at his own cost, failing which the SPCB shall have the right to terminate the O&M contract.

**12.0 SCHEDULE**

12.1 Contractor shall complete all activities covered in the scope of work up to installation & commissioning of Air Monitoring Stations within 150 days from date of opening of Letter of Credit.

12.2 The Contractor shall carry out Operation & Maintenance of Air Monitoring Stations for a period of five (5) years from the date of commissioning of the station, which can be extended further for a period of up to five (5) years at the mutually agreed rates and terms and conditions.

12.3 The operation and maintenance contract shall be executed by the concerned Member Secretary of State Pollution Control Board having jurisdiction or the area under his control or his authorized representative. The term and condition shall be governed as per the tender document. The Member Secretary of PPCB or any person authorized by him shall be the **ultimate consignee.**

**Attachment 1**

**Equipment List PER STATION (Total CAAQMS-04 Nos.)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Schedule** | **Brief Description** |  |  | **Qty. in nos.** | |
| **No.** |  |  |  |  |  |
| 1 | Continuous Automatic Air Quality Monitors | | | 1 unit each | |
|  | analyzers for CO, SO2,NO-NO2-NOX,NH3, O3, and Beta | | |  |  |
|  | Gauge PM2.5 and PM10 Monitors. | | |  |  |
| 2. | BTX Monitor/ Analyser | |  | 1 | Unit |
| 3. | Multi-calibration | systems for | gaseous monitors | 1 | Unit |
|  | comprising of gas supply / generation and | | |  |  |
|  | automated calibration | |  |  |  |
| 4. | Meteorological | Instrumentation comprising Wind | | 1 | Set |
|  | direction, Wind speed, Ambient temperature, | | |  |  |
|  | Relative humidity, Solar Radiation and Rainfall | | |  |  |
|  | mounted on telescoping crank up meteorological | | |  |  |
|  | Mast. |  |  |  |  |
| 5. | Computer system consisting of one PC along with | | | 1 | Lot |
|  | Laser Printer and DAS at the monitoring station | | |  |  |
|  | and one PC at central office with peripherals and | | |  |  |
|  | software for data acquisition / Data display Board | | |  |  |
|  | / transfer and system integration, telephone, | | |  |  |
|  | Modem. |  |  |  |  |
| 6. | Modem |  |  | 2 Units | |
| 7. | Recommended spares and supplies | | | 01 Lot | |
| 8. | Data display system | |  | 2 | Unit |
| 9. | Housing/ Container for Continuous Automatic | | | 1 | Unit |
|  | Monitoring Stations with Sampling line, Internal | | |  |  |
|  | fitting, Instruments racks, Electrical and Gas line | | |  |  |
|  | fittings, Tools (electrical and | | mechanical), and |  |  |
|  | Recommended spares. | |  |  |  |
| 10. | UPS, 10 KVA (1hr. full load back-up) | | | 1 | Unit |
| 11. | UPS, 5 KVA (2hrs. full load back-up) | | | 1 | Unit |
| 12. | Split Air Conditioner (2 Ton capacity) | | | 2 | Nos. |
| 13. | Split Air Conditioner (1 Ton capacity) | | | 1 | Unit |
| 14. | RCC foundation, pillars misc. works including civil & | | | 01 Lot | |
|  | electrical |  |  |  |  |

**Annexure I**

**Attachment 2**

**STATION PROTOCOL**

**FOR**

**CAAQM STATION UNDER O&M CONTRACT**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **NAME OF CAAQM STATION** | |  |  |  | **DATE:** | |  |  |
|  |  |  |  |  |  | | |  |  |
| **S.** | **Parameter** | **Status** | **Zero Value** | **Zero** | **Span Calibration** | | | **K Factor** | **Rem.** |
| **No.** |  |  |  | **Offset** |  |  |  | **(Span)** |  |
|  |  |  |  |  |  |  |  |  |  |
|  |  |  | ***Pre Post*** | ***Pre Post*** | **Span** | ***Pre*** | ***Post*** | ***PrePost*** |  |
|  |  |  |  |  | **Source** |  |  |  |  |

1. **CO** Analyzer
2. **SO2**Analyzer
3. **NOx**Analyzer

NO NO2NOx

1. NH3
2. **O3**Analyzer
3. **BTX** AnalyzerBenzene Toluene E- M+P Xylene O-Xylene
4. **Dust** Analyzer

PM2.5

PM10

1. **Meteorological \*\*Parameter** Temperature Humidity Wind Speed Wind Direction Solar Radiation
2. Rainfall
3. **Computers**
4. **UPS / ACs / Others**
5. **Data Display Board**

\*\*Meteorological parameters to be calibrated Twice a year.

**Maintenance** **Details/**

**Requirement**

1.

**Specific**

**Observation(s)**

**Station Maintained by…………………………** **Station supervised by ……………………**

**Attachment 3**

**DAILY REPORTING FORMAT FOR METEOROLOGICAL PARAMETERS**

**(To be submitted daily at 6 AM from the previous day 6 AM)**

**Location: Date:**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Hrs.** | **WIND SPEED** | **WIND DIRECTION** | **HUMIDITY** | **TEMPERATURE** | **SOLAR RADIATION** | **RAINFALL** | **REMARKS** |
| 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 |  |  |  |  |  |  |  |
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| 20-21 |  |  |  |  |  |  |  |
| 21-22 |  |  |  |  |  |  |  |
| 22-23 |  |  |  |  |  |  |  |
| 23-24 |  |  |  |  |  |  |  |
| 01-02 |  |  |  |  |  |  |  |
| 02-03 |  |  |  |  |  |  |  |
| 03-04 |  |  |  |  |  |  |  |
| 04-05 |  |  |  |  |  |  |  |
| 05-06 |  |  |  |  |  |  |  |
| Min. |  |  |  |  |  |  |  |
| Max. |  |  |  |  |  |  |  |
| Average |  |  |  |  |  |  |  |

**Attachment 4**

**MONTHLY REPORTING FORMAT FOR METEOROLOGICAL PARAMETERS**

**(To be submitted monthly by ending month)**

**Location: Date:**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **DATE** | **WIND SPEED** | **WIND DIRECTION** | **HUMIDITY** | **TEMPERATURE** | **SOLAR RADIATION** | **RAINFALL** | **REMARKS** |
|  |  |  |  |  |  |  |  |
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| Min. |  |  |  |  |  |  |  |
| Max. |  |  |  |  |  |  |  |
| Average |  |  |  |  |  |  |  |

**Attachment 5**

**DAILY REPORTING FORMAT FOR MAIN POLLUTANTS**

**(To be submitted daily 6 AM from the previous day till 6 AM of reporting day)**

**DAILY AMBIENT AIR QUALITY DATA**

**Location: Date:**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Hrs.** | **SO2** | **NO** | **NO2** | **NOX** | **NH3** | **CO** | **O3** | **PM2.5** | **PM10** | **Benzene** | **Toluene** | **Xylene** | **REMARKS** |
| 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 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 01-02 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 02-03 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 03-04 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 04-05 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 05-06 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Standards |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Min. |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Max. |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Average |  |  |  |  |  |  |  |  |  |  |  |  |  |

**Attachment 6**

**DAILY REPORTING FORMAT FOR MAIN POLLUTANTS**

**(To be submitted monthly at 12 Noon next day ending month)**

**DAILY AMBIENT AIR QUALITY DATA**

**Location: Date:**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Date** | **SO2** | **NO** | **NO2** | **NOX** | **NH3** | **CO** | **O3** | **PM2.5** | **PM10** | **Benzene** | **Toluene** | **Xylene** | **REMARKS** |
| 1 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 3 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 5 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 6 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 7 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 8 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 9 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 10 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 11 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 12 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 13 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 14 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 15 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 16 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 17 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 18 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 19 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 20 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 21 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 22 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 23 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 24 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 25 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 26 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 27 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 28 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 29 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 30 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 31 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Min. |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Max. |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Average |  |  |  |  |  |  |  |  |  |  |  |  |  |

**VOLUME 1**

**SECTION III**

**FORM OF TECHNICAL BID**

**SECTION III**

**FORM OF TECHNICAL BID**

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**Attachment 1**

<Letterhead of the Bidder>

**FORM OF QUESTIONNAIRE**

PUNJAB POLLUTION CONTROL BOARD PROJECT

BIDDING DOCUMENTS

FOR SUPPLY, INSTALLATION & COMMISSIONING

OF 04 NO. CONTINUOUS AMBIENT AIR QUALITY MONITORING STATIONS (CAAQMS) AND OPERATION & MAINTENANCE SERVICES FOR THESE CAAQMS AT DERA BABA NANAK, DERA BASSI, NANGAL & Barnala

Date :

**To,**

**THE MEMBER SECRETARY,**

**Punjab Pollution Control Board,**

**Vatavaran Bhawan,**

**Nabha Road, PATIALA(Pb.)**

From: Name of Bidder

Address

Name of Representative

Position

Fax No.

Email id.

Signature

Question

Brief report of experience, capabilities and company profile.

**Attachment 2**

<Letterhead of the Bidder>

**CERTIFICATE OF O&M PARTNER OF THE BIDDER IN INDIA**

**To,**

**THE MEMBER SECRETARY,**

**Punjab Pollution Control Board,**

**Vatavaran Bhawan,**

**Nabha Road,PATIALA(Pb.)**

Subject: - Certificate of Existence of Local Branch, Sales Residential and Representative Office(s) in India

1. Name of Office (s):
2. Address:

Tel. No. :

Fax No. :

Telex No. :

Email id :

1. Status of Office(s):
2. Date of Establishment of Office (s):
3. Name & Address of Residential Representative:
4. Total No. of years of association with OEM (Name of the manufacturer):
5. Total Manpower:
6. Total No. of trained Service Engineer:
7. Present No. of offices in India (Name the locations & address):
8. Total Turnover in last 3 years:
9. Major job in Hand:
10. Experience in O&M contract:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Sl. No. | Name of Client and Address, | Description of | Year of Placement | Present Status |
|  | Phone No.etc. | Contract (Brief | of Order |  |
|  |  | scope of contract) |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

Signature

Name:

Designation:

Seal:

**Attachment 3**

**FORM OF LETTER OF AUTHORITY**

**To,**

**THE MEMBER SECRETARY,**

**Punjab Pollution Control Board,**

**Vatavaran Bhawan,**

**Nabha Road, PATIALA(Pb.)**

Name of Manufacturer

Subject:- Letter of Authority from Manufacturer

Dear Sirs,

We, (Name of Manufacturer), a manufacturer duly organized and existing under the law of (Country Name) with its principal office of business at (Address) hereby make, constitute and appoint (name of Bidder), a company duly organized and existing under the laws of (Country Name) with its principal office of business at (Address) to be our true and lawful attorney in fact to do the following sets and deeds:

To present and bind us for Supply and O&M of Continuous Ambient Air Quality Monitoring Stations (CAAQMS) for Punjab Pollution Control Board in the State of Punjab, regarding the supply and installation of the following equipment proposed in the bid which we manufacture or produce.

|  |  |
| --- | --- |
| Item No. | Name of Equipment |
|  |  |

We, as a manufacturer bind ourselves as co-worker of the bid and are jointly and severally responsible for the compliance of the said bid and once (Name of Bidder) has been selected as a successful bidder, we shall manufacture, deliver and install the equipment in accordance with the terms and conditions of contract with (Name of Bidder) and Punjab Pollution Control Board.

We hereby give and grant to the said (Name of Bidder) full power and authority to do and perform all and every act and thing whatsoever, requisite necessary and proper to be done in the premises, as fully, to all intents and purposes as we might or could do with full power of submission and renovation hereby ratifying and conforming all that (Name of Bidder) or its duly authorized representative shall lawfully do or cause to do done by virtue hereof.

IN WITNESS WHEREOF, we have hereto signed this document on -------------------

202...

ACCEPTED ON -----------------------------, 202…

NAME OF BIDDER NAME OF ISSUING

MANUFACTURER

------------------------------------------------ -------------------------------------------

(Name of duly authorized (Name of duly authorized

Representative to sign and signature) representative to sign and

Signature)

----------------------------------------------- -------------------------------------------------

(Rank of position and department) (Rank of position and department)

**Attachment 3A**

<Letterhead of the Manufacturer>**FORM OF CERTIFICATE OF SUPPLY OF SPARES AND CONSUMABLES BY MANUFACTURER**

Date:

**To,**

**THE MEMBER SECRETARY,**

**Punjab Pollution Control Board,**

**Vatavaran Bhawan,**

**Nabha Road, PATIALA (Pb.)**

**Sub:- Certificate of Supply of Consumables and Spare Parts by Manufacturer**

This is to certify that we (Name of Manufacturer) shall supply the consumables and spare parts of the equipment mentioned below during O&M period under the contract (contract detail) to the contractor (Name of the contractor)/ Owner.

It is hereby guaranteed that we shall maintain stocks of consumables and spare parts for the following equipment for a period of Ten (10) years after the commissioning of the equipment in India.

|  |  |  |
| --- | --- | --- |
| Item No. | Name of Equipment | Name of Manufacturer |
|  |  |  |

Signature:

Name of Person:

Position:

Name of Manufacturer:

Office Seal of Manufacturer:

Legal Address of Manufacturer:

**Attachment 4**

<Letterhead of the Manufacturer>

**FORM OF CERTIFICATE OF COUNTRY OF ORIGIN**

**To,**

**THE MEMBER SECRETARY,**

**Punjab Pollution Control Board,**

**Vatavaran Bhawan,**

**Nabha Road, PATIALA (Pb.)**

Name of Manufacturer

Subject: - Certificate of Country of Origin

We, (Name of Manufacturer), hereby certify that our equipment for procurement and installation of equipment for Punjab Pollution Control Board in the State of Punjab is to be manufactured in the country mentioned below:

|  |  |  |
| --- | --- | --- |
| Item No. | Name of Equipment | Country of Origin |
|  |  |  |

Signature

Name of Person:

Title:

Name of Manufacturer:

Legal Address:

**Attachment 5**

<Letterhead of the O&M Partner>

**FORM OF CERTIFICATE OF CARRYING OUT O&M OF CAAQMS’s BY THE O&M**

**PARTNER IN INDIA**

Date:

**To:**

**THE MEMBER SECRETARY,**

**Punjab Pollution Control Board,**

**Vatavaran Bhawan,**

**Nabha Road, PATIALA (Pb.)**

**Sub:- Certificate of carrying out O&M of CAAQMS’s by the O&M partner in India.**

This is to certify that we <Name of O&M Partner> hereby agree to carry out day to day Operation and maintenance of the three (04) CAAQMS installed and commissioned by <Name of the main bidder> for minimum of five years from the date of installation & commissioning of the CAAQMS at the rates quoted by <Name of the main bidder> against this tender, strictly in accordance with terms & conditions contained in this bid document.

Signature:

Name of Person:

Position:

Name of O&M Partner:

Name Seal of O&M Partner:

Legal Address of O&M Partner in India:

Counter-signed by main bidder

Name of Person:

Position:

Name of the Bidder:

Office Seal of Bidder:

Legal Address of Bidder:

**Attachment 6**

<Letterhead of the O&M Partner>

**LIST of** **Equipment Imported and indigenous**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Sr.No.** | **Name of equipment** | **Country of Origin** | **Name of manufacturer** | **Quantity** |
|  |  |  |  |  |

Signature

Seal

Dated

**Attachment 7**

<Letterhead of the O&M Partner>

**LIST of Manufacturer of Imported and indigenous equipment**

|  |  |  |
| --- | --- | --- |
| **S. No.** | **Name of equipment** | **Name of manufacture** |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

**Attachment 8 A**

**PROFORMA FOR FINANCIAL CAPABILITY OF BIDDER**

**(for a period of last three years)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Bid No. ---------------- | Package Code ---------------- | | Date of Opening -------------- | | |
| Time --------------------- |  |  |  |  |  |
| Name |  | of | the | | Bidder |
| ……………………………………………………………………….. | | | | |  |
|  |  |  |  |  |  |
| **Year** |  | **Currency** |  | **Turnover** |  |
| 2021-22 financial year | |  |  |  |  |
| 2020-21 financial year | |  |  |  |  |
| 2019-20 financial year | |  |  |  |  |
| Average |  |  |  |  |  |
|  |  |  |  |  |  |

**Note:**

1. The annual turnover amount is to be supported by annual report and audited account statement.

Signature of the Authorized Representative

Name of the Person

Position

**Attachment 8 B**

**PROFORMA FOR PERFORMANCE STATEMENT FOR MANUFACTURER**

**(for a period of last five years)**

Bid No. Name of Equipment Date of Opening Time

Name of the Manufacturer

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Order placed by Company (full address & Name Contact Person with Mobile) | Order No. & Date | Description on of ordered equipment t (Model no.) | Quantity supplied | Value of order | Date of commissioning and handing over | Has the equipment been satisfactorily functioning? **(Attach certificates from the Purchaser/ Consignee for each equipment)** |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|  |  |  |  |  |  |  |

**NOTE: Bidder** to furnish above detail for each equipment supplied during the last five years.

## Signature of the Bidder’s Authorized Representative

**Name of the Bidder’s Representative**

**Position**

**Mobile No.**

## Attachment 8 C

**PROFORMA FOR PERFORMANCE STATEMENT FOR BIDDER (O&M OPERATOR) AS**

**AUTHORIZED REPRESENTATIVE OF THE MANUFACTURER (for a period of last five years)**

Bid No. Name of Equipment Date of Opening Time

Name of the Manufacturer

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Order placed by Company (full address & Name Contact Person with Mobile) | Order No. & Date | Description on of ordered equipment t (Model no.) | Quantity supplied | Value of order | Date of commissioning and handing over | Has the equipment been satisfactorily functioning? **(Attach certificates from the Purchaser/ Consignee for each equipment)** |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|  |  |  |  |  |  |  |

**NOTE: Bidder** to furnish above detail for each equipment supplied during the last five years.

## Signature of the Bidder’s Authorized Representative

**Name of the Bidder’s Representative**

**Position**

**Mobile No.**

**Attachment 9**

**CAPABILITY & EXPERIENCE OF O&M PARTNER**

**Name and address of the O&M Partner in India (if applicable):**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Sl. | Name of the O&M | Educational | Experience in | | Detail |
| No. | personnel proposed to | Qualification | no. of years in | | curriculum |
|  | be deployed |  | carrying | out | Vitae |
|  |  |  | O&M | of | Attached |
|  |  |  | CAAQMs. |  | (YES / NO) |
| 1. |  |  |  |  |  |
|  |  |  |  |  |  |
| 2. |  |  |  |  |  |
|  |  |  |  |  |  |
| 3. |  |  |  |  |  |
|  |  |  |  |  |  |
| 4. |  |  |  |  |  |
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| 5. |  |  |  |  |  |
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| 6. |  |  |  |  |  |
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| 7. |  |  |  |  |  |
|  |  |  |  |  |  |
| 8. |  |  |  |  |  |
|  |  |  |  |  |  |
| 9. |  |  |  |  |  |
|  |  |  |  |  |  |

**Signature of Bidder**

**Seal**

**Date**

**Attachment 10**

**FORM OF BANK GUARANTEE FOR BID SECURITY**

(To be stamped in accordance with Stamp Act, if any, of the Country of the issuing Bank)

Bank Guarantee No.---------------------------

Ref. No.:- Date :-----------------------

**To,**

**THE MEMBER SECRETARY,**

**Punjab Pollution Control Board,**

**Vatavaran Bhawan,**

**Nabha Road,PATIALA(Pb.)**

Dear Sirs,

WHEREAS-------------------------( here in after called “the Bidder”) has submitted its bid dated ------------------------- for Supply and O&M of 04 NOs. Continuous Ambient Air Quality Monitoring Stations (CAAQMS) for **PUNJAB POLLUTION CONTROL BOARD** at **PATIALA** (hereinafter called “The Board”)

KNOW ALL MEN by these present that WE------------------------------------ of having

our registered office at ------------------------- (hereinafter called “The Bank”) are

bound unto Punjab Pollution Control Board, India (hereinafter called “The Board”) in the sum of Rs. ------------------------ (amount as per bid document in Indian Rs.\_\_\_\_\_\_\_\_\_) (Rupees\_\_\_\_\_\_\_\_\_\_\_\_\_), for which payment well and assign, by the represents. Sealed with the common seal of the bank this-------- day \_\_\_\_\_\_\_\_ of202...

THE CONDITIONS of this obligation are:

1. If a Bidder withdraws / modifies its Bid during the period of Bid validity

Specified in Sub-clause 4.6 hereunder;

Or

1. If the bidder having been notified of the acceptance of its bids by the Board during the period of bid validity:
   1. fails or refuses to execute the Contract Form, when requested ; or
   2. fails or refuses to furnish the Performance Security, in accordance with the Instruction to Bidders.

Or

1. In case bidder refuses to withdraw, without any cost to the Owner, those deviations, which the bidder did not state in the Deviation Schedules.

We undertake to pay to the Board upto the above amount, according to and upon receipt of, its first written demand, without the Board having to substantiate its demand, provided that in its demand the Board will note that the amount claimed by it is due to it owing to the occurrence of one or all of the three above stated conditions, specifying the occurred condition or conditions.

This guarantee will remain in force up-to two (02) years after commissioning of the complete system.

[NAME OF BANK]

By------------------------------------------

(Title)

**Authorized Representative**

****

(Signature of Witness)

Name of Witness -------------------------------------------------------------------------

Address of Witness-----------------------------------------------------------------------



**Attachment 11**

**PRE-REQUISITES FOR INSTALLATION OF EQUIPMENT**

**To :**

**THE MEMBER SECRETARY,**

**Punjab Pollution Control Board,**

**Vatavaran Bhawan,**

**Nabha Road, PATIALA(Pb.)**

Dear Sir,

Following are the pre-requisites for installations of the equipment offered by us, which are required to be provided by you prior to installation of the equipment:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Package no.** | **Name** | **of** | **the** | **Installation & commissioning pre-** |
| **/ Item No.** | **Equipment** |  |  | **requisites\*** |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

Signature of the Authorized Representative

Name of the Person

Position

**Attachment 12**

**SUPPLY, INSTALLATION & COMMISSIONING OF 04 NOs. CONTINUOUS AMBIENT AIR QUALITY MONITORING STATIONS (CAAQMS) AT DERA BABA NANAK, DERA BASSI, NANGAL & BARNALA FOR PUNJAB POLLUTION CONTROL BOARD, PATIALA**

**AND THEIR OPERATION & MAINTENANCE SERVICES**

**(Deviation Schedule)**

**Bidders Name & Address**

**To,**

**THE MEMBER SECRETARY,**

**Punjab Pollution Control Board,**

**Vatavaran Bhawan,**

**Nabha Road, PATIALA (Pb.)**

Dear Sir,

**Subject:-Deviation Schedule.**

We declare that the following are the only and exhaustive deviations, variations from, exceptions and exclusions to the Bidding Documents for Services as outlined in your Technical Specifications for the subject package. Except these deviations, subject to the approval and acceptance by you, the entire work shall be performed as per your specifications and documents. Further, we agree the additional conditions, if any found elsewhere in the offer other than those stated below, save that pertaining to any rebates / discount offered, shall not be given effect to:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Equipment** | **Vol./ Clause Ref. /** | **As Specified** | **in** | **Deviation** | **and** |
| **Code No.** | **Page No.** | **the** | **Bid** | **Variations to** | **the** |
|  |  | **Documents** |  | **Bid document** | |
|  |  |  |  |  |  |

Date: (Signature)

Place ……………………………

(Printed Name)

……………………………

(Designation)

……………………………

(Common Seal)

**Attachment 13**

**INDEMNITY BOND FOR HANDING OVER THE CONTINUOUS AMBIENT AIR QUALITY MONITORING STATIONS INCLUDING ALL EQUIPMENT TO THE O&M CONTRACTOR**

This Indemnity Bond is made this ……………. Day of 202.. ……………………….

By………….a Company registered under the Companies Act, 1956/Partnership

Firm / Proprietary concern having its registered office at …………………………

(Hereinafter called as “Contractor” or “obligator” which expression

shall include its successors and perm(PPCB)titled assigns) in favour of **PUNJABPOLLUTION CONTROL BOARD**, with Office at Vatavaran Bhawan, Nabha Road, Patiala, which term shall include permitted assigns and successors, (hereinafter called “PPCB” which expression shall include its successors and assigns).

Whereas PPCB has awarded to the Contractor, a contract for O&M of three no. of Continuous Ambient Air Monitoring Stations (CAAQMS located at Dera Baba Nanak, Dera Bassi, Nangal & Barnala vide its Letter of Intent / Award Letter

* Contract No…………….. dated …………………….. (hereinafter called the “Contract”), in the terms of which Contractor shall be responsible for the Equipment’s to be handed over to it by PPCB for the purpose of performance of the Contract (hereinafter called the “Equipment’s”).

Now, therefore this Indemnity Bond witnessed as follows:

1. That in consideration of various Equipment’s as mentioned in the Contract, valued at Rs.----------------- (Rupees…………………..) to be handed over to the Contractor for the purpose of performance of the Contract, the Contractor hereby undertakes to indemnify and shall keep PPCB indemnified, for the full value of the Equipment. The Contractor hereby acknowledges receipt of the Equipment’s as per details in the Schedule appended hereto.
2. That the Contractor is obliged and shall remain absolutely responsible for the safe custody of the Equipment sat the 04 Continuous Ambient Air Monitoring Stations (CAAQMS) belonging to PPCB against all risks whatsoever till the Equipment’s are duly used in accordance with all terms of the Contract. The Contractor undertakes to keep PPCB harmless against any loss or damage that may be caused to the Equipment.
3. The Contractor undertakes that the Equipment’s shall be used exclusively for the performance/ execution of the Contract strictly in accordance with its terms and conditions and no part of the Equipment’s shall be utilized for any other work or purpose whatsoever. It is clearly understood by the Contractor that non- observance of the obligations under this Indemnity Bond by the Contractor shall inter-alia constitute a breach of the terms and conditions of this indemnity bond on the part of the Contractor for all intents and purposes including legal / penal consequences.
4. That PPCB is and shall remain the exclusive Owner of the Equipment free from all encumbrances, charges or liens of any kind, whatsoever. The Equipment shall at all times be open to inspection and checking by Project-in-Charge PPCB and shall always be free at all time to take possession of the Equipment’s in whatever form the equipment’s may be. If in its opinion, the equipment’s are likely to be endangered, mis-utilised or converted to uses other than those specified in the Contract, by any act of omission or commission on the part of the Contractor; he finds itself and undertakes to comply with the direction or demand of PPCB to return the Equipment’s without any demur or reservation.
5. That this Indemnity Bond is irrevocable. If at any time any loss or damage occurs to the Equipment’s or the same or any part thereof is miss utilized in any manner whatsoever then the Contractor hereby agrees that the decision of the Project-in-Charge of PPCB as to assessment of loss or damage to the Equipment’s shall be final and binding on the Contractor. The Contractor binds itself and undertakes to replace the lost and / or damaged Equipment’s at its own or remedy that may be available to PPCB against the Contractor under the Contract and under this Indemnity Bond.
6. Now the condition of this Bond is that if the Contractor shall duly and punctually comply with the terms and conditions of this bond to the satisfaction of PPCB, then the above bond shall be void, but otherwise, it shall remain in full force and virtue.

In witness whereof, the Contractor has hereunto set its hand through its authorized representative under the common seal of the company, the day month and year first above mentioned.

**SCHEDULE NO. 1**

|  |  |  |  |
| --- | --- | --- | --- |
| Particulars of the | Quantity | Value of the | Signature of |
| Equipment’s |  | Equipment | Authorized Person |
| handed over |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

For and on behalf of

M/s…………………………….

Witness I

1. Signature
2. Name

|  |  |  |
| --- | --- | --- |
| 3. | Address | Name |
|  |  | Signature |
|  |  | Designation |
|  |  | Authorized representative |

Witness II

1. Signature
2. Name

|  |  |  |
| --- | --- | --- |
| 3. | Address | (Common Seal) |
|  |  | (In case of Company) |
|  |  |  |

**Attachment 14**

**LIST OF BANKS ACCEPTABLE FOR SUBMISSION**

**SCHEDULED COMMERCIAL BANKS FOR BID SECURITY**

1. **LIST OF SCHEDULED PUBLIC SECTOR BANKS**
2. State Bank of India
3. Bank of India
4. Bank of Maharashtra
5. Canara Bank
6. Central Bank of India
7. Indian Bank
8. Indian Overseas Bank
9. Punjab National Bank
10. Punjab & Sind Bank
11. Union Bank of India
12. UCO Bank
13. Bank of Baroda

**(B) LIST OF SCHEDULED PRIVATE SECTOR BANKS**

1. City Union Bank LTD
2. Dhanalakshmi Bank
3. Federal Bank Ltd.
4. Jammu & Kashmir Bank Ltd.
5. Karnataka Bank Ltd.
6. Karur Vysya Bank Ltd.
7. Axis Bank Ltd..
8. Nainital Bank Ltd.
9. Kotak Mahindra Bank
10. South Indian Bank Ltd.
11. Tamilnadu Mercantile Bank Ltd.
12. INDUSIND Bank Ltd.
13. ICICI Bank Ltd.
14. HDFC Bank Ltd.
15. IDBI Bank Ltd.
16. Yes Bank
17. Bandhan Bank Ltd.

**(C)** **LIST OF SCHEDULED FOREIGN BANKS IN INDIA**

1. Australia and New Zealand Banking Group Ltd.
2. Bank of Bahrain & Kuwait BSC
3. Barclays Bank Plc
4. AB Bank Ltd
5. Bank of America
6. Bank of Nova Scotia
7. BNP Paribas
8. Citi Bank NA
9. Deutsche Bank
10. HSBC Ltd
11. Societe Generale
12. Standard Chartered Bank
13. American Express Banking Corporation
14. DBS Bank India Ltd.

**Attachment 15**

**LIST OF BANKS ACCEPTABLE FOR SUBMISSION OF BANK GUARANTEES FOR ADVANCE PAYMENTS, PERFORMANCE SECURITIES AND SECURITIES FOR DEED OF JOINT UNDERTAKING**

1. **LIST OF SCHEDULED PUBLIC SECTOR BANKS**
2. State Bank of India
3. Bank of India
4. Bank of Maharashtra
5. Canara Bank
6. Central Bank of India
7. Indian Bank
8. Indian Overseas Bank
9. Punjab National Bank
10. Punjab & Sind Bank
11. Union Bank of India
12. UCO Bank
13. Bank of Baroda

**(B) LIST OF SCHEDULED PRIVATE SECTOR BANKS**

1. City Union Bank LTD
2. Dhanalakshmi Bank
3. Federal Bank Ltd.
4. Jammu & Kashmir Bank Ltd.
5. Karnataka Bank Ltd.
6. Karur Vysya Bank Ltd.
7. Axis Bank Ltd..
8. Nainital Bank Ltd.
9. Kotak Mahindra Bank
10. South Indian Bank Ltd.
11. Tamilnadu Mercantile Bank Ltd.
12. INDUSIND Bank Ltd.
13. ICICI Bank Ltd.
14. HDFC Bank Ltd.
15. IDBI Bank Ltd.
16. Yes Bank
17. Bandhan Bank Ltd.

**(C)** **LIST OF SCHEDULED FOREIGN BANKS IN INDIA**

1. Australia and New Zealand Banking Group Ltd.
2. Bank of Bahrain & Kuwait BSC
3. Barclays Bank Plc
4. AB Bank Ltd
5. Bank of America
6. Bank of Nova Scotia
7. BNP Paribas
8. Citi Bank NA
9. Deutsche Bank
10. HSBC Ltd
11. Societe Generale
12. Standard Chartered Bank
13. American Express Banking Corporation
14. DBS Bank India Ltd.

**Attachment 16**

**PRE CONTRACT INTEGRITY PACT**

**General**

This pre-bid pre-contract Agreement (hereinafter called the Integrity Pact) is made on ………………. day of the month of ………………202., between,

the BUYER (Punjab Pollution Control Board) acting through **Sh. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**, Member Secretary, Punjab Pollution Control Board, Vatavaran Bhawan, Nabha Road, Patiala, (Punjab) India, hereinafter called the “BUYER”, which expression shall mean and include, unless the context otherwise requires, his successors in office and assigns of the First Part and M/s………………… represented by Shri……………., Chief Executive

Officer (hereinafter called the “BIDDER / SELLER” which expression shall mean and include, unless the context otherwise requires, his successors and permitted assigns) of the Second Part.

WHEREAS the BUYER proposes to procure (Name of the Stores/Equipment/Item) and the BIDDER/Seller is willing to offer/has offered the stores and

WHEREAS the BIDDER is a private company/public company/Government undertaking/partnership/registered export agency, constituted in accordance with the relevant law in the matter and the BUYER PPCB work under the aegis of Environment & Forests, performing its functions as per the provisions of Water Act, 1974, Air Act ,1981 and EPA Act, 1986. NOW, THEREFORE,

To avoid all forms of corruption by following a system that is fair, transparent and free from any influence/prejudiced dealings prior to, during and subsequent to the currency of the contract to be entered into with a view to :-

Enabling the BUYER to obtain the desired said stores/equipment at a competitive price in conformity with the defined specifications by avoiding the high cost and the distortionary impact of corruption on public procurement, and

Enabling BIDDERs to abstain from bribing or indulging in any corrupt practice in order to secure the contract by providing assurance to them that their competitors will also abstain from bribing and other corrupt practices and the BUYER will commit to prevent corruption, in any form, by its officials by following transparent procedures.

The parties hereto hereby agree to enter into this Integrity Pact and agree as follows:

**Commitments of the BUYER**

1.1 The BUYER undertakes that no official of the BUYER, connected directly or indirectly with the contract, will demand, take a promise for or accept, directly or through intermediaries, any bribe,

consideration, gift, reward, favour or any material or immaterial benefit or any other advantage from the BIDDER, either for themselves or for any person, organization or third party related to the contract in exchange for an advantage in the bidding process, bid evaluation, contracting or implementation process related to the contract.

1.2 The BUYER will, during the pre-contract stage, treat all BIDDERs alike, and will provide to all BIDDERs the same information and will not provide any such information to any particular BIDDER which could afford an advantage to that particular BIDDER in comparison to other BIDDERs.

1.3 All the officials of the BUYER will report to the appropriate Government office any attempted or completed breaches of the above commitments as well as any substantial suspicion of such a breach.

1. In case any such preceding misconduct on the park of such official(s) is reported by the BIDDER to the BUYER with full and verifiable facts and the same is prima facie found to be correct by the BUYER, necessary disciplinary proceedings, or any other action as deemed fit, including criminal proceedings may be initiated by the BUYER and such a person shall be debarred from further dealings related to the contract process. In such a case while an inquiry is being conducted by the BUYER the proceedings under the contract would not be stalled.

**Commitments of BIDDERs**

1. The BIDDER commits itself to take all measures necessary to prevent corrupt practices, unfair means and illegal activities during any stage of its bid or during any pre-contract stage in order to secure the contract or in furtherance to secure it and in particular commit itself to the following: -

3.1 The BIDDER will not offer, directly or through intermediaries, any bribe, gift, consideration, reward, favour, any material or immaterial benefit or other advantage, commission, fees, brokerage or inducement to any official of the BUYER, connected directly or indirectly with the bidding process, or to any person, organization or third party related to the contract in exchange for any advantage in the bidding, evaluation, contracting and implementation of the contract.

3.2 The BIDDER further undertakes that it has not given, offered or promised to give, directly or indirectly any bribe, gift, consideration, reward, favour, any material or immaterial benefit or other advantage, commission, fees, brokerage or inducement to any official of the BUYER or otherwise in procuring the Contract or forbearing to do or having done any act in relation to the obtaining or execution of the contract or any other contract with the Government for showing or forbearing to show favour or disfavor to any person in relation to the contract or any other contract with the Government.

3.3 BIDDERs shall disclose the name and address of agents and representatives and Indian BIDDERs shall disclose their foreign Principals or Associates.

3.4 BIDDERs shall disclose the payments to be made by them to agents/brokers or any other intermediary, in connection with this bid/contract.

3.5 The BIDDER further confirms and declares to the BUYER that the BIDDER is the original manufacture/integrator/authorized government sponsored export entity of the defense stores and has not engaged any individual or firm or company whether Indian or foreign to intercede, facilitate or in any way to recommend to the BUYER or any of its functionaries, whether officially or unofficially to the award of the contract to the BIDDER, nor has any amount been paid, promised or intended to be paid to any such individual, firm or company in respect of any such intercession, facilitation or recommendation.

3.6 The BIDDER, either while presenting the bid or during pre-contract negotiations or before signing the contract, shall disclose any payments he has made, is committed to or intends to make to officials of the BUYER or their family members, agents, brokers or any other intermediaries in connection with the contract and the details of services agreed upon for such payments.

3.7 The BIDDER will not collude with other parties interested in the contract to impair the transparency, fairness and progress of the bidding process, bid evaluation, contracting and implementation of the contract.

3.8 The BIDDER will not accept any advantage in exchange for any corrupt practice, unfair means and illegal activities.

3.9 The BIDDER shall not improperly, for purposes of competition or personal gain, or pass on to others, any information provided by the BUYER as part of the business relationship, regarding plans, technical proposals and business details, including information contained in any electronic data carrier. The BIDDER also undertakes to exercise due and adequate care lest any such information is divulged.

3.10 The BIDDER commits to refrain from giving any complaint directly or through any other manner without supporting it with full and verifiable facts.

3.11 The BIDDER shall not instigate or cause to instigate any third person to commit any of the actions mentioned above.

3.12 If the BIDDER or any employee of the BIDDER or any persons action on behalf of the BIDDER, either directly or indirectly, is a relative of any of the officers of the BUYER, or alternatively, if any relative of an officer of the BUYER has financial interest/stake in the BIDDER’s firm, the same shall be disclosed by the BIDDER at the time of filling of tender.

3.13 The BIDDER shall not lend to or borrow any money from or enter into any monetary dealings or transactions, directly or indirectly, with any employee of the BUYER.

1. **Previous Transgression**

4.1 The BIDDER declares that no previous transgression occurred in the last three years immediately before signing of this Integrity Pact, with any other company in any country in respect of any corrupt practices envisaged hereunder or with any Public Sector Enterprise in India or any Government Department in India that could justify

BIDDER’s exclusion from the tender process.

4.2 The BIDDER agrees that if it makes incorrect statement on this subject, BIDDER can be disqualified from the tender process or the contract, if already awarded, can be terminated for such reason.

1. **Sanctions for Violations**

5.1 Any breach of the aforesaid provisions by the BIDDER or any one employed by it or acting on its behalf (whether with or without the knowledge of the BIDDER) shall entitle the BUYER to take all or any one of the following actions, wherever required: -

1. To immediately call off the pre-contract negotiations without assigning any reason or giving any compensation to the BIDDER. However, the proceedings with the other BIDDER (s) would continue.
2. The Earnest Money Deposit (in pre-contract stage) and/ or Security Deposit/Performance Bond (after the contract is signed) shall stand forfeited either fully or partially, as decided by the BUYER and the BUYER shall not be required to assign any reason therefore.
3. To immediately cancel the contract, if already signed, without giving any compensation to the BIDDER.
4. To recover all sums already paid by the BUYER, and in case of an Indian BIDDER with interest thereon at 2% higher than the prevailing Prime Lending Rate of State Bank of India, while in case of a BIDDER from a country other than India with interest thereon at 2% higher than the LIBOR. If any outstanding payment is due to the BIDDER from the BUYER in connection with any other contract for any other stores, such outstanding payment could also be utilized to recover the aforesaid sum and interest.
5. To encash the advance bank guarantee and performance bond/warranty bond, if furnished by the BIDDER, in order to recover the payments, already made by the BUYER, along with interest.
6. To cancel all or any other Contracts with the BIDDER. The BIDDER shall be liable to pay compensation for any loss or damage to the BUYER resulting from such cancellation/rescission and the BUYER shall be entitled to deduct the amount so payable from the money

(s) Due to the BIDDER.

1. To debar the BIDDER from participating in future bidding processes of the Government of India for a minimum period of five years, which may be further extended at the discretion of the BUYER.
2. To recover all sums paid in violation of this Pact by BIDDER (s) to any middleman or agent or broker with a view to securing the contract.
3. In cases where irrevocable Letters of Credit have been received in respect of any contract signed by the BUYER with the BIDDER, the same shall not be opened.

1. Forfeiture of Performance Bond in case of a decision by the BUYER to forfeit the same without assigning any reason for imposing sanction for violation of this Pact.

5.2 The BUYER will be entitled to take all or any of the actions mentioned at Para 6.1 (i) to (x) of this Pact also on the Commission by the BIDDER or any one employed by it or acting on its behalf (whether with or without the knowledge of the BIDDER), of an offence as defined in Chapter IX of the Indian Penal code, 1860 or Prevention of Corruption Act, 1988 or any other statute enacted for prevention of corruption.

5.3 The decision of the BUYER to the effect that a breach of the provisions of this Pact has been committed by the BIDDER shall be final and conclusive on the BIDDER. However, the BIDDER can approach the Independent Monitor (s) appointed for the purposes of this Pact.

1. **Fall Clause**

6.1 The BIDDER undertakes that it has not supplied/is not supplying similar product/systems or subsystems at a price lower than that offered in the present bid in respect of any other Ministry/Department of the Government of India or PSU and if it is found at any stage that similar product/systems or sub systems was supplied by the BIDDER to any other Ministry/Department of the Government of India, State Pollution Control Boards or a PSU at a lower price, then that very price, with due allowance for elapsed time, will be applicable to the present case and the difference in the cost would be refunded by the BIDDER to the BUYER, if the contract has already been concluded.

**7. Independent Monitors**

7.1 The BUYER has appointed Er. J.S. Kamyotra, EX Director, Central Pollution Control Board, Delhi as Independent Monitors (hereinafter referred to as Monitors) for this Pact.

7.2 The task of the Monitors shall be to review independently and objectively, whether and to what extent the parties comply with the obligations under this Pact.

7.3 The Monitors shall not be subject to instructions by the representatives of the parties and perform their functions neutrally and independently.

7.4 Both the parties accept that the Monitors have the right to access all the documents relating to the project/procurement, including minutes of meetings.

7.5 As soon as the Monitor notices, or has reason to believe, a violation of this Pact, he will so inform the Authority designated by the BUYER.

7.6 The BIDDER(s) accepts that the Monitor has the right to access without restriction to all Project documentation of the BUYER including that provided by the BIDDER. The BIDDER will also grant the Monitor, upon his request and demonstration of a valid interest, unrestricted and unconditional access to his project documentation. The same is applicable to Subcontractors. The Monitor shall be under contractual obligation to treat the information and documents of the BIDDER/Subcontractor(s) with confidentiality.

7.7 The BUYER will provide to the Monitor sufficient information about all meetings among the parties related to the Project provided such meetings could have an impact on the contractual relations between the parties. The parties will offer to the Monitor the option to participate in such meetings.

7.8 The Monitor will submit a written report to the designated Authority of BUYER/Secretary in the Department/ within 8 to 10 weeks from the date of reference or intimation to him by the BUYER / BIDDER and, should the occasion arise, submit proposals for correcting problematic situations.

1. **Facilitation of Investigation**

In case of any allegation of violation of any provisions of this Pact or payment of Commission, the BUYER or its agencies shall be entitled to examine all the documents including the Books of Accounts of the BIDDER and the BIDDER shall provide necessary information and documents in English and shall extend all possible help for the purpose of such examination.

1. **Law and Place of Jurisdiction**

This Pact is subject to Indian Law and in Patiala Court in the State of Punjab.

1. **Other Legal Actions**

The actions stipulated in this Integrity Pact are without prejudice to any other legal action that may follow in accordance with the provisions of the extant law in force relating to any civil or criminal proceedings.

1. **Validity**

11.1 The validity of this Integrity Pact shall be from date of its signing and extend upto 5 years or the complete execution of the contract to the satisfaction of both the BUYER and the BIDDER/Seller, including warranty period, whichever is later. In case BIDDER is unsuccessful, this Integrity Pact shall expire after six months from the date of the signing of the contract.

11.2 Should one or several provisions of this Pact turn out to be invalid; the remainder of this Pact shall remain valid. In this case, the parties will strive to come to an agreement to their original intentions.

1. The parties here by sign the Integrity Pact at

…………………on…………………..

|  |  |
| --- | --- |
| BUYER | BIDDER |
|  |  |
| Member Secretary, | CHIEF EXECUTIVE OFFICER |
| Punjab Pollution Control Board, | COMPANYS NAME |
| Vatavaran Bhawan,  Nabha Road, Patiala, |  |
| Punjab, INDIA |  |
| Witness | Witness |
| 1……………………………………… | 1………………………………… |
| 2……………………………………… | 2………………………………… |

**VOLUME I**

**SECTION IV**

**FORM OF FINANCIAL BID**

**SECTION IV**

**FORM OF FINANCIAL BID**

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Attachment 2 Summary of Bid Price………………………………………………

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**Attachment 1**

<Letterhead of the Bidder>

Date:

Grant no.: --------------

Bid No. ------------------

**BID FORM**

TO:

|  |
| --- |
| Member Secretary, |
| Punjab Pollution Control Board, |
| Vatavaran Bhawan, Nabha Road, Patiala, |
| Punjab, INDIA |

Gentlemen:

1. Having examined the Bidding documents for procurement of 04 no’s CAAQMS’s to be installed in 04 cities and at 04 locations by PPCB, their installation & commissioning and Operation & Maintenance for an initial period of 05 years (herein after referred to as “the Works”), including, but not limited to, the Instructions to Bidders, Scope of Works, General and Special Conditions of Contract, Technical Specifications, Schedules,

Attachments, Amendment Nos. ……… we, the undersigned, offer to execute and complete the whole of the works and remedy any defects therein, in conformity with the said Bidding Documents for the sum of

International trading currency ………………………….. (in

Figures……………..) For the equipment including all other charges as

Mentioned in the document, supplied from Foreign Origin and Indian Rupees………………………………………. (INR………………….+…….. taxes as applicable) for the Incidental costs incurred in India (if any) as may be ascertained in accordance with the Summary of Bid Price and Bid Price breakup attached herewith and made part of this bid.

1. We undertake, if our Bid is accepted, to complete and deliver the whole of the Works comprised in the Contract within the time specified in the contract, subject to the said conditions.
2. If our Bid is accepted, we will obtain guarantee of a bank for a sum equivalent to ------------- percent of the Contract Price for the due performance of the Contract, in the form prescribed by the Board.

1. We agree to abide by this Bid for a period of One Hundred Eighty (180) days from the final date of the submission of Bid fixed in sub-clause 7.2 of the Instruction of Bidders, and shall remain biding upon us and may be accepted at any time before the expiration of that period. The validity of the bid can be extended further for a period of 90 days.
2. Unless and until a formal Contract is prepared and executed, this Bid, together with your written acceptance thereof, shall constitute a binding Contract between us.
3. We understand that you are not bound to accept the lowest of any bid you may receive, and that you will not defray any expense incurred by us in bidding.

Date this---------------------day of ----------------- 202...

Signature ---------------------- in the capacity of ----------------------------------------------

Duly authorized to sign Bid for and on behalf of -----------------------------------------

(IN BLOCK CAPITAL) -----------------------------------------------

Address -----------------------------------------------------------------

Facsimile number --------------------------------------------------

Telephone Number -----------------------------------------------

Email id. ---------------------------------------------------------------

WITNESS ---------------------------------------------------------------

Address ---------------------------------------------------------------

Occupation ---------------------------------------------------------

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Attachment 2** | | |
|  | **SUMMARY OF BID PRICE** | | |
|  |  | **Total Value** | **Remarks** |
| **I** | **SUPPLY OF THE EQUIPMENT** |  |  |
|  |  |  |  |
| 1) | For goods supplied from abroad (In Bid-Currency) |  |  |
| a | FOB price for Package |  |  |
| b | Freight |  |  |
| c | Insurance upto port of dis-embarkment |  |  |
|  | **Price at port of dis-embarkment (bid currency) (1a + 1b + 1c )** |  |  |
|  |  |  |  |
| 2) | Local Costs for goods supplied from abroad |  |  |
| a | Port handling and clearance charges. |  |  |
| b | Transportation cost from Port of dis-embarkment to Sites |  |  |
| c | Insurance from Port of dis-embarkment up to handing over |  |  |
| d | Installation and commissioning |  |  |
| e | Applicable taxes |  |  |
|  | **Subtotal (2a + 2b + 2c + 2d + 2e)** |  |  |
|  |  |  |  |
| 3) | For the Goods Supplied from India |  |  |
|  |  |  |  |
| a | The price of the Equipment quoted ex-works, ex-factory, ex-warehouse, ex-showroom, or off-the-shelf including all customs duties and sales and other taxes already paid or payable on the components and raw material used in the manufacture or assembly of the Equipment quoted ex-works or ex-factory. |  |  |
| b | Price for handling and inland transportation, insurance up to handing over the equipment at Site and other local costs upto delivery of the Equipment to each Site. |  |  |
| c | Installation and commissioning |  |  |
| d | Price of other incidental cost, if any. Then the Bidder shall specify the same. |  |  |
| e | Applicable taxes |  |  |
|  | **Sub total (3a + 3b + 3c + 3d + 3e)** |  |  |
| 4) | Other incidental costs if Any |  |  |
| a | If any (such as Indian agents Commission) in INR |  |  |
| b | Any Incidental cost |  |  |
| c | Applicable taxes |  |  |
|  | **Subtotal (4a + 4b + 4c)** |  |  |
|  |  |  |  |
|  | **TOTAL FOR SUPPLY (1 + 2 + 3 + 4)** |  |  |
|  |  |  |  |
| **II** | Total O&M cost for five years for all the **04 CAAQMS** as indicated in Attachment 3A |  |  |
| **1** | Total O&M cost |  |  |
| **2** | Applicable taxes |  |  |
|  | **II Subtotal (1+2)** |  |  |
|  |  |  |  |
| **III** | **COST OF TRAINING** (bid currency) |  |  |
| **1** | **Cost of Traning** |  |  |
| **2** | Applicable taxes |  |  |
|  | **III Subtotal (1+2)** |  |  |
|  |  |  |  |
| **GRAND TOTAL CONTRACT PRICE (BID CURRENCY/INR) (I + II + III)** | |  |  |
| **a** | **Security Cabin with WC** |  |  |
| i | Cost of Supply, Installation and Comissioning |  |  |
| ii | Applicable Tax |  |  |
|  | **Total ( i+ ii)** |  |  |
| **IMPORTANT NOTE:** | | | |
| 1 | All the Government Taxes are remburseable at actual (extra) by the board (owner). | | |
| 2 | Selection of instrument/equipment and its peripherals have to be done using specifications as provided by PPCB along with the Bid Document. | | |

3. The instrument/ equipment and peripherals should be of latest model with evidential Support.

4. The cost of O&M of CAAQM Stations also includes manpower for data center at PPCB Head Office & concerned Regional offices for the total contract period of 05 Years).

5. Payment will be made only as “O&M of CAAQM Station” for 05 years on quarterly (3 months) basis.

6. Lowest bidder (L1) to be decided on the average cost quoted for Supply, Installation, Commission plus cost of O&M for 05 years.

7. Number of stations proposed in the State can be increased or decreased as per the decision of the Chairman, Punjab Pollution Control Board, during the Bidding process.

8. Final Supply Order of the selected bidder and O&M may also be used for placing Repeat order by any PPCB office at the same rates and terms.

9. Indian Agent‘s Commission shall be paid in Indian Rupees only. Market exchange rate ruling on the date of award in accordance with clause of Instructions to Bidder will be applicable for this purpose.

**Attachment 3**

**BID PRICE BREAKUP FOR EQUIPMENT**

**(CIF) PRICE**



|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 14 | 2x2 Ton capacity split Air Conditioner with voltage stabilizer |  |  |  |  |  |  |
| 15 | 1 Ton capacity split Air Conditioner with voltage stabilizer Single Phase 10 kVA UPS, 1 Hour, backup |  |  |  |  |  |  |
| 16 | Single Phase 5 kVA UPS, 2 Hrs. backup |  |  |  |  |  |  |
| 17 | Display Board Data Transmission Device - One for Display Board near to CAAQM stations Display Board Data Transmission Device - another for data display at the PPCB display board\* or any other site identified by the Board |  |  |  |  |  |  |
| 18 | Day & Night Visible Data Display Board. One near to CAAQM Stations and another for data display at the PPCB display board\* or any other site identified by the Board |  |  |  |  |  |  |
| 19 | RCC Foundation,pillars and miscellaneous works including civil and electrical |  |  |  |  |  |  |

**Note: 1. Quantity of Items should be in accordance with the no. of stations.**

**2. International Currencies like AUS $, CAD $, US $, Y, Euro, UK Pound are acceptable.**

**3. The bidder should quote the items strictly in any one of the above mentioned foreign currencies for all imported Items and INR is acceptable for material having Indian origin/ supply**

**Attachment 3A**

**BID PRICE BREAKUP FOR O&M OF CAAQMS FOR FIVE YEARS**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Attachment 3A** | | | | | | | | | | |
| **BID PRICE BREAKUP FOR O&M OF CAAQMS FOR FIVE YEARS** | | | | | | | | | | |
| **S. No.** | **Year of O&M** | **Comprehensive O&M ( Service Charges + Spares and Consumable Charges) excluding Taxes** | **Service charges in Rs.** | | | | **Spares and Consumable** | | | |
| **Service charges** | **Tax %** | **Tax Amount** | **Amount** | **Charges** | **Tax %** | **Tax Amount** | **Total Amount** |
| 1 | 1st Year |  |  |  |  |  |  | | | |
| 2 | 2nd Year |  |  |  |  |  |  | | | |
| 3 | 3rd Year |  |  |  |  |  |  | | | |
| 4 | 4th Year |  |  |  |  |  |  | | | |
| 5 | 5th Year |  |  |  |  |  |  | | | |
| Total | |  |  |  |  |  |  | | | |
|  | | | | | | | | | | |
| (A) | % Tax as applicable on the date of bidding | | | | | | | | | |
| (B) | Incidental charges like Electricity and Telephone would be as on actual reimbursed on submission of bill. | | | | | | | | | |
| (C) | Government taxes shall be payable (only on the service portion of O&M cost only) (excluding supply of spares for maintenance & overhauling). | | | | | | | | | |
| (D) | Cost of material including spares & consumables for operation & maintenance shall be inclusive of all taxes & duties. | | | | | | | | | |
| Note: | | | | | | | | | | |
| 1 | Health of the Stations should be sound for the entire period (05 years) so that the contract can be further renewed on mutual agreement. | | | | | | | | | |
| 2 | All the statutory taxes & duties as applicable in the State of India i.e. Duties and Taxes, as applicable will be paid as actual by the Vendor for simplification. However, these taxes will be reimbursed by the Board on production/submission of original bills. | | | | | | | | | |
| **Additional Information** | | | | | | | | | | |
|  | | | | | **No. of Person Deployed** | | | | | **Cost in Rs.** |
| **1** | **Deatil of MANPOWER deployed per city during O&M period (Technical Manpower)** | | | |  | | | | |  |
| **2** | **Deatil of Security gaurds per city per station during O&M period** | | | |  | | | | |  |
| **3** | **Additional Technical Manpower during O&M period for central server** | | | |  | | | | |  |

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **ATTACHMENT 3 (B)** | | | | | | | | | | | | |
| **Name and Address of the Bidder** | | | | | | | | | | | | |
| **BID PRICE BREAKUP FOR INSTRUMENTS, EQUIPMENT AND FACILITIES** | | | | | | | | | | | | |
| **S.No** | **Item/Analyzer name** | **Manufacturer** | **Country of origin** | **Certificate / Approval / Rating** | **Model** | **Quantity in nos./Set** | | **Unit price (BID CURRENCY)** | | **TOTAL price (BID CURRENCY)** | |
|  |  |  |  |  |  |  | |  | | **INR ₹** | |
| 1 | Continuous ambient Co Analyzer |  |  |  |  | 3 | |  | |  | |
| 2 | Continuous ambient So2 Analyzer |  |  |  |  | 3 | |  | |  | |
| 3 | Continuous ambient No-No2-Nox Analyzer |  |  |  |  | 3 | |  | |  | |
| 4 | Continuous ambient O3 Analyzer |  |  |  |  | 3 | |  | |  | |
| 5 | Continuous ambient NH3 Analyzer |  |  |  |  | 3 | |  | |  | |
| 6 | PM 10 Monitor |  |  |  |  | 3 | |  | |  | |
| i | Sampling Hood with heater and temperature controler |  |  |  |  | 3 | |
| ii | Calibration foil PM10 |  |  |  |  | 3 | |
| 7 | PM2.5 monitor with calibration fail+ Smart hood |  |  |  |  | 3 | |  | |  | |
| i | Sampling Hood with heater and temperature controler and RH sensor |  |  |  |  | 3 | |
| ii | Calibration foil PM2.5 |  |  |  |  | 3 | |
| 8 | BTX analyzer |  |  |  |  | 3 | |  | |  | |
| i | N2 Cylinder with Grade 1 N2 |  |  |  |  | 6 | |  | |  | |
| ii | Duel stage stainless steel regulator with SS diaphragm |  |  |  |  | 3 | |  | |  | |
| 9 | Multi-calibration system for gaseous monitors comprising of gas supply / generation and automated calibration permeation tube and permieation bench as per tender technical specification |  |  |  |  | 3 set | |  | |  | |
| i | 10 Ltr. Capacity Aluminium calibration gas cylinder with NIST traceable SO2 calibration gas and two stage stainless steel regulator with SS diaphragm. |  |  |  |  | 3 | |  | |  | |
| ii | 10 Ltr Capacity Aluminium calibration gas cylinder with NIST traceable NO2 calibration gas and two stage stainless steel regulator with SS diaphragm. |  |  |  |  | 3 | |
| iii | 10 Ltr. Capacity Aluminium calibration gas cylinder with NIST traceable NH3 calibration gas and two stage stainless steel regulator with SS diaphragm. |  |  |  |  | 3 | |
| iv | 10 Ltr Capacity Aluminium calibration gas cylinder with NIST traceable VOC calibration gas and two stage stainless steel regulator with SS diaphragm. |  |  |  |  | 3 | |
| v | 10 Ltr Capacity Aluminium calibration gas cylinder with NIST traceable CO calibration gas and two stage stainless steel regulator with SS diaphragm. |  |  |  |  | 3 | |
| vi | Permeation tube for SO2, NO2 & VOC (Benzene) |  |  |  |  | 3 | |
| 10 | Meteorological Instrumentation Comprising Wind direction, Wind speed, Ambient temperature,Relative humidity, Solar Radiation And Rainfall mountedon tele scoping crankup meteorological Mast. |  |  |  |  | 3 set | |  | |  | |
| i | Wind Speed Sensor |  |  |  |  | 3 | |  | |  | |
| ii | Wind Direction Sensor |  |  |  |  | 3 | |
| iii | Ambient Temperature |  |  |  |  | 3 | |
| iv | Relative Humidity |  |  |  |  | 3 | |
| v | Solar Radiation |  |  |  |  | 3 | |
| vi | Rain fall sensor |  |  |  |  | 3 | |
| vii | Telescopic crankup meterological mast with guy ropes |  |  |  |  | 3 | |
| 11 | 1 No. Computer system alongwith one Laser Printer and DAS software at the monitoringstation for data acquisition / Data display Board / transfer and System integration,telephone,Modem. |  |  |  |  | 3 | |  | |  | |
| i | Computer System alongwith laser printer as per tender specificataion |  |  |  |  | 3 | |  | |  | |
| ii | Data Acquisition Software |  |  |  |  | 3 | |
| 12 | A Set of a.Central Rack Server (with rack) b. Central software 1 nos. C.UPS 5KVA 1 nos d.Table/chair 1 nos. |  |  |  |  | 1 set | |  | |  | |
| i | Horizontal server as per specification of tender |  |  |  |  | 1 | |  | |  | |
| ii | Server Rack |  |  |  |  | 1 | |
| iii | UPS 5 KVA with 1 Hr Backup |  |  |  |  | 1 | |
| iv | Table & Chair |  |  |  |  | 1 | |
| v | Air conditioner for server room 1.5 Ton Inverter split |  |  |  |  | 1 | |
| 13 | Housing / Container for Continuous Automatic Monitoring Stations with Canopy at all four side of and Sampling line,Internal flitting ,Instruments racks, Electrical fittings and Gasline fittings,Tools (electrical and mechanical),Data display system,Recommended spares, chemical earthing copper,Lightning srrestor, cylinder cage etc. |  |  |  |  | 3 set | |  | |  | |
| i | Chemical Earthing Copper |  |  |  |  | 6 | |  | |  | |
| ii | Lightening arrestor with Chemical Earthing Copper separate |  |  |  |  | 3 | |
| iii | Solar Inverter for outdoor light with timer with battery rack |  |  |  |  | 3 | |
| iv | Automoatic light switching ON/OFF facility |  |  |  |  | 3 | |
| v | Table & Chair |  |  |  |  | 3 set | |
| vi | Cupboard |  |  |  |  | 3 | |
| vii | Gas Sampling hood |  |  |  |  | 3 | |
| viii | 19" rack - set of three with facility of measurement of rack temperature and connected to DAS |  |  |  |  | 3 set | |
| ix | Fire Extinguisher |  |  |  |  | 6 | |
| x | Exhaust Fan |  |  |  |  | 3 | |
| xi | Emergency switch |  |  |  |  | 6 | |
| xii | Power distribution Panel |  |  |  |  | 3 | |
| 14 | 2x2 Ton capacity split Air Conditioner with voltage stabilizer |  |  |  |  | 6 | |  | |  | |
| 15 | 1 Ton capacity split Air Conditioner with voltage stabilizer Single |  |  |  |  | 3 | |  | |  | |
| 16 | Single Phase 5 kVA UPS, 2 Hrs.backup with battery stand (quantitiy of batteries and specification) |  |  |  |  | 3 | |  | |  | |
| 17 | Three phase input single phase output 10KVA UPS - 1 Hr backup with battery stand suitbale to run Airconditioner with changeover from power to UPS in case of power breakdown and vice versa. |  |  |  |  | 3 | |  | |  | |
| 18 | Display Board Data Transmission Each station 2 no Device - One for Display Board near to CAAQM stations Display Board Data Transmission Device - another for data display at the SPCB display board\* or any other siteidentified by the Board |  |  |  |  | 6 | |  | |  | |
| 19 | Day & Night Visible Data Display Board. One near to CAAQM Stations and another for data display at the SPCB display board\* or any other site identified by the Board |  |  |  |  | 6 | |  | |  | |
| i | Display mounting structure either on rooftop or on ground level with provision to keep data transmission device and UPS safely |  |  |  |  | 6 | |  | |  | |
| ii | UPS or Servo stabilizer as per requirement |  |  |  |  | 6 | |
| iii | Canopy on display |  |  |  |  | 6 | |
| 20 | RCC Foundation, pillars and miscellaneous works including civil and electrical |  |  |  |  | 3 | |  | |  | |
| i | New Power connection at Station |  |  |  |  | 3 | |
| ii | New Power connection at Display |  |  |  |  | 6 | |
| iii | New Lease line or broad band connection at CAAQMS |  |  |  |  | 3 | |
| iv | New Lease line or broad band connection at Display |  |  |  |  | 3 | |
| v | New Lease line or broad band connection at RO Office |  |  |  |  | 3 | |
| vi | New Lease line or broad band connection at Central Station |  |  |  |  | 3 | |
|  | **Note : Space for Station, and separate room / cabin for Server at HO is Owner's scope** | | | | | |  | |  | |  | |

**VOLUME I**

**SECTION V**

**GENERAL CONDITIONS**

**OF CONTRACT**

**SECTION V**

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**GENERAL CONDITIONS OF CONTRACT**

These conditions encompass all the Works to be executed and completed by the Contractor for the Project and as further defined herein.

**1.0** **DEFINITION**

Unless the context of the General and-Special Conditions of Contract otherwise requires, the following terms wherever in the General and Special Conditions of Contract shall have the meaning defined hereunder.

Words imparting the singular shall also include the plural and vice versa where the context requires. Whether the words and phrases defined in this Clause are capitalized or not in the Contract shall not affect their meaning.

1.1 **“**The **Project”** or “The Works” means supply, installation & commissioning of equipment’s for 04 Continuous Ambient Air Quality Monitoring Stations (CAAQMS) and their Operation & Maintenance at defined locations under the supervision and control of **Punjab Pollution Control Board.**

1.2 **“**The **Contract”** means the written agreement to be concluded between the Board and the Contractor and includes terms and conditions stipulated on the Bidding Documents and any other descriptions annexed thereto which form an integral part of the agreement to be provided by the Board.

1.3 **“**The **Contract Price”** means the price payable to the Contractor under the Contract for the full and proper performance of its contractual obligations for the Works.

1.4 **“**The **Equipment”** means all kind of materials, Machinery, Components, apparatus, articles and instruments for the Project to be provided by the Contractor to the, Board under the Contract.

1.5 **“GCC”** means the General Conditions of Contract contained in this Section.

1.6 **“SCC”** means the Special Conditions of Contract in Section VI of this Volume.

1.7 **“S/W”** means the Scope of Works in Section II of this Volume.

1.8 **“**The **Contractor”** means the firm supplying the Equipment and-performing the Works in connection with the Project under the Contract

and includes his personal representatives, successors and authorized assignees.

1.9 “The **Manufacturers”** means the firms, which produce the Equipment to be furnished by the Contractor under the Contract with the Board.

1.10 **“**The **Specifications”** means the specifications of the Works to be performed by the Contractor in conformity with those specified in both the Technical Specifications of Volume II and all other related documents in the Bidding Documents, and modifications thereof or additions thereto as may from time to time be made, and approved in writing by the Board through the Consultant in case of prior to the Contract and agreed upon by both the Board and the Contractor after the Contract.

1.11 “The **Sites**” means CAAQMS’s as specified in Clause 1 of Scope of Works (Section – IIof this Volume 1).

**2.0** **INTENT OF CONTRACT**

2.1 The intent and spirit of the Contract is to provide all the details for the Works herein specified to be fully completed within the duration of the Contract.

2.2 It is hereby understood that the Contractor, in accepting the Contract, agrees to furnish any and everything necessary for such intent notwithstanding any omission in the Contract.

All matters omitted from the Contract which may reasonably be inferred to be obviously necessary for the efficient and stable completion of the Works shall be deemed to be included in the Contract and the Contractor shall be held responsible for any errors or losses which the Contractor may make due to such omissions as above.

**3.0** **PERFORMANCE OF WORKS**

Unless otherwise provided for, the Works shall be performed by the Contractor in compliance with S/W, GCC, SCC and the Specifications in this Bidding Documents issued by the Board and Contract to be concluded between the Board and the Contractor.

Unless otherwise agreed or stated, the Contractor shall bear all the cost and take all the responsibilities for the performance of all the Works.

**4.0** **USE OF CONTRACT DOCUMENTS AND INFORMATION**

4.1 The Contractor shall not, without the Board’s prior written consent, disclose the Contract, or any provision thereof, or any specification, plan, drawing, pattern, sample, or information furnished by or on behalf of the Board, Consultant and their authorized personnel and body in connection therewith, to any person other than a person employed by the Contractor in the performance of the Contract. Disclosure to any such employed person shall be made in confidence and shall extend only so far as may be necessary for purposes of such performance.

4.2 The Contractor shall not, without the Board’s prior written consent, make use of any documents or information enumerated here above except for purposes of performing the Contract.

4.3 Any documents other than the Contract itself, enumerated in here above shall remain the property of the Board and shall be returned to the Board on completion of the Contractor’s performance under the Contract if so required by the Board.

**5.0** **LOCATION**

Stations will be installed in Dera Baba Nanak (01 Nos.), Dera Bassi (01 Nos.), Nangal (01 Nos.) and. Barnala (01 Nos.) The location detail will be made available to the successful bidders while placing purchase orders.

**6.0** **LANGUAGE AND CALENDAR**

6.1 **Language**

All documents and correspondence related to the Contract shall be made in English.

6.2 **Calendar**

All dates, months, years and terms referred in the Contract shall relate with the Gregorian Calendar, unless otherwise mentioned specifically.

**7.0** **SITE CONDITION**

7.1 **Site Condition**

The Contractor shall study the existing Site Conditions, referring to the Bidding Documents carefully in order to familiarize themselves with the Works. The Contractor should ascertain all particulars of the location and Site conditions at their own expenses.

7.2 **Access to Site**

The Board will give the Contractor access to the Sites in order to perform the Works during the period of validity of the Contract unless otherwise provided.

**8.0** **COUNTRY OF ORIGIN**

8.1 All the Equipment supplied under the Contract shall have their origin in the eligible countries.

8.2 For the purposes of this Clause, “Origin” means the place where the Equipment were produced or manufactured. The Equipment is produced or manufactured when, through manufacturing, processing, or substantial and major assembly of components, a commercially recognized new product results that is substantially different in basic characteristics in purpose or utility from its components.

8.3 The origin of Equipment is distinct from the nationality of the Contractor.

**9.0** **SPECIFICATION OF EQUIPMENT**

9.1 **Equipment**

The Contractor shall supply all the Equipment specified in the package quoted as per the package wise Equipment List of Attachment 1 of S/W.

All the Equipment to be supplied under the Contract shall be new and unused.

9.2 **Specification of Equipment**

The performance, materials, duty, workmanship, operating conditions and design conditions for the Equipment shall meet and comply with the Specifications.

The Specifications indicate the principal and minimum technical requirements for each equipment. The details of the Equipment shall be fully examined and suitably selected through the detailed engineering and design without sacrifice in quality of serviceability of the Equipment.

The figures of dimension and weight shown in the Specifications are indicatively presented as approximate figures. These figures may not necessarily and exactly be applied for the selection of the Equipment, but the Contractors shall meet the principal and minimum requirements shown in the Specifications. Any Bidder offering better specification than the minimum prescribed shall be considered as technically qualified.

**10.** **CODE AND STANDARD**

10.1 **Code and Standard**

The Equipment and the Works shall conform to the approved and authorized codes and standards of the origin country, the following standards wherever applicable and Indian Standard which are in force at the moment of the installation.

* Japanese Industrial Standard (JIS)
* Environmental Protection Agency of United States (U.S EPA) Standard
* International Organization for Standard (ISO)
* British Standard (BS)
* TUV Germany
* MCERTS- SIRA certification U.K Environment Agency

Other internationally prevailing standards are accepted for the Equipment, unless otherwise indicated.

Even if some codes and standards are designated in the Specifications, the other codes and standards not shown therein are also applicable instead of the designated ones as far as they are equivalent to such designated codes and standards and meet the requirement thereof.

10.2 **Metric System**

All dimensions and performance of the Equipment shall be stated in metric system, unless otherwise specified in the Specifications.

**11.0 ELECTRICAL RATINGS**

11.1 **Electrical Rating**

The Equipment shall conform to the following ratings and standards wherever applicable:

1. All the electrically operated equipment specified herein shall be single phase, 230 Volts 10 volts AC and 50 Hz 3% unless otherwise specified in the Specifications.

1. Electrical plugs for the Equipment shall conform to local regulations and standards.

11.2 **Precaution against Voltage Fluctuation**

Adequate automatic voltage regulator for the Equipment shall be arranged by the Contractor wherever indicated in the Specifications. The Contractor shall pay due attention to that electrical voltage fluctuation exerts a serious influence and damage upon functioning of the equipment.

**12.0 NAME PLATE**

Nameplate shall be affixed on a suitable place of the Equipment in accordance with the provision of SCC.

**13.0 PACKING AND MARKING**

13.1 **Packing**

1. Transportation by air cargo

The Contractor shall pack and transport the Equipment in the double carton, approved by airline and deliver separately to the designated Site in complete condition.

1. Transportation by vessel

The Equipment shall be packed and transported for seaworthy shipment in such a manner that they are carried to the Sites in complete condition. The packages shall be made shockproof, waterproof, moisture proof and any other protection against rough handling, exposure to extreme temperature, salt, precipitation, open storage and other severe tropical conditions during transit to each final Site. These Equipment’s shall be transported by container vessel and packed separately for the designated Site.

13.2 **Marking**

The outside of the package shall be marked in accordance with SCC in such a manner that they are clearly visible, protected against loss and resistance to external influences.

13.3**Packing List**

Contents of each package and/or the Equipment shall be itemized on a detailed list showing the exact weight, and extreme outside dimensions of length, width and height of each package and/or the Equipment. One copy of the detailed packing list indicating name of components, assembly number and quantity which corresponds to those of the Equipment in each package shall be enclosed in each package.

Enclosed in one package, there shall also be a master packing list summarizing and identifying each individual package. Packing list shall be placed in a waterproof cover and secured against any external influence of the package.

**14.0 SHIPMENT**

14.1 **Shipment**

Shipment of the equipment from foreign origin shall be made as specified in SCC.

14.2 **Shipping Documents**

Promptly after shipment of equipment of foreign origin, the Contractor shall airmail the shipping documents to the Board in accordance with SCC.

14.3 **Unloading and Custom Clearance**

The Contractor shall arrange the clearing agent for unloading, customs clearance and storage of the equipment from the Foreign Origin, documentation and all the other procedures.

The Board will agree to assist the Contractor wherever required in obtaining clearance of the Equipment through the customs and provide exemption certificate, if required.

14.4 **Inland Transportation**

The Contractor shall be fully responsible for the delivery of all the Equipment to the Sites.

The Contractor shall arrange at his option and cost transportation from the port of entry to each Site for the equipment of foreign origin.

Transportation of Radioactive material if any shall be carried out by the contractor and the contractor will obtain all required statutory clearances for the same.

14.5 **Handling and Storage**

The Contractor shall protect the Equipment from any damage and avoid overloading. Particular attention shall be given to the perishable Equipment and those which must be kept dry, cool or from exposure to direct sunshine and moisture.

In case a part of the Board’s facilities is necessary to be occupied by the Contractor for temporary storage or installation use, the Contractor shall obtain the written approval from the Board for temporary occupation and protect facilities against any damages. Charges payable for this facility shall be fixed by the Board.

**15.0 PROJECTION AND SAFETY**

The Contractor shall be totally responsible for all the reasonable precautions against fire in respect of the Works, temporary works, offices, storage yards and other places and things connected therewith.

The Contractor shall comply with all rules, regulations and orders which have been made by the Government of India, the Board or any other competent authority and the contractor shall provide sufficient fire-fighting protection in respect of the safety of the property and personnel of the Board.

**16.0 WORKS SCHEDULE**

The time schedule for the Works to be carried out by the Contractor is specified in SCC.

The Contractor shall complete the Works accordingly.

**17.0 PROJECT FORMATION**

17.1 **Board**

**The authorized personnel of the Punjab Pollution Control Board for the Project who is responsible for any coordination with the Contractor is:**

**THE MEMBER SECRETARY or AUTHORIZED REPRESENTATIVE**

**Punjab Pollution Control Board,**

**Vatavaran Bhawan, Nabha Road, Patiala**

Any correspondence to or authorization from the Board shall be made with the Member Secretary here above.

**18.0 WARRANTY / O & M CONTRACT**

18.1 All the CAAQMS’s shall be under O&M Contract from the date of commissioning of the CAAQMS’s. The details terms and conditions and scope of work during O&M Contract period shall be as specified in the Scope of Work, Section – II of this document.

18.2 However the Contractor shall warrant to the Board that the Equipment to be supplied under the Contract is new, unused, of the most recent or current models and those they incorporate all recent improvements in design and materials unless provided otherwise in the Contract. This warranty includes all spare parts and services to keep the instruments and equipment in operating condition. In case O & M is not awarded / terminated the equipment shall remain warranted for 3 years from the date of commissioning.

The Contractor shall further warrant to the Board that the Equipment complies strictly with the Specifications and has no defect, arising from design, materials, or workmanship or from any act or omission of the Contractor that may develop under normal use of the supplied Equipment in the conditions prevailing to the final Sites.

**18.3 Period of O&M Contract**

This O&M Contract shall remain operative for the period specified in SCC after the successful installation & commissioning of the CAAQMS by the Contractor.

18.4 **In Case of Faulty Equipment**

If any part of the Equipment breakdowns or fails due to faulty of improper design, materials, workmanship, manufacture, Voltage fluctuation fabrications or instructions, or fails to meet the requirements of the Specifications, then the Contractor or his O&M partner shall promptly notify the manufacturer in writing of any claims arising under this clause.

Contractor or his O&M partner shall ensure that within the period specified in Scope of Work for O&M Contract in Section – II of the Volume Iof the document and with all reasonable speed, the repair of replacement of the defective Equipment or improper parts thereof is carried out at the Contractor’s expenses.

In the event that any part of the Equipment becomes defective due to no fault of the Contractor, such as misuse and negligence, the Contractor will be indemnified by the Board in respect of repair thereof.

18.5 **Manufacturer’s Warranty**

The contractor must take into account any manufacture’s standard Warranty on the equipment supplied **before quoting for O&M cost for the years** for which such Warranty is applicable.

**19.0 INSURANCE**

The Equipment supplied under the Contract shall be fully insured (Comprehensive) in currency acceptable as per the existing Law of India against loss or damage incidental of manufacture or acquisition, transportation, storage, shipment, delivery, installation and training involved with the Works naming the Board as the beneficiary, in the manner specified in the SCC, until issuance of taking over certificate.

**20.0 INSTALLATION**

20.1 All the Equipment shall be installed and brought into suitable condition for operation by the Contractor at the Sites designated by the Board. The Contractor shall make all the necessary and proper adjustments and arrangements, including, but not restricted to, the utility supplies and connections, foundation and erection works specified in Clause 3 of S/W in order to install the Equipment in adequate conditions for operation.

All matters omitted from this Clause which may reasonably be incurred to be obviously necessary for the proper installation and operation of the Equipment shall be deemed to be included in this installation works, and the Contractor shall be held responsible for any errors or defects which the Contractor may make due to such omissions thereof.

20.2 Only the best installation practices are to be applied, and all the installation works must be done to the satisfaction of the Board and the Contractor shall carry out his works in a neat and proper workmanlike manner. The installation shall be planned and carried out in no way to damage installation materials and the Equipment.

20.3 All the installing Equipment, tools, materials, labor, logistics and all the other requirements for installation shall be provided by the Contractor.

20.4 Prior to the establishment of Equipment layout and installation plan, the Contractor shall verify, check and inspect the designs and specific site conditions of monitoring stations and laboratories where the Equipment are to be installed so as to make good arrangement for installation and utility assembly in consultation with the Board.

**21.0 INSPECTION AND TEST**

21.1 The Board shall have the right to inspect and test the Equipment to confirm their conformity to the Specifications without any extra charge to the Board by the Contractor. The Contractor shall notify the Board and the Consultant in writing, in a timely manner (at least 21days in advance), of the schedule of inspections and test.

21.2 The inspections and test shall be conducted on the premises of the Contractor and/or the Manufacturers and the Sites. If conducted on the premises of the Contractor and/or the Manufacturers, all reasonable facilities and assistance, including access to drawings and production data, shall be furnished to the Consultant for the inspection and test at no charge to the Board.

21.3 Should any inspected or tested Equipment fail to conform to the Specifications, the Board may reject the Equipment, and the Contractor shall either replace the rejected Equipment or make alternations necessary to meet the Specifications requirements free of cost to the Board.

21.4 No pre dispatch inspection is envisaged for equipment of foreign origin and contractor shall furnish factory test / inspection reports as furnished

below of the manufacturer along with the dispatch documents. However, the Board reserves the right to appoint at its cost, any inspection agency (other than suggested by contractors) which will be binding on the contractor.

* Performance Test Certificate of all analyzer/ UPS/ 1.2 mm pre-coated GI Sheet of container, NIST traceability for gas Aluminum cylinders / Permeation tube
* Certificate of Traceability
* Verification of System Completeness
* Product Certificate

21.5 For the equipment of Indian origin contractor should submit check list for equipment for approval of PPCB. For container, contractor should take prior approval of the drawing from PPCB. Contractor should notify date of pre-dispatch inspection to the PPCB at least 15 (fifteen) days ahead of inspection.

21.5 The Board’s right to inspect, test and, where necessary, reject the Equipment after the Equipment’s arrival in India shall in no way be limited or waived by reason of the Equipment having been previously inspected, tested and passed by the Board prior to the Equipment’s shipment from the country of origin.

**22.0 TRAINING**

22.1 The Contractor shall provide the Board staff with the training as specified in Clause 10of S/W for the Equipment & Technical Specification.

22.2 The Contractor shall furnish the schedule and program of the training to the Board within 30 days after the notification of award in such a manner that proper training is imparted to Board staff members.

**23.0 COMPLETION**

The Contractor shall complete all the Works by the date as specified in SCC.

23.1 **Taking Over**

Upon successful completion of delivery, installation, inspection and training of the Equipment to and at the designated Sites and O&M of the CAAQMS for the period specified in S.C.C., the Contractor shall Notify the Board in writing that all the Works under the Contract have been completed at least 30 days before expiry of O&M Contract period.

Immediately after completion of O&M Contract period as specified in S.C.C., the Board will take over the stations or make alternate arrangement for their O&M.

**24.0 SUBMISSION OF DOCUMENTS**

The Contractor shall submit the documents specified in SCC to the Board. The Contractor shall prepare all the documents in English.

Besides the documents thereof, the Contractor shall submit the notices, reports, and other documents when deemed necessary, in accordance with the direction of the Board.

**25.0 PAYMENT**

**25.1** **Payment**

The method, terms and conditions of payment to be made to the Contractor under this Contract shall be specified in SCC.

The Contractor’s request(s) for payment for, as appropriate, the Equipment delivered and the Works performed and fulfillment of other obligations stipulated in the Contract shall be made to the Board in writing, accompanied by documents specified in SCC.

**25.2** The payment shall be made promptly by the Board but in no case not later than sixty (60) days after submission of invoice or claim by the contractor.

**25.3** **Currency of Payment**

The currency in which payment is made to the Contractor under this Contract shall be specified in SCC.

**26.0 PRICES**

Prices charged by the Contractor to the Board for the Equipment delivered and the Works performed under the Contract shall not vary from the prices quoted by the Contractor in the Financial Bid.

**27.0 PERFORMANCE SECURITY**

27.1 **Performance Security**

The Contractor within thirty (30) days from the date of notification of award shall furnish a Bank Guarantee from a reputed Scheduled Commercial Bank( As specified in list at Attachment 15 in section III of this Volume 1 ) having license to do business in India to the Board in line with the enclosed from as per Attachment 1Section VI of this Volume 1 towards performance guarantee for an amount equal to ten (10) percent of the total Price under the Contract for faithful and due fulfillment by the Contractor of all obligations under the terms and conditions of the Contract.

**The Contractor shall ensure that Contract Performance Security remains valid at least for 02 years after commissioning of entire system satisfactorily.**

27.2 **Return of Performance Security**

The performance security will be discharged by the Board and returned to the Contractor not later that forty five (45) days after expiry of two years subject to date of completion of the Contractor’s performance obligations under the Contract, including obligations, unless specified otherwise in SCC.

**28.0 ASSIGNMENT**

The Contractor shall not assign in whole or in part, its obligations to perform under this Contract, except with the Board’s prior written consent.

**29.0 SUBCONTRACTORS**

The contractor shall notify the Board in writing of all the Manufacturers awarded under this Contract and any other sub-contractors involved with performance of the Works if not already specified in the Bid. Such notification, in the original Bid or later, shall not relieve the Contractor from any liability or obligation under the Contract.

**30.0 DELAYS IN THE CONTRACTOR’S PERFORMANCE**

30.1 **Delays in the Contractor’s Performance**

Delivery of the Equipment and performance of the Works shall be made by the Contractor in accordance with the time schedule specified in SCC.

30.2 **Notification of Delay**

If at any time during performance of the Contract, the Contractor and/or the Manufacturers should encounter conditions impending timely delivery of the Equipment and performance of the Works, the Contractor shall promptly notify the Board in writing of the fact of the delay, its likely duration and its cause(s). As soon as practicable after receipt of the Contractor’s notice, the Board shall evaluate the situation and may at its discretion extend the Contractor’s time for performance, with or without liquidated damages, in which case the extension shall be ratified by the Board by amendment of the Contract.

30.3 **Liability of Liquidated Damages**

Except as provided under Clause 30.2 of GCC, a delay by the Contractor in the performance of its delivery obligations shall render the Contractor liable to the imposition of liquidated damages pursuant to Clause 31 hereunder, unless an extension of time is agreed upon pursuant to Sub-clause 30.2 here above without the application of liquidated damages.

|  |  |  |
| --- | --- | --- |
| **31.0** | **LIQUIDATED DAMAGES** |  |
|  | if the Contractor fails to perform the Works within the period specified in | |
|  | Clause 11 of SCC, the Board shall, without prejudice to its other | |
|  | remedies under the Contract, deduct from the Contract Price, as | |
|  | liquidated damages, a sum equivalent to the percentage specified in | |
|  | SCC. Once the maximum is reached, the Board may consider | |
|  | Termination of the Contract pursuant to Clause 35 of GCC. | |
| **32.0** | **SUSPENSION OF WORK** |  |
|  | The Contractor shall not suspend the whole or any part of the Works | |
|  | Without notice to the Board in writing. The Contractor thereupon shall | |
|  | do all possible endeavors to reduce any expenses or costs resulting from | |
|  | the suspension. Such suspension shall not nullify the Contract. | |
| **33.0** | **TERMINATION FOR DEFAULT& LIABILITIES** |  |
| 33.1 | **Termination for Default** |  |
|  | The Board, without prejudice to any other remedy for breach of | |
|  | Contract, by written notice of default sent to the Contractor, may | |
|  | terminate this Contract in whole or in part: |  |
|  | |  |

1. If the Contractor fails to perform any or all of the Works within the

Period specified in Clause 11 of SCC, or extension thereof granted by the Board pursuant to Clause 32 of GCC

or

1. If the Contractor fails to perform any other obligations under the Contract.

33.2 **Liability for Excess Cost for Unperformed Work**

In the event the Board terminates the Contract in whole or in part pursuant to Sub-clause 33.1 here above the Board may procure at the risk and cost of the contractor, upon such terms and in such manner as it deems appropriate, the equipment / works similar to those undelivered / unperformed and the **Contractor shall be liable to the Board for any excess costs for such similar equipment / works.** However, the Contractor shall continue performance of the Contract to the extent not terminated.

**34.0 FORCE MAJEURE**

34.1 Notwithstanding the provisions of Clauses 32, 33 and 35 in GCC, the Contractor shall not be liable for forfeiture of its performance security, liquidated damages, or termination for default if and to the extent that its delay in performance or other failure to perform its obligations under the Contract is the result of an event of Force Majeure.

34.2 For the purposes of this Clause, “Force Majeure” means an event beyond the control of the Contractor and not involving the Contractor’s fault or negligence and not foreseeable. Such events may include, but are not restricted to, acts of the Board in its sovereign capacity, wars or revolutions, fires, floods, epidemics, quarantine restrictions, riots, earthquakes and freight embargoes.

34.3 If a Force Majeure situation arises, the Contractor shall promptly notify the Board in writing of such condition and the cause thereof. Unless otherwise directed by the Board in writing, the Contractor shall continue to perform its obligations under the Contract as far as is reasonably practical, and shall seek all reasonable alternative means for performance not prevented by the Force Majeure event.

**35.0 TERMINATION FOR INSOLVENCY**

The Board at any time terminates the Contract by giving written notice to the Contractor if the Contractor becomes bankrupt or otherwise

insolvent. In this event, termination will be without compensation to the Contractor, provided that such, termination will not prejudice or affect any right of action or remedy which has accrued or will accrue thereafter to the Board.

**36.0 RESOLUTION OF DISPUTES**

36.1 **Settlement of Disputes**

Any dispute(s) or difference(s) arising out of or in connection with the Contract and Works of any nature assigned under the same (whether during the progress of work or after their completion) determination, abandonment or breach of contract shall, to the extent possible in the first instance be resolved amicably between the Contractor and the Owner’s Engineer.

If, after thirty (30) days, the parties have failed to resolve their dispute or difference by such mutual consultation, then either the Purchaser or the Contractor may give notice to the other party of its intention to commence arbitration, as hereinafter provided, as to the matter in dispute, and no arbitration in respect of this matter may be commenced unless such notice is given.

Any dispute or difference in respect of which a notice of intention to commence arbitration has been given in accordance with this Clause shall be finally settled by arbitration. Arbitration may be commenced prior to or after delivery of the Goods under the Contract.

In the case of dispute or difference arising between the Purchaser and a Domestic Contractor relating to any matter arising out of or connected with this agreement, such disputes or difference shall be settled in accordance with the Arbitration and Conciliation Act, 1996. The arbitral tribunal shall consist of (3) three arbitrators one each to be appointed by the Purchaser and the Contractor. The third arbitrator shall be chosen by the 2 (two) Arbitrators so appointed by the parties and shall act as Presiding arbitrator. In case of failure of the two arbitrator appointed by the parties to reach upon a consensus within a period of 30 days from the appointment of the arbitrator appointed subsequently, the Presiding Arbitrator shall be appointed by the Chairman, Punjab Pollution Control Board, Vatavaran Bhawan, Nabha Road, Patiala.

In case of a dispute with a Foreign Contractor, the dispute shall be settled in accordance with provision of UNCITRL (United Nations Commission on International Trade Law) Arbitration Rules. The Arbitral Tribunal shall consist of three Arbitrators one each to be appointed by the Purchaser and the Contractor. The third Arbitrator shall be chosen by the two Arbitrators so appointed by the Parties, and shall act as presiding arbitrator. In case failure of two arbitrators appointed by the parties to reach upon a consensus within a period of 30 days from the appointment of the arbitrator appointed subsequently, the Presiding Arbitrator shall be appointed by the Chairman, Central Pollution Control Board, Delhi, India.

If one of the parties fails to appoint its arbitrator in pursuance of Sub-Clause (a) and (b) above, within thirty days after receipt of the notice of the appointment of its arbitrator by the other party, then the Presiding Arbitrator shall be nominated by Chairman, Central Pollution Control Board, Delhi, India. A certified copy of the order of the Chairman, Central Pollution Control Board, Delhi, India, making such an appointment shall be furnished to each of the parties.

Arbitration proceedings shall be held at New Delhi, India, and the language of the arbitration proceedings and that of documents and communications between the parties shall be English.

The decision of the majority of arbitrators shall be final and binding upon both parties. The cost and expenses of Arbitration proceedings will be paid as determined by the arbitral tribunal. However, the expenses incurred by each party in connection with the preparation, presentation etc. of its proceedings as also the fees and expenses paid to the arbitrator appointed by such party or on its behalf shall be borne by each party itself.

Where the value of the contract is Rs. 10 million and below, the disputes or differences arising shall be referred to the Sole Arbitrator. The sole Arbitrator should be appointed by Chairman, Punjab Pollution Control Board, Vatavaran Bhawan, Nabha Road, Patiala and decision of the sole arbitrator shall be final and binding. It will not be an objection to any such appointment that the arbitrator is the Government Servant and had any interest in the Board or the Contract entered into directly or indirectly. In all cases, the arbitrator shall state their decision in writing; the arbitrator shall give reasons for award.

**37.0 TAXES AND DUTIES**

1. Concessional Customs Duty (presently) shall be applicable on the equipment being imported by Punjab Pollution Control Board. Necessary exemption certificate shall be issued by PPCB and applicable Custom Duty shall be paid by PPCB.
2. The issue especially on GST and all other prevailing taxes and incidental charges from the port/Airport to destination places where to be delivered are to be borne by the vendor. Regarding custom and excise duty exemption certificate along with road permit certificate (wherever it is required) will be issued by Punjab Pollution Control Board according to the prevailing rules & provisions. The incidental expenses towards sending the instruments to the designated location site mentioned in, such as arranging transport, shifting charges, freight, insurance premium up to handling over the Equipment at sites, inland transportation and storage labor including charges to the custom clearing agent and custom duty etc. to be borne by the supplier/their representative should be responsible for the safety of the instrument during the transit from airports to the designated locations. Further, all charges as per status applicable for incidental services like installation, commissioning and training & O&M service etc. shall be payable by the Vendor.

**38.0 INJURY AND DAMAGE**

38.1 **Injury or Death of Persons**

The Contractor shall be liable for and shall indemnify the Board against any liability, loss claim or proceedings whatsoever arising under any statue or law in respect of personal injury or death or any disability caused by the carrying out of the Works unless due to any act or neglect of the Board, or of any person for whom the Board is responsible.

Without prejudice to the Contractor’s liability to indemnify the Board, the Contractor shall maintain and cause any manufacturers and subcontractors to maintain such insurance as necessary to cover the liability of the Contractor or, as the case may be, of such Manufacturers and subcontractors, in respect of personal injuries of deaths arising out of or in the course of or caused by the carrying out of the Works.

38.2 **Damage to Property**

The Contractor shall liable for and indemnify the Board against and insure and cause any Manufacturers and subcontractors to insure against any expense, liability, loss claim or proceedings in respect of any damage whatsoever to any real or personal property for any one occurrence in so far as such damage arises out of or in the course of or by reason of the carrying out of the Works and is due to any negligence, omission or default of the Contractor or any person for whom the Contractor is responsible or any Manufacturers and subcontractors or person for whom the Manufacturers and subcontractors are responsible.

**39.0 ROYALTY AND PATENTS**

39.1 The Contractor shall pay all royalties and licenses fees for the use of any patented item, whether it may be an invention, method, arrangement, article, process or appliance used in connection with the performance of the Contract. The Contractor shall indemnify and save harmless the Board against any and all costs, damages and expenses of any nature or kind whatsoever which may arise out of or result from a claim by any person, firm or corporation that the manufacture, purchase, use of sale of any of the inventions, methods, arrangements, articles processes or appliances used in connection with the performance of this Contract infringes any patent of such other rights. The Contractor shall, at the request of the Board, defend the Board against any suit brought to enforce any such claim at the Contractors expense.

39.2 In case any such patented item used on or in conjunction with the Works is in suit held to constitute and infringement of its use enjoined, the Contractor shall either secure for the Board the right to continue using the said item by suspension of the enjoinment, by procuring for the Board a license or otherwise, or will replace such items with a non-infringing item or modify it so that it becomes non-infringing or with the Board’s approval remove the said enjoined item and refund to the Board the sums paid thereof.

**40.0 EFFECTIVENESS**

This Contract shall come into force and effect on the date of the Letter of Award and shall be in force until the Works have been completed and all the payments have been made to the Contractor, including the payments for O&M contract period.

**41.0 LAWS AND REGULATIONS**

The formation, validity and performance of this Contract shall be governed as to all matters by and under the laws and regulations of India and courts in Patiala shall have exclusive jurisdiction in all matters arising under this Contract.

The Contractor shall respect and abide by all laws and regulations of India and shall make its best effort to ensure that the personnel of the Contractor and their dependents, while staying in India, shall respect and abide by all laws and regulations of India. The Contractor shall protect, absolve and indemnify the Board and their representatives from any claim, loss or damage arising from any non-compliance alleged or proved, without claiming them for payment.

1. **NOTICES**

Any notice given by one party to the other pursuant to this Contract shall be sent to the other party in writing or by cable, telex, facsimile and confirmed in writing to the other party’s address specified in SCC.

A notice shall be effective when delivered or on the notice’s effective date, whichever is later.

**VOLUME I**

**SECTION VI**

**SPECIAL CONDITIONS**

**OF CONTRACT**

**SECTION VI**

**SPECIAL CONDITIONS OF CONTRACT**

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**SPECIAL CONDITIONS OF CONTRACT**

The following Special Conditions of Contract shall supplement the General condition of the contract. Whenever there is a conflict the provision herein shall prevail over those in the general conditions of the contract the corresponding clause number of GCC is Indicated in parentheses, if applicable.

**1.0** **CLIMATE CONDITION**

Precaution and protection against the specific climate conditions in India such as heavy rain, high temperature, high humidity, gales, excessive sunshine, flooding or any other climate conditions which could cause damage upon the Equipment or otherwise interfere with the execution of the works shall be taken. The Equipment to be supplied shall be tropicalized.

**2.0** **CONSUMABLES AND SPARE PARTS**

2.1 **Supply of Consumables and Spare Parts**

The Contractor shall provide the consumables and spare parts as per requirement of Operation & maintenance of CAAQM Stations throughout the entire period of Contract.

2.2 **After Sales Services**

The Contractor shall guarantee the availability of all consumables, spare parts, maintenance and repair work for each Equipment at cost basis for at least five (5) years after the O&M period specified in Clause 7 of SCC, unless otherwise specified in the Specifications.

Bidder should submit certificates from the manufacturers in support of available service centers and availability of spares, parts and consumables in India as per Attachment no. 3A of Section III.

**3.0** **NAME PLATE (GCC CLAUSE 12)**

The Contractor shall affix the name plate with the following description in English on all the Equipment:

1. Name of the station
2. Name of the Equipment
3. Manufacturing date
4. Production serial number
5. Equipment model number
6. Name of manufacturer
7. Ratings of the Equipment
8. Logo of PPCB and CPCB

**4.0** **MARKING (GCC SUB-CLAUSE 13.2)**

The Contractor shall mark the following information in the sequence described below and in a frame commensurate with the size of packing and/or the Equipment.

1. Consignee: **Punjab Pollution Control Board, Vatavaran Bhawan, Nabha Road,PATIALA, (Pb.) (India)**
2. Name of the Works. Supply and O&M of Continuous Ambient Air Quality Monitoring Stations (CAAQMS) for PPCB at Dera Baba Nanak, Dera Bassi, Nangal & Barnala.
3. Name of the Project: Supply and O&M of Continuous Ambient Air Quality Monitoring Station (CAAQMS) for PPCB at Dera Baba Nanak, Dera Bassi, Nangal & Barnala
4. Contract number:
5. Contractors name:
6. Port or airport of discharge:
7. Country of origin:
8. Item, and if applicable, package number in sequence, and quantity per package and/or Equipment:
9. Description of Equipment:
10. Net and gross weight and cubic measurement:
11. Shipper’s name and/or marks:
12. Caution marks, if applicable:
13. Other markings required by the Board:

**5.0** **SHIPMENT (GCC CLAUSE 14)**

The Contractor shall be responsible for the delivery of the Equipment to each Site designated by the Board and for the coverage of shipping charges, freight, insurance premiums up to handling over the Equipment at Sites, inland transportation and temporary storage.

5.1 **Notification and Submission of Documents**

Upon shipment, the Contractor shall notify the Board and the Insurance Company by cable of the following details of the shipment.

1. Contract number
2. Description and quantity of the Equipment
3. Name of vessel and air cargo
4. Number and date of bill of loading and airway bill
5. Date of shipment, port of discharge, expected date of departure and expected date of arrival
6. Invoice amount of shipment
7. Name of a claim settling agency in India.

5.2 The Contractor shall mail the following documents to the Punjab Pollution Control Board, with a copy to the Insurance Company.

1. **Equipment of Foreign Origin:**
2. Four (4) Copies of the contractor’s invoice showing the Equipment’s description, quantity, unit price and total amount
3. Original and Four (4) copies of the negotiable, clean, on-board bill of lading marked freight prepaid and four copies of non-negotiable bill of lading;
4. Four copies of the packing list identifying contents of each package
5. Insurance certificate
6. Manufacturer and Suppliers warranty certificate
7. Factory test and inspection certificate
8. Certificate of country-of origin

The above documents shall be received by the Board at least one week before arrival of the Equipment at the port or place of arrival and. If not received, the Contractor will be responsible for any consequent expenses.

Partial shipment and transshipment is allowed.

1. **Equipment to be Supplied from within India:**

Upon delivery of the Equipment to the transporters, the Supplier shall notify the Board and mail the following documents to the Board.

1. Four copies of the Supplier’s invoice showing the Equipment’s description, quantity, unit price and total amount
2. Acknowledgement of receipts of goods from the consignee i.e. receipted delivery note, railway receipt (RR), or truck receipt (LR)
3. Supplier’s and/or Manufacturer’s warranty certificate
4. Factory test & inspection certificate and Material Dispatch Clearance Certificate (MDCC) issued by the Board.
5. Insurance certificate
6. Certificate of country of origin

The above documents shall be received by the Board before arrival of the Equipment and, if not received, the Supplier shall be responsible for any consequent expenses.

**6.0** **WORKS SCHEDULE (GCC CLAUSE 16)**

6.1 **Equipment to be supplied from Foreign Country:**

Delivery Period for all the packages shall be 90 days from the date of the opening of Letter of Credit (L/C). It relates to completion of delivery on CIF (designated Sea Port / Air Port) basis for equipment of foreign origin. Further transportation to the site where the CAAQMS’s is to be installed and commissioned shall be completed by the contractor within Sixty (60) days from the date of arrival of equipment at port of disembarkment.

6.2 **Equipment to be supplied from India:**

All the equipment shall be received at Continuous Ambient Air Quality Monitoring Station Site (1 no.), within 75 days from the date of notification of award and are to be installed and commissioned within sixty (60) days from date of receipt at site.

6.3 **Commissioning and others incidental services:**

All the equipment of the awarded package shall be commissioned within **150** days after the date of opening of Letter of Credit (L/C) including all the incidental services i.e. training, lease line, broadband connection, electricity connection etc.

6.4 **O&M Contract**

The contractor shall carry out Operation & Maintenance of Air Monitoring Stations for a period of five (5) years from the date of commissioning of the station, which can be further extended upto five (5) years at mutually agreed rates and terms & conditions.

**7.0** **WARRANTY / O & M CONTRACT (GCC CLAUSE 18)**

7.1 **Period of O&M Contract**

The complete CAAQMS shall be under Operation & Maintenance Contract from the date of commissioning of the station and maintenance of all the equipment including supply of all material shall be the responsibility of the Contractor during the validity of Operation & Maintenance Contract. The Contractor shall, in addition, comply with the performance guarantees if specified under the Contract. If, for reasons attributable to the Contractor, these guarantees are not attained in whole or in part, the Contractor shall make such changes, modifications, and/or additions to the Equipment or any part thereof as may be necessary in order to attain the contractual guarantees specified in the Contract at its own costs and expenses and to carry out further performance test.

**8.0** **INSURANCE (GCC CLAUSE 19)**

1. The **insurance (Comprehensive) shall be in an amount of equal to one Hundred Ten (110) percent** of the value of the Equipment up to handing over of the Equipment to the Board on “All Risks” basis, including war risks and strikes, naming the Board as the beneficiary.
2. The Contractor shall take comprehensive all risk insurance cover for the complete station ( all 04 CAAQMS) during O&M period including statutory insurance of Contractor’s personnel. The value shall be 110% of the total value of the stations depreciated annually as per standard norms.

**9.0** **INSTALLATION (GCC CLAUSE 20)**

Bidder shall Deputies Engineer / supervisor for on-site assembly, installation, commissioning and startup of the supplied equipment. Bidder shall also furnish tools required for assembly, commissioning and maintenance of equipment during O&M period.

**10.0 INSPECTION AND TEST (GCC CLAUSE 21)**

10.1 **Unpacking Inspection**

Unpacking inspection shall be performed by the Contractor to inspect whether all the items and quantity of the Equipment have been delivered in conformity with the Equipment and packing list without any damage during the shipment.

The Contractor shall submit the unpacking inspection report to the Board.

10.2 **Site Inspection**

The Contractor shall carry out site inspection of the Equipment at each Site at the completion of installation works to confirm that the installation works and the function of the Equipment is satisfactory for the requirements specified in S/W and the Specifications.

The Contractor shall carry out the functional test to ensure that the consumables and spare parts are good for the operation, maintenance and replacement in future.

As a result of site inspection, the Equipment regarded as unsatisfactory or unacceptable by the Board shall be promptly replaced by the contractor. The Contractor shall submit the site inspection report to the Board and the Consultant.

10.3 **Performance Test**

The Contractor shall carry out the performance test to inspect and witness the function of each of the equipment supplied under the awarded package at site.

Performance test shall be carried out in accordance with the laid down procedures for all the Equipment supplied.

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.

Performance test will be considered to be complete only after successful completion of performance test of each equipment pertaining to respective packages.

In case of results of such performance test found to be unsatisfactory by the Board same shall be promptly reminded by the Contractor.

The Contractor shall prepare the performance test procedures for approval by the Board at least thirty (30) days prior to the testing schedules.

The Contractor submits the performance test report to the Board.

**11.0 COMPLETION (GCC CLAUSE 23)**

The Contractor shall complete all the Works up to installation and commissioning of CAAQMS’s within 150 days after the date of opening of Letter of Credit **(LC).**

**12.0 SUBMISSION OF DOCUMENTS (GCC CLAUSE 24)**

12.1 **Work Program**

Within twenty one (21) days or 03 weeks from the notification of award of the Contract, the Contractor shall submit the detailed Works program and schedule to the Board indicating the following items:

a. Equipment supply program and Equipment layout plan (if applicable)

1. Design drawings and utility list, if required
2. Subcontractor list for installation work of the Equipment if not already specified in the Technical Bid
3. Program for factory, pre-shipment, unpacking and site inspections and performance test
4. Installation program including personnel organization chart of the Contractor.

The Contractor shall be responsible for any discrepancies, errors or omissions or delay in delivery and submission of the work program, and any expenses resulting there from shall be borne by the Contractor.

12.2 **Other Documents**

The Contractor shall submit the following documents for each station within forty-five (45) days after the notification of award.

|  |  |
| --- | --- |
| **Item** | **Number of** |
|  | **Documents to be** |
|  | **sent to PPCB** |
| Catalogues, product data and test reports | 4 |
| Installation manuals | 4 |
| List of consumables and spare parts | 4 |
| Manufacture’s specifications | 4 |
| Training program | 4 |

Besides the documents here above, the Contractor shall submit the following documents at the designated time for submissions as follows:

|  |  |  |
| --- | --- | --- |
| Item | Number of Document to be submitted to the Board | Time of submission |
| Inspection Report | 2 | At the time of completion of factory, pre-shipment unpacking and site inspection (if applicable) |
| Training Manual | 10 | At the time of commencement of installation of equipment |
| Operational and maintenance manual | 10 | At the time of commencement of installation of equipment |
| Training program | 1 | By the time of completion of installation of equipment |
| Report of performance test | 1 | At the time of completion of performance test |
| Video CD (optional) | 1 | By the time of commencement of training |
| List of Equipment supplied | 2 | At the time of completion of the work |

Besides the documents here above, the Contractor shall submit the notices, reports, and other documents when deemed necessary, in accordance with the direction of the Board.

**13.0 PAYMENT (GCC CLAUSE 25)**

13.1 **Method of Payment**

The payment shall be made in the currency specified in the contract by means of an irrevocable Letter of Credit (LC) for equipment against dispatch.

Other payment shall be made through Cheque only.

13.2 **Terms and Conditions of Payment**

Bids with terms and conditions of payment other than that specified below shall be rejected.

1. Payment for goods and services (excluding O&M charges) supplied from abroad:

i) **On shipment:** Eighty (80) percent of the contract price of the Goods shipped shall be paid through irrevocable Letter of Credit opened in favour of the supplier in a bank in his country and upon submission of the documents specified in sub-clause 5.2 (1) of SCC including : (i) Packing list and (ii) Supplier’s certificate that the amounts shown in the invoice are correct in terms of the contract and that all the terms and conditions of the contract have been complied with and

* 1. **On Final Acceptance:** Balance Twenty (20) percent of contract price of the equipment shall be paid within 30 days of receipt of goods and on submission of claim supported by the acceptance certificate issued by the purchaser and the submission of Performance Bank Guarantee equal to 10% of the contract value is to be submitted.
  2. 100% Payment of local currency portion including agency commission shall be paid after satisfactory completion of installation & commissioning including Training (to be certified by the Board) of all the Equipment of the at specified site(s).

1. Payment of goods and services (excluding O&M charges) supplied from India.
   1. **On Delivery:** Eighty (80)% of the contract price shall be paid on receipt of Goods and upon submission of the documents specified in Clause 5.2 (2) of SCC: and
   2. **On Final Acceptance:** Balance Twenty (20) percent of contract price of the equipment including 100% of the local costs, incidental cost, costs of training after satisfactory completion of installation & commissioning including Training (to be certified by the Board) of all the Equipment of the particular package at specified site and submission of acceptance certificate as per Attachment 4 of SCC. The performance bank guarantee equal to 10% of the Contractual Value is to be submitted before release of 20% of the payment.

(**c**) Payment of Operation and Maintenance charges:

O&M cost of each year shall be paid after end of every quarter in equal installments based on submission of required air quality report as per annexure X1 to X4 along with data obtained from calibration documentation. Penalties applicable if any as referred in Scope of Work for O&M Contract and as per notification of award of contract shall be deducted from the quarterly payment.

(**d**) i) Where payments are to be effected through Letter of Credit (LC), the same shall be subject to the latest Uniform Customs and Practice for documentary credit, of the International Chamber of Commerce.

1. The LC will be confirmed at Supplier’s cost if requested specifically by the supplier;
2. If LC is required to be extended / reinstated for reasons not attributable to the Purchaser, the charges thereof shall be to the suppliers account.
3. Any expenditure for the operation of LC out - side India shall be borne by the supplier.

**14.0 PRICES (GCC CLAUSE 26)**

The prices quoted **shall be firm** throughout the tenure of the Contract. Any increased cost incidental to the performance of the Works due to any economic dislocation either in the origin country or India or to any other causes such as currency restriction, price hike of the Equipment, wage hike for labor or revaluation of the currency cannot be claimed by the Contractor to the Board.

**15.0 PERFORMANCE SECURITY (GCC CLAUSE 27)**

15.1 **Performance Security**

The amount of performance security as a percentage of the Contract Price shall be ten (10) percent.

**16.0 LIQUIDATED DAMAGES (GCC CLAUSE 31)**

16.1 **Rate**

The Contractor shall pay to the Board as liquidated damages a sum equivalent to half (0.5) percent of the contract price of each station for per week of delay in commissioning of each station after scheduled date of completion.

16.2 **Maximum Deduction**

The total liquidated damages on account of delay in supplies payable to the Board shall not in any case exceed ten (10) percent of the Contract price of supply portion only (Excluding O&M charges).In case the total liquidated damages on account of delay exceeds ten percent of the contract price PPCB can cancel the contract and forfeit the security guarantee amount.

PPCB can award the work to another vendor and the claims for amount above the contract amount shall be borne by the contractor.

16.3 In addition to above Liquidated damages for delay, the Contractor is liable to pay penalty on account of failure of systems during O&M period as elaborated in Section – II (Scope of work) of this document.

**17.0 NOTICES (GCC CLAUSE 42)**

Any notice, request or consent shall be deemed to have been given or made when delivered in person to an authorized representative of the party to whom the communication is addressed or when sent by registered mail to such party at the following address:

**The MEMBER SERETARY,**

**Punjab Pollution Control Board,**

**Vatavaran Bhawan, Nabha Road, Patiala,**

**(Pb.), INDIA.**

**Attachment 1**

**Form of Bank Guarantee for Performance Security**

(to be stamped in accordance with Stamp Act, if any, of the Country of the

Issuing Bank)

Bank Guarantee No. ---------

Date: ------------------------------

Ref. No.:---------------------------------

**To**,

**The MEMBER SERETARY,**

**Punjab Pollution Control Board,**

**Vatavaran Bhawan,**

**Nabha Road, Patiala,(Pb.), INDIA.**

Dear Sirs

THIS AGREEMENT is made on the ----------------days of----------------------- 202.. ------

Between [Name of the Bank] of ---------------------- [address of the bank]

(Hereinafter called “the Guarantor”) of the one part and Punjab Pollution

Control Board Patiala-147001 (hereinafter called “the Board”) of the other

Part.

**WHEREAS**

(1) this agreement is supplemental to a contract number ----------------(insert

Contract Number) (hereinafter called “the Contract”) made between

……………… [name of Contractor] of ------------------- [address of

Contractor] (hereinafter called “the Contractor) of the one part and

the Board of the other part whereby the Contractor agreed and

undertook to execute the works of Supply and O&M of 4 nos. Continuous Ambient Air Quality Monitoring Station (CAAQMS) for PPCB at Dera Baba Nanak, Dera Bassi, Nangal & Barnala against the Contract for the sum of ------------------- [amount in Contract Currency] being the Contract Price; and

1. the Guarantor has agreed to guarantee the due performance of the Contract in the manner hereinafter appearing.

NOW, THEREFORE, the Guarantor hereby agrees with the Board as follows;

1. If the Contractor (unless relieved from the performance by any clause of the Contract or by statute or by the decision of a tribunal of competent jurisdiction) shall in any respect fail to execute the Contract or commit any breach of his obligations there under then the Guarantor will indemnify and pay the Board the aggregate sum of ---------------------

[Amount of Guarantee shall be ten (10)% (Percent) of the said value of the Contract]----------------------- [in words], such sum being payable in the

types and amount of currencies in which the Contract Price is payable, provided that the Board or his Authorized Representative has notified the Guarantor to that effect and has made a claim against the Guarantor before the expiry of O&M period.

1. The guarantor shall not be discharged or released from his guarantee by an arrangement between the Contractor and the Board, with or without the consent of the Guarantor, or by any alteration in the

Obligations undertaken by the Contractor or by any forbearance on

The part of the Contractor, whether as to payment, time, performance, or otherwise, any notice to the Guarantor of any such arrangement, alteration, or forbearance is hereby expressly waived.

This guarantee shall be valid for two years after successful commissions of entire system from the date of expiry of O&M period as specified in the Contract.

Given under our hand on the date first mentioned above.

SIGNED BY ------------------------------

for and on behalf of the

Guarantor

(Seal of Guarantor)

in the presence of

--------------------------------------

(Witness)

**Attachment 2**

**FORM FOR CONTRACT AGREEMENT FOR SUPPLY AND OPERATION & MAINTENANCE OF CONTINUOUS AMBIENT AIR QUALITY MONITORING STATIONS (CAAQMS)**

This operation and Maintenance Agreement (“Agreement”) is made on this -

------------------------------------------ day of by and between:

(Punjab Pollution Control Board, Patiala), India which term shall include permitted assigns and successors (Hereinafter called as “The Board” or “the Owner”).

And

M/s. ----------------------------------------------------------------- a company incorporated

----------------------------------- With Regd. Office at ----------------------------------------------

which term shall include permitted assigns and successors (hereinafter called as “Contractor” or “the Contractor”)

RECITALS

Whereas the Owner had invited Bids under reference --------------------- for

supply and Operation & Maintenance continuous ambient Air quality monitoring Station located at:

and M/s -------------------- had submitted their bid against the aforesaid

invitation to bid and the Owner has accepted the bid of M/s -------------- and has

decided to entrust the job of supply Installation and Operation & Maintenance (O&M) of eight (04} Continuous Ambient Air Quality Monitoring Stations located at locations in Dera Baba Nanak, Dera Bassi, Nangal & Barnala to the Contractor vide Letter of

Award ref.----------- dated ---------- at a total Contract Price for complete

scope of work of -------------- (Contract Price in Words and Figures) (Hereinafter

“the Contract Price”).

Whereas the Contractor has accepted the Letter of Award issued by the

Owner in writing vide its letter no.--------------- dated ----------- and has furnished

Contract Performance Security for an amount of Rs. ---------- [Rupees-------------

only] and which is initially valid up to -------- and Owner has accepted the

said Contract Performance Security.

Whereas, Contractor is having expertise in the business inter alia, of supplying & installation and operation & maintenance of Continuous Ambient Air Quality Monitoring Stations and the owner has

engaged the Contractor to supply and perform operation and maintenance of said Air monitoring stations upon the terms & conditions set forth in this Agreement and the Letter of Award referred above issued by the Owner including all the documents referred in the above Letter of Award.

**NOW THIS AGREEMENT WITNESSETH AS FOLLOWS;**

1. In this Agreement words and expressions shall have the same meanings as are respectively assigned to them in the Conditions of Contract referred to.
2. The following documents shall be deemed to form and be read and construed as part of this Agreement, viz.:
   1. Scope of Works;
   2. Financial Bid;
   3. Technical Specifications;
   4. General Conditions of Contract;
   5. Special Conditions of Contract; and
   6. The Board’s Notification of Award.

This Contract sets forth the entire contract and agreement between the parties pertaining to the supply of the Goods described herein and Operation & Maintenance of the Air Monitoring Stations and supersedes any and all earlier verbal or written agreements pertaining to the supply of the Goods.

This Contract shall prevail over all other Contract documents. In the event of any discrepancy or inconsistency within the Contract documents, then the documents shall prevail in the order listed above.

1. In consideration of the payments to be made by the Board to the Contractor as hereinafter mentioned, the Contractor hereby covenants with the Board to perform the Works and to remedy defects therein conformity in all respects with the provisions of the Contract.
2. The Board hereby covenants to pay the Contractor in consideration of the performance of the Works and the remedying of defects therein the

Contract Price or such other sum as may become payable under the provisions of the Contract at the times and in the manner prescribed by the Contract.

1. Any notice under the Contract shall be in the form of letter, telex, cable or facsimile. Notices to either party shall be given at such address or addresses as such party shall specify from time to time by written notice to the other. In the absence of such notice to the contrary, notice to the Board shall be properly addressed to:

**The MEMBER SERETARY,**

**Punjab Pollution Control Board,**

**Vatavaran Bhawan,**

**Nabha Road, Patiala,(Pb.), INDIA.**

And notice to the Contractor shall be properly addressed to:

[Contractor’s address and electronic transmission address]

----------------------------------------------------------------------------------------------------

----------------------------------------------------------------------------------------------------

A notice shall be effective when delivered or on the notice’s effective date, whichever is later.

IN WITNESS whereof the parties hereto have caused this Agreement to be executed in accordance with their respective laws the day and year first above written.

-------------------------------------------------

Signature of Board’s authorized

Representative

-------------------------------------------------

Signature of Contractor

Signed, Sealed and Delivered by the said



(For the Board) in the presence of



Signed, Sealed and Delivered by the said

(For the Contractor) in the presence of

**Attachment 3**

**PROFORMA OF CERTIFICATE FOR ISSUE BY THE PPCB**

**AFTER SUCCESSFUL COMMISSIONING OF EQUIPMENT**

No.: Date: ………………..

M/s

**Subject: Certificate of Commissioning of equipment.**

1. This is to certify that the equipment as detailed below has / have been received in good condition along with all the standard and special accessories (subject to remarks in Para No.2) and a set of spares in accordance with the Contract / specifications. The same have been installed and commissioned.
   1. Contract No…………………………………….. Dated …………………….
   2. Name of CAAQM station/ city ……………………………………………..
   3. Description of the equipment ………………………………………………
   4. Package No. ……………………………………………………………….......
   5. Quantity ………………………………………………………………………....
   6. Bill of Lading …………………………… dated ……………………………..

(for import contract)

* 1. Name of the vessel/transporter …………………………………………….
  2. RR No. …………………………………… dated ……………………………..
  3. Name of the consignee ……………………………………………………..
  4. Date of commissioning and performance test …………………………

1. Details of recoveries to be made on that account:

|  |  |  |
| --- | --- | --- |
| Sl. | Description | Amount to the recovered |
| No. |  |  |
|  |  |  |
|  |  |  |

1. The proving/performance test has been done to out entire satisfaction and personnel have been trained to operate the equipment.

BOARD CONTRACTOR

1. The contractor has fulfilled his contractual obligation satisfactorily. Explanatory notes for filling up the certificates:
2. he has adhered to the time schedule specified in the contract in dispatching the documents drawing pursuant to Technical Specifications.
3. He has supervised the commissioning of the item in time i.e. within the period specified in the contract form the date of intimation by the Purchaser in respect of the installation of the plant.
4. Training of personnel as specified in the contract has been completed by the contractor
5. In the event of documents/drawings having not been supplied by the contractor or installation and commissioning of the plant has been delayed on act of the contractor, the extent of delay should always be mentioned.

**OR**

The contractor has failed to fulfill his contractual obligations with regard to the following i.e. instruction or training etc.

a)

b)

c)

d)

1. The amount of recovery, on account of non-supply of accessories and spares is given under Para No. 2.
2. The amount of recovery on account of failure of the contractor to meet his contractual obligations is as indicated in endorsement of the letter.

Signature ………………………………….

Name …………………………………

Designation with stamp……………………

Member Secretary,

Punjab Pollution Control Board,

Vatavaran Bhawan, Nabha Road,

PATIALA

#### Attachment 4

**PROFORMA FOR BANK GUARANTEE TO BE FURNISHED BY O&M PARTNER (TO BE STAMPED IN ACCORDANCE WITH STAMP ACT, IF ANY, OF THE COUNTRY OF THE ISSUING BANK)**

Bank GuaranteeNo.........................

Date ..................................................

In consideration of **Punjab Pollution Control Board** (hereinafter referred to as ‘‘Employer’’ which expression shall unless repugnant to the context or meaning thereof include its successors, administrators and assigns) having awarded to ...................................... with its Head Office at(herein-after referred to as............................ or ‘‘Contractor’’) a Contract for Supply and Operation & Maintenance of Continuous Ambient Air Quality Monitoring Stations (CAAQMS), vide Contract No.............................dated and the same having been unequivocally accepted by the Contractor resulting in a ‘‘Contract’’, which award is on the strength of Form of Certificate by the O&M Partner in India for Carrying out O&M of CAAQM’s dated .................... (Hereinafter referred to as ‘‘Undertaking’’) given by M/s............ (O&M Partner) having its registered office at

..................................... (Hereinafter called O&M Partner), and the Contractor having further executed with ....................... (O&M Partner) a Sub-Contract dated ................... and the same having been unequivocally accepted by the O&M Partner resulting in a Sub-Contract Agreement for(hereinafter called ‘‘Sub-Contract Agreement’’)and..... ... (O&M Partner) having agreed to provide a Performance Guarantee amounting to 2% of the total contract price in addition to the Contract Performance Security to be provided by the Contractor to the Employer on the terms and conditions specified in the‘ ‘Undertaking’’.

We..................................... Bank, having its Head Office................................

(herein-after referred to as the ‘‘Bank’’, which expression shall, unless repugnant to the context or meaning thereof, include its successors, administrators, executors and assigns) do hereby guarantee and undertake to pay to the Employer on demand any and all monies to the extent of .................................(Specify currency and amount in words and figures)

only as aforesaid at any time up-to...........................@ without any

demur, reservation, context, recourse or protest and/or without any references to ‘‘O&M Partner’’ or ‘‘Contractor’’. Any such demand made by the Employer on the Bank shall be conclusive and binding, notwithstanding any difference between the Employer and Contractor and/or between the Employer and O&M Partner or any dispute pending before any Court, Tribunal, Arbitrator or any other Authority. The Bank undertakes not to revoke this guarantee during its currency without previous consent of the Employer and further agrees that the guarantee herein contained shall be enforceable till ninety (90) days after expiry of its validity.

The Employer shall have the fullest liberty, without affecting in any way the liability of the Bank under this guarantee, from time to time to extend the time for performance of the Contract or the Component Agreement by the O&M Partner. The Employer shall have the fullest liberty, without affecting this guarantee, to postpone from time to time the exercise of any powers vested in them or of any right which they might have against the O&M Partner and to exercise the same at any time, in any manner, and either to enforce or to for bear to enforce any covenants, contained or implied, in the Contract or Undertaking or any other course or remedy or security available to the Employer. The Bank shall not be released of its obligations under this presents by any exercise of its liberty with reference to the matters aforesaid or any of them or by reason of any other act or forbearance or other acts of omission or commission on the part of the Employer or any other indulgence shown by the Employer or by any other matter or thing whatsoever which under law would, but for this provision have the effect of relieving the Bank from its obligations.

The Bank also agrees that the Employer at is option shall be entitled to enforce this Guarantee against the Bank as a principal debtor, in the first instance without proceeding against Contractor or O&M Partner and notwithstanding any security or other guarantee that the Employer may have in relation to Contractor's or O&M Partner 'liabilities.

Notwithstanding anything contained hereinabove our liability under this guarantee is restricted to ........................ and, it shall remain in force up-to and including ......................... @..................................... and shall be extended from time to time for such period (not exceeding one year), as may be desired by M/s (O&M Partner) on whose behalf this guarantee has been given.

Datethis............................dayof.......................... 2020.......................at………………………

**WITNESS :**

(Signature).........................................(Signature)............................................

(Name)............................................... (Name & Designation).... ......................

(OfficialAddress)...............................(Bank'sSeal)........................................

Authorized vide Power of

Attorney No..........................................

Date.....................................................

\* Brief Name of the Contractor

@ The date will be ninety (90) days after the end of the defect liability period as specified in Contract.

**NOTE :**

1. The stamp papers of appropriate value shall be purchased in the name of the Guarantee issuing Bank.
2. (i)The Bank Guarantee from a Bank in the list of Banks at Attachment – 15 to Section – III of bid documents.

**Annexure – X1**

**MONTHLY FIELD CHECK LIST OF ( To be filled by PPCB officials deputed)**

**CAAQM STATION UNDER OPERATION CONTRACT ------(name of the city)**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **S.** | **Description** | |  |  |  | **-----------(name of the Station) Station** | | **Remarks** |
| **No.** |  |  |  |  |  |  |  |  |
|  |  | | | |  |  |  |  |
| 1. | Station Visit Date | | | |  |  |  |  |
|  |  |  | |  |  |  |  |  |
|  | (i) 1st | Week | |  |  |  |  |  |
|  |  | | |  |  |  |  |  |
|  | (ii) 2nd Week | | |  |  |  |  |  |
|  |  | | |  |  |  |  |  |
|  | (iii) 3rd Week | | |  |  |  |  |  |
|  |  | | |  |  |  |  |  |
|  | (iv) 4th Week | | |  |  |  |  |  |
|  |  |  | | |  |  |  |  |
| 2. | SOP | Available | | | at |  |  |  |
|  | Station | |  |  |  |  |  |  |
|  |  | | |  |  |  |  |  |
| 3. | Environmental | | |  |  |  |  |  |
|  | Condition of Station | | | |  |  |  |  |
|  |  | |  |  | |  |  |  |
| 4. | Protocol | | of | Station | |  |  |  |
|  | available | |  |  |  |  |  |  |
|  |  | |  |  |  |  |  |  |
| 5. | Availability | |  |  | of |  |  |  |
|  | Calibration Gas | | |  |  |  |  |  |
|  |  | |  |  |  |  |  |  |
| 6. | Availability | |  |  | of |  |  |  |
|  | Permeation Tube | | | |  |  |  |  |
|  | (NIST Traceable ) | | | |  |  |  |  |
|  |  | |  | | |  |  |  |
| 7. | Weekly | | Calibration | | |  |  |  |
|  | Done |  |  |  |  |  |  |  |
|  | (Precision | | check, two | | |  |  |  |
|  | point |  | calibration | | |  |  |  |
|  | check) | |  |  |  |  |  |  |
|  |  | | | |  |  |  |  |
| 8. | Full Calibration Done | | | |  |  |  |  |
|  | (Multipoint | | Calibration | | |  |  |  |
|  | Quarterly check) | |  |  |  |  |  |  |
|  |  | | | |  |  |  |  |
| 9. | Insurance Validity | | | |  |  |  |  |
|  |  | |  |  |  |  |  |  |
| 10. | Electricity | | Bill | Paid, | if |  |  |  |
|  | any |  |  |  |  |  |  |  |
|  |  | |  |  |  |  |  |  |
| 11. | Telephone | | Bill | Paid, | if |  |  |  |
|  | any |  |  |  |  |  |  |  |
|  |  | |  |  | |  |  |  |
| 12. | Security | |  | Guard | |  |  |  |
|  |  | | | | |  |  |  |
|  | | | | | | | | |

Payment, if any

13. Servicing of ACs

Installed, if any

1. Data Display Board Working
2. O&M Rate - Cheque payment, if any
3. Name of the Company Engineer Deputed/Present
4. Data Analyst at Central Station Deputed/Present
5. Log-Book maintained

and observation entered.

1. Date Received (Daily / Monthly)
2. Name of the visiting Official of PPCB
3. Special Remarks, if any

………………………………

Signature of PPCB official

**Annexure -X2 TO X4 Reporting Formats**

**Punjab Pollution Control Board**

**Continuous Ambient Air Quality Monitoring Report**

**(MAIN POLLUTANTS)**

To be submitted daily at 06 morning for that day ending at next 06 morning

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | Daily Report | |  |  |  | Station Name:------------------- | |  |  |  | Month:--------------------- | |  |  |  |  |
|  |  | Report No. : | |  |  |  |  |  |  | Date:-------------- | | | . |  |  |  |  |
|  |  | Monitoring Location : ADD SIMILAR TABLE FOR METEOROLOGICAL PARAMETERS | | | |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  | Data Interval: 1 Hr. Average | | | |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  | Monitoring Conducted By:------------------ | | | | |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **Hrs.** | **NO** | **NO2** | **NOX** | **NH3** |  | **SO2** | **CO** | **O3** | **PM2.5** | **PM10** |  | **Benzene** |  | **Toluene** | **Ethyl Ben** | **MP Xylene** | **O xylene** |
| **µg/m3** | **µg/m3** | **ppb** | **µg/m3** |  | **µg/m3** | **µg/m3** | **µg/m3** | **µg/m3** | **µg/m3** |  | **µg/m3** |  | **µg/m3** | **µg/m3** | **µg/m3** | **µg/m3** |
|  |  |  |  |
| **06-07Hr.** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **07-08 Hr.** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **08-09 Hr.** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **09-10 Hr.** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **10-11 Hr.** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **11-12 Hr.** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **12-13 Hr.** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **13-14 Hr.** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **14-15 Hr.** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **15-16 Hr.** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **16-17Hr.** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **17-18 Hr.** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **18-19 Hr.** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Hrs.** | **NO** | **NO2** | **NOX** | **NH3** | **SO2** | **CO** | **O3** | **PM2.5** | **PM10** | **Benzene** | **Toluene** | **Ethyl Ben** | **MP Xylene** | **O xylene** |
| **µg/m3** | **µg/m3** | **ppb** | **µg/m3** | **µg/m3** | **µg/m3** | **µg/m3** | **µg/m3** | **µg/m3** | **µg/m3** | **µg/m3** | **µg/m3** | **µg/m3** | **µg/m3** |
|  |
| **19-20 Hr.** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **20-21 Hr.** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **21-22 Hr.** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **22-23 Hr.** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **23-00 Hr.** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **00-01 Hr.** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **01-02Hr.** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **02-03 Hr.** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **03-04Hr.** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **04-05 Hr.** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **05-06 Hr.** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **MINIMUM** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **MAXIMUM** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **AVERAGE** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **Data** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **Captured** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

Note :

**Punjab Pollution Control Board**

**Continuous Ambient Air Quality Monitoring Report**

**(Mean Concentration of Main Pollutants)**

**Year ………..**

**Monitoring Location: ……………………..**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***Months*** | ***NO*** | ***NO2*** | ***NOX*** | ***NH3*** | ***SO2*** | ***CO*** | ***O3*** | ***PM2.5*** | ***PM10*** | ***Benzene*** | ***Toluene*** | ***Ethyl Ben*** | ***MP Xylene*** | ***O xylene*** |
|  | ***µg/m3*** | ***µg/m3*** | ***ppb*** | ***µg/m3*** | ***µg/m3*** | ***µg/m3*** | ***µg/m3*** | ***µg/m3*** | ***µg/m3*** | ***µg/m3*** | ***µg/m3*** | ***µg/m3*** | ***µg/m3*** | ***µg/m3*** |
| ***January*** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| ***February*** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| ***March*** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| ***April*** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| ***May*** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| ***June*** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| ***July*** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| ***August*** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| ***September*** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| ***October*** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| ***November*** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| ***December*** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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| ***MINIMUM*** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| ***MAXIMUM*** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| ***AVERAGE*** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

**Calculation of City-wise Payment for O & M Charges on Quarterly Basis for CAAQM Stations under O & M Contract**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Bill raised for O & M Charges by M/s ………………………………………. | | | | | | Invoice No. ……………… | | | | Date ………………… | | |  | ` | |  |
|  | | |  |  |  |  | |  | |  | |  |  |  |  |  |
| Bill raised for spares and consumables | | | |  |  | Invoice No. ……………… | | | | Date ………………… | | |  | ` | |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Total Amount |  |  |  |  |  |  |  |  |  |  |  |  |  | ` | |  |
|  | | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Name of the Station  | | |  |  | **STATION I** | |  |  | **STATION II** | |  |  | **STATION III** | | |  |
|  |  |  |  |  | | |  |  |  | |  |  |  | | |  |
| Quarter No.:  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Year: |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Percentage | of | valid | Month 1 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| monthly data | captured | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Month 2 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| rate  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  | Month 3 |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Average Quarterly Data Captured Rate | | | |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  | Price | for | Price | for | Price | for | Price | for | Price | for | | Price | for |
| Delete |  |  |  | service |  | material |  | service |  | material |  | service |  |  | material | part |
|  |  |  |  | portion |  | part & other | | portion |  | part & other | | portion |  | | & | other |
|  |  |  |  |  |  | incidental | |  |  | incidental | |  |  |  | incidental | |
|  |  |  |  |  |  | charges |  |  |  | charges |  |  |  |  | charges |  |
|  |  |  |  | 70% |  | 30% |  |  |  |  |  |  |  |  |  |  |
| Base Amount per Quarter (as per No A) **(A)** | | | |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Proportionate Amount based on Valid Data Captured | | | |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Rate**(B)** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Formula: see at footnote\* | | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| (Specimen Calculation sheet attached in **Annexure I)** | | | |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Applicable Deduction as per penalty provision for | | | |  |  |  |  |  |  |  |  |  |  |  |  |  |
| continuous non-functioning**(C)** | | | |  |  |  |  |  |  |  |  |  |  |  |  |  |
| (Specimen Calculation sheet attached in **Annexure II)** | | | |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Any Other Deduction, specify with justification**(D)** | | | |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Applicable Taxes &Duties**(E)** | | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| - Service Tax |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| - Education Cess | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| - Secondary &Higher Education Cess | | | |  |  |  |  |  |  |  |  |  |  |  |  |  |
| - CST |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Net Amount Payable (`)**[ F = B- (C+D) +E ]** | | | |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | | | |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **Total O&M cost Payable(Station Wise)** | | | | **(i)** |  |  |  | **(ii)** |  |  |  | **(iii)** |  |  |  |  |

**Total Amount Payable (` ) for O& M cost for City for quarter no. 1/2/3/4 of year 202… (I + ii + iii)**

* **Percentage quarterly data captured rate/ 85% X A**

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| --- | --- |
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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  | **Annexure I** | |
|  |  | **(Ref.: Invoice no-------** | | | **dated---------** | **for the period --------------------** | | **)** |
|  |  |  |  |  |  | |  |  |
| Name of Station\* | Name of non | – | Total period | of | Period considered for | | Penalty amount |  |
|  | functional system |  | continuous | non- | penalty | calculation | (period x unit rate) |  |
|  |  |  | functioning (days) | | after grace period\*\* | |  |  |
|  |  |  |  |  |  |  |  |  |
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**Total Penalty Amount (`):**

* **(To be prepared & submitted separately for each station)**
* **Grace period of 02 days is applicable only once per quarter**

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|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | **Annexure II** | |
|  |  |  | **(Ref.: Invoice no-------** | | | | | **dated---------** | **for the period --------------------** | | **)** | | |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Name of |  |  | | |  |  |  |  |  |  |  |  |  |  |  | Average |
| Station\* |  |  | | |  | **Observed Monthly Data Captured Rate** | | | | |  |  |  |  |  | Percentage |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | Data |
|  |  | For gases pollutant | | | |  |  | Dust Particles | |  | For Mat. Parameters | | | | | Capture Rate |
|  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | NO2 | O3 | SO2 | CO | NH3 |  | BTX | PM2.5 | PM10 | Temp. | RH | WS | WD | SR | RF |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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* (**To be prepared & submitted separately for each station**)

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| **Technical Check Sheet-1** | | | |
| **Name and Address of the Bidder** | | | |
|  | | | |
| **Technical Detail** | | | |
| **Qualification for Technical Specifications (Item Wise)** | | | |
| **Note: Bidder has to fill actual details as per literature / data sheet from manual enclosed** | | | |
| **Sl. No.** | **Item / Analyzer Name** |  | **Bidder's Response** |
| 1 | **AMBIENT SULPHUR DIOXIDE (SO2) ANALYSER** | **Make & MODEL** |  |
| 1.1 | Principle | UV Fluorescence |  |
| 1.2 | USEPA/TUV-Approval, Certificate no. |  |  |
| 1.3 | Measurement | SO2in Ambient Air |  |
| 1.4 | Display | Digital |  |
| 1.5 | Ranges | Auto ranging 0 - 200 ppb |  |
| 1.6 | Lower Detectable Limit | 1 ppb |  |
| 1.7 | Noise Level | 0.5 ppb |  |
| 1.8 | Zero Drift | < 1 ppb/24 Hrs. with automatic zero compensation |  |
| 1.9 | Span Drift | <1 ppb in 24 hrs. |  |
| 1.10 | Linearity | ± 1% of full scale in 15 days |  |
| 1.11 | Response Time | 120 sec or less |  |
| 1.12 | Calibration | Please see Multi-calibration section (Sl. No. 7) and also calibration section in General Specifications(4.1.7 to 4.1.9) |  |
| 1.13 | Analog Output | 0 – 1 V, 0 – 10 V, 2 – 20 mA / 4 – 20 mA |  |
| 1.14 | Digital Output | Multiple drop RS 232, USB port /TCP/IP ,Ethernet |  |
| 1.15 |  |  |  |
| 1.16 | Country of Origin |  |  |
| 1.17 | Agency certificate | Bidder Page Sr. No. |  |
|  | Coloured Literature attached which can be downloaded from website | Bidder Page Sr. No. |  |
| 2 |  | | |
| 2.10 | **AMBIENT CARBON MONOXIDE (CO) ANALYSER** | **Make & MODEL** |  |
| 2.20 | Principle | Non Dispersive Infra-Red (NDIR) with Gas Filter Correlation/ Cross Flow Modulation Method |  |
| 2.30 | USEPA/TUV-Approval, Certificate no. |  |  |
| 2.40 | Measurement | CO in Ambient Air |  |
| 2.50 | Display | Digital |  |
| 2.60 | Ranges | Auto ranging 0 - 100 ppm. |  |
| 2.70 | LDL | 0.1 ppm |  |
| 2.80 | Noise Level | 0.05 ppm with time constant ± 30 seconds |  |
| 2.11 | Span Drift | < 1% full scale in 24 hrs. |  |
| 2.12 | Linearity | Continuous + 1% |  |
| 2..13 | Response Time | 30 seconds or less |  |
| 2.14 | Calibration | Please see Multi-calibration section (Sl. No. 7) and also calibration section in General Specifications (4.1.7 to 4.1.9). |  |
| 2.15 | Analog Output | 0 – 1 V, 0 – 10 V, 2 – 20 mA / 4 – 20 mA |  |
| 2.15 | Digital Output | Multiple drop RS 232port, USB port /TCP/IP , Etn |  |
| 2.16 | Country of Origin |  |  |
| 2.17 | Agency Certificate | Bidder Page Sr. No. |  |
|  | Coloured literature attached which can be downloaded from website | Bidder Page Sr. No. |  |
| 3.00 |  | | |
| 3.1 | **AMBIENT OZONE (O3) ANALYSER** | **Make & MODEL** |  |
| 3.2 | Principle | UV Photometric / Chemiluminiscence | : |
| 3.3 | USEPA/TUV-Approval, Certificate no. |  |  |
| 9.0 | Measurement | O3 in Ambient Air | : |
| 3.5 | Display | Digital | : |
| 3.6 | Range | Auto ranging 0 - 500 ppb | : |
| 3.7 | Lower Detectable Limit | 1.0 ppb | : |
| 3.8 | Noise level | ± 0.5 ppb | : |
| 3.9 | Zero Drift | < ½% per month | : |
| 3.10 | Span Drift | < 1% per month | : |
| 3.11 | Linearity | Continuous + 1% | : |
| 3.12 | Response Time | 30 seconds or less | : |
| 3.13 | Calibration | With built in Zero and span generator and also see Multi-calibration section (Sl. No. 7) | : |
| 3.14 | Analog Output | 0 – 1 V, 0 – 10 V, 2 – 20 mA / 4 – 20 mA | : |
| 3.15 | Digital Output | Multiple drop RS 232 port, USB port /TCP/IP ,ETn |  |
| 3.16 | Country of Origin |  |  |
| 3.17 | Agency Certificate | Bidder Page Sr. No. |  |
|  | Coloured literature attached which can be downloaded from website | Bidder Page Sr. No. | : |
| 4 |  | | |
| 4.1 | **AMBIENT OXIDES OF NITROGEN (NO-NO2- NOX) ANALYSER** | **Make & MODEL** |  |
| 4.2 | Principle | Chemiluminiscence |  |
| 4.3 | USEPA/TUV-Approval, Certificate no. |  |  |
| 4.4 | Measurement | NO-NO2\_NOX measurement in Ambient Air |  |
| 4.5 | Display | Digital |  |
| 4.6 | Ranges | Auto ranging 0-2000 ppb |  |
| 4.7 | LDL | 1 ppb |  |
| 4.8 | Noise Level | 0.5 ppb |  |
| 4.9 | Zero Drift | <1 ppb / 24 Hrs. |  |
| 4.10 | Span Drift | < 2% in 15 days |  |
| 4.11 | Linearity | ± 1% of full scale |  |
| 4.12 | Response time | 120 second |  |
| 4.13 | Rise / fall Time | < 30 Sec |  |
| 4.14 | Calibration | Please see Multi-calibration section (Sl. No. 7) and also calibration section in General Specifications (4.1.7 to 4.1.9). |  |
| 4.15 | Analog Output | 0 – 1 V, 0 – 10 V, 2 – 20 mA /4 – 20 mA and Digital output |  |
| 4.16 | Digital Output | Multi drop RS 232 port, USB port /TCP/IP ,Ethernet |  |
| 4.17 | Country of Origin |  |  |
| 4.18 | Agency certificate | Bidder Page Sr. No. |  |
|  | Coloured literature attached which can be downloaded from website | Bidder Page Sr. No. |  |
| 5 |  | | |
| 5.1 | **AMBIENT AMMONIA ANALYSER (NH3)** | **Make & MODEL** |  |
| 5.2 | Principle | Chemiluminiscence (NH3 conversion to NO by oxidation. NO2 also converted to NO. |  |
| 5.3 | USEPA/TUV-Approval, Certificate no. |  |  |
| 5.4 | Measurement | NH3in Ambient Air |  |
| 5.5 | Display | Digital |  |
| 5.6 | Ranges | Auto ranging 0-1000 ppb |  |
| 5.7 | LDL | 1 ppb |  |
| 5.8 | Noise Level | 0.2% of reading |  |
| 5.9 | Zero Drift | <5 ppb /24 Hrs. |  |
| 5.10 | Span Drift | < 2% in 15 days of full scale |  |
| 5.11 | NH3/NO converter | Quartz at approx. 10000 C |  |
| 5.12 | Linearity | ± 1% of full scale |  |
| 5.13 | Response time | 180 second |  |
| 5.14 | Rise / fall Time | < 30 Sec |  |
| 5.15 | Calibration | Please see Multi-calibration section (Sl. No. 7) and also calibration section in General Specifications (4.1.7 to 4.1.9). |  |
| 5.16 | Analog Output | 0 – 1 V, 0 – 10 V, 2 – 20 mA /4 – 20 mA and Digital output |  |
| 5.17 | Digital Output | Multi drop RS 232 port, USB port /TCP/IP ,Ethernet |  |
| 5.18 | Country of Origin |  |  |
| 5.19 | Agency certificate | Bidder Page Sr. No. |  |
|  | Coloured literature attached which can be downloaded from website | Bidder Page Sr. No. |  |
| 6 |  | | |
| 6.1 | **AMBIENT BTX ANALYSER** | **Make & MODEL** |  |
| 6.2 | A complete analyzer system comprising of sampling pump, transfer line, analyzer, detector, calibrator, 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. Continuous unattended measurement system of individual BTX should work without external cryogenic cooling. System should have protocol compatible to communicate & transfer data to DAS. 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. |  |  |
| 6.3 | A single stage membrane Pump collect ambient sample automatically an inbuilt adsorption trap. Subsequent, the sample will be dissolved and injected on wide bore capillary gas chromatographic separation. 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 should be in stainless steel and flow & pressure sensor to be preferred with digital display. |  |  |
| 6.4 | Photo Ionization Detector (PID) having approval from EPA/TUV or equivalent International Agency. 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. |  |  |
| 6.5 | Principal | Based on gas Chromatographic separation and Photo Ionization Detector (PID) |  |
| 6.6 | USEPA/TUV/ MCERT -Approval, Certificate no. |  |  |
| 6.7 | Measurement | Benzene, Toluene, Ethyl-benzene, m.p-Xylene and 0-Xylene. |  |
| 6.8 | Display | Digital |  |
| 6.9 | Range | 0.1 - 100 ppb (0.32 - 325 µg/m3 |  |
| 6.10 | Lower detectable limit | 0.2 ppb(0.65 µg/m3) for 15 minute cycle for Benzene |  |
| 6.11 | Temperature Range | 5 - 35oC or more |  |
| 6.12 | Repeatability | Retention Time : <0.1% RSD Concentration: <1.0% RSD |  |
| 6.13 | Typical Cycle Time | Total Cycle Time should not exceed 15min i.e. Sample Collection Time -15 min approx. |  |
| 6.14 | Analysis Time | Analytical Time- 15 min approx. |  |
| 6.15 | Sample Volume | 1 liter for 15 min cycle. |  |
| 6.16 | Desorption Tube | Carbotrap |  |
| 6.17 | Pre Concentration | Carbopack |  |
| 6.18 | Calibration | The Analyzer should be capable to calibrate through Multi Calibration System also. Please see Multi-calibration section (Sl. No. 7) And also calibration section in General Specifications (4.1.7 & 4.1.9). |  |
| 6.19 | Analogue Output | 0 – 1 V, 0 – 10 V, 2 – 20 mA / 4 – 20 mA |  |
| 6.20 | Digital Output | Multi drop RS 232 port, USB port/TCP/IP/Ethernet |  |
| 6.21 | Country of Origin |  |  |
| 6.22 | Agency certificate | Bidder Page Sr. No. |  |
|  | Coloured literature attached which can be downloaded from website | Bidder Page Sr. No. |  |
| 7 |  |  |  |
| 7.1 | **CONTINUOUS PM2.5 & PM 10 MONITORING ANALYSER (β RAY ATTENUATION)** | **Make & MODEL** |  |
| 7.2 | Based on the principle of b-ray attenuation, particulate sampled through the instrument and collected on fiberglass filter tape. Before and after sampling ,b-ray radiation is measured by scintillation / G.M. counter. An internal microprocessor handles all sequences and automatically calculates the concentration of PM2.5. & PM10. Two separate analyser is to be offerece for PM10 & PM2.5 measurement |  |  |
| 7.3 | Principle | b-ray attenuation |  |
| 7.4 | USEPA/TUV-Approval, Certificate no. |  |  |
| 7.5 | USEPA/TUV-Approval, Certificate no. |  |  |
| 7.6 | Particle Size Cut Off for PM2.5 | 0 – 2.5 Microns |  |
| 7.7 | Particle Size Cut Off for PM10 | 0-10 Microns |  |
| 7.8 | Measuring Range for PM10 & 2.5 | 0 – 1000 mg/m3 |  |
| 7.7 | Resolution | 1% of the measurement range |  |
| 7.8 | Lower Detection Limit for PM2.5 & PM 10 | < 4.8mg/m3(1 hour) |  |
| 7.9 | Detector for PM 2.5 & PM 10 | Plastic Scintillator / GM Counter / Silicon- Semiconductor base |  |
| 7.10 | Air Flow Rate for PM10 & 2.5 | 16.7 Liters / minute |  |
| 7.11 | Filter Material for PM 10 & 2.5 | Glass Fiber Filter |  |
| 7.12 | Display for PM10 & 2.5 | LED / LCD |  |
| 7.13 | Sampling Head for PM10 | Dynamic heated sampling head for measurement of PM10, with adjustable temperature 20 – 70 0C |  |
| 7.14 | Sampling Head for PM 2.5 | Dynamic heated sampling head for measurement of PM10, with adjustable temperature 20 – 70 0C with RH sensor |  |
| 7.15 | Calibration for PM10 & PM 2.5 | Separate Reference membrane facility should be provided for calibration of analyzer of PM10 & PM 2.5 |  |
| 7.16 | Compatibility | Analyzer should be compatible with protocols of DAS system to be used in station. |  |
| 7.16 | Analogue Output | 0 – 1 V, 0 – 10 V, 2 – 20 mA / 4 – 20 mA |  |
| 7.17 | Digital Output | Multi drop RS 232 port USB port /TCP/IP /Ethernet |  |
| 7.18 | Role Length | Minimum 20 meters |  |
| 7.19 | Country of Origin |  |  |
| 7.20 | Agency Certificate | Bidder Page Sr. No. |  |
|  | Coloured literature attached which can be downloaded from website | Bidder Page Sr. No. |  |
| 8 |  | | |
| 8.1 | **MULTI POINT GAS CALIBRATION SYSTEM:** | **Make & MODEL** |  |
| 8.2 | 1.The Gas Calibration System should be capable to do the following: |  |  |
| 8.3 | (i)MFC based Multipoint calibration using automatic dilution system for the calibration of SO2, NO, CO, NH3 and BTX analyser. |  |  |
| 8.4 | (ii)Auto calibration (user selectable). |  |  |
| 8.5 | (iii)Generate zero air of 99.9% purity (High Performance Zero Air Generator to be provided). | Zero Air Generator Inbuilt or separate to be confirmed. If separate then literature of Air Generator is to be enclosed |  |
| 8.6 | (iv)Gas Phase Titration (GPT) with O3 generator having 100% converter efficiency for conversion of NO2 to NO. |  |  |
| 8.7 | (v)Calibration using permeation tubes for which at least two chambers based Permeation system has to be provided. |  |  |
| 8.8 | (vi)The Permeation System should be capable to accept permeation tubes up to 6 cm in length and 2cm in diameter with user selectable temperature setting of 40 OC and 50 OC. |  |  |
| 8.9 | System should be 19” rack mountable. |  |  |
| 8.10 | System should be DAS compatible for remote calibration from Central Server. |  |  |
| 8.11 | The system should also have facility for multipoint calibration of Ozone analyzer. |  |  |
| 8.12 | Remote Calibration facility available |  |  |
| 8.13 | Approval certificate if Any |  |  |
| 8.14 | Country of Origin |  |  |
| 8.15 | Agency certificate | Bidder Page Sr. No. |  |
|  | Coloured Literature attached which can be downloaded from website | Bidder Page Sr. No. |  |
| 9 |  | | |
| 9.1 | **WORKSTATION COMPUTER/LAPTOP AND PRINTER** | **MODEL & MAKE** |  |
| 9.2 | **CPU** | Intel® Core i7 8th generation or higher |  |
| 9.3 | **Memory** | 8 GB DDR-III, 1600MHz, or better |  |
| 9.4 | **Ethernet ports** | Integrated intel ® Ethernet LAN 10/100/1000 |  |
| 9.5 | **PCI Slots** | **T**wo PCIex16 half height |  |
| 9.6 | **Optical Drive** | DVD R/W Internal |  |
| 9.7 | **HDD’s** | 3.5” 1TB, SATA drives |  |
| 9.8 | **Power Supply** | Standard suitable power supply |  |
| 9.9 | **Key board** | Optical Keyboard same as OEM |  |
| 9.1 | **Mouse** | Standard Optical Mouse same as OEM |  |
| 9.11 | **I/O ports** | 4\*USB 3.0 |  |
| 9.12 | **Monitor** | 17” Wide LCD TFT Color Monitor or better (14/15” LCD for Laptio) |  |
| 9.13 | **Wireless adapter** | USB Wireless adapter x 1 no. |  |
| 9.14 | **OS support** | Open source Ubuntu latest release and Windows OS 7 / 8 /10 |  |
| 9.15 | **Warranty** | Warranty is comprehensive on site including spares for 3 / 3 / 3 years |  |
| 9.16 | **Type** | Tower type Black in color preferably or as per the fitting in station rack |  |
| 9.16.1 | **Laser Printer** | B&W Laser Printer with auto duplex printing, wireless and Ethernet connection |  |
| 9.16.2 | **Print Speed** | black: 4 / 14 ppm |  |
| 9.16.3 | **Resolution** | 600 x 600 dpi |  |
| 9.16.4 | **Processor speed** | 264 MHz Print or better |  |
| 9.16.5 | **Paper handling input** | standard 250-sheet input tray |  |
| 9.16.6 | **Duplex printing** | Automatic (standard) |  |
| 9.16.7 | **Media sizes supported** | A4 A5 |  |
| 9.16.7 | **wireless connectivity and automatic two-sided printing** |  |  |
| 9.16.8 | **automatically connect to wireless network,** |  |  |
| 9.16.9 | **Easily print from virtually anywhere in the office with Ethernet and wireless connectivity** | Easily print from virtually anywhere in the office with Ethernet and wireless connectivity |  |
| 9.16.10 | **Connect via USB, access tools from PC to manage printer.** |  |  |
| 9.17 | **page toner cartridge or better** | · 1,500-page toner cartridge or better |  |
|  | **Coloured Literature of PC & Printer attached** | Bid Page No. |  |
| 10 |  | | |
|  | **Data acquisition SOFTWARE (DAS) (CAAQM) (Minimum Requirement)** | **MODEL & MAKE** |  |
| 10.1 | **Data Acquisition** |  |  |
| 10.1.1 | Frequency of data acquisition |  |  |
| 10.1.2 | User selectable 1,5,30,60,120 second averaging duration online digitally. |  |  |
| 10.2 | Minimum frequency will be subject to capability of analyzer cycle. |  |  |
| 10.2.1 | Channel size |  |  |
| 10.2.2 | 32 Channels or more supported |  |  |
| 10.3 | Expandable to 64 channels, if required in future |  |  |
| 10.3.1 | Data input |  |  |
| 10.3.2 | Either Analog (0-1 volt/0-10 volt/2-20mA/4-20mA) |  |  |
| 10.4 | or Digital to configure with the PC. The condition is that system should remotely operatable. |  |  |
| 10.5 | User configurable channels, stations and equipment with communication parameters. |  |  |
| 10.6 | Analyzer data channel should comprise of Name, Units, Communication Address, Validity Range, Operation and Error Status. |  |  |
| 10.7 | Provision to incorporate conversion factors such as PPB to µg/m3 etc. |  |  |
| 10.8 | Software should be equipped to configure the analyzers with it, irrespective of company make and communication protocol of the analyzer and the output mode i.e. Analog or Digital (RS 232) of the instrument. |  |  |
|  | The output should be provided in user defined units. |  |  |
|  |  |  |  |
| 10.9 | **Data Collection** |  |  |
| 10.10 | Average data over user selectable time (1,5,30,60 seconds time interval) period. |  |  |
| 10.11 | 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. |  |  |
| 10.12 | 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. |  |  |
| 10.12.1 | Calibration parameters |  |  |
| 10.12.2 | Provision to entering zero calibration, span calibration values of gas cylinder/permeation to devices |  |  |
| 10.12.3 | 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 values from the analyser to ascertain the percentage deviation/ correction applied during each calibration and record it in database at station & Central computer. |  |  |
| 10.13 | **Data Storage** |  |  |
| 10.14 | Data along-with diagnostic, calibration, alarms should be stored at station computer at a defined path. |  |  |
| 10.15 | Interval of data dumping will be same as defined in the data collection. |  |  |
| 10.16 | System should be capable to keep every second acquired data from 32 channels for a period of minimum five years. |  |  |
| 10.17 | Current data should be stored as per ISO-7168-1:1999I format and should be available in folder named as c:\Data\ at an interval of 15 minutes. As an example c:\data\01.05.2015.xml. the file will be appending without double data entry and as per ISO format. |  |  |
| 10.18 | Data should also be stored for last two years in E:\data\Year\Month\day i.e. e:\data\2015\05\01.05.2015.xml …. |  |  |
|  | If data encryption is done, then 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 AQI software, procedure should be available without any licensing. AQI calculating Software will be provided by CPCB/SPCB. |  |  |
|  |  |  |  |
| 10.19 | **Data Display (Statistical analysis of data)** |  |  |
| 10.20 | Main window for real time display of all measured parameters with status of all analyzers/sensors. |  |  |
| 10.21 | In 4-in-4 graphs and4-in-1 graph formats |  |  |
| 10.22 | In tables of 4-in-1 format |  |  |
| 10.23 | Real time multi – graphs over user selectable time period i.e. 6.00 AM to 6.00 AM etc. |  |  |
| 10.24 | Display of graphic & tabular display of the current data. |  |  |
| 10.25 | Graphical form should comprise of 4-4 graphs, 4-1 graphs in user defined format ( 1, 5, 10, 15, 30 min, 1hour, 4, 8, 24 hour, 30 days and yearly; user definable time series) |  |  |
| 10.26 | Tabular form should comprise of 4 channel list in user defined format (1, 5, 10, 15, 30 min, 1hour, 4, 8, 24 hour, 30 days and yearly; user definable time series) |  |  |
| 10.26.1 | Station instruments basic configuration etc. should be visible on screen continuously. |  |  |
| 10.27 | 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 CPCB within a time frame of six months. |  |  |
| 10.28 | 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(National Air Quality Standards) for defined period for the database etc. |  |  |
| 10.29 | Data analysis of diagnostics parameters |  |  |
| 10.30 | Data analysis of Pre calibration and post calibration data (if facility not available, should be developed within six months) |  |  |
|  | Data analysis of corrections applied of each calibration cycle (if facility not available should be developed within six months) |  |  |
|  |  |  |  |
| 10.31 | **Data Backup** |  |  |
| 10.32 | There should be defined data backup procedure through which data can be extracted from station computer in simple text format/excel/ ISO format(user definable). |  |  |
| 10.33 | There should be defined restore procedure also to restore the data in case of data loss. |  |  |
|  | display screen should be available to update the user about data availability. |  |  |
|  |  |  |  |
| 10.34 | **Data Validation automatic checks at station software.** |  |  |
| 10.35 | 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. |  |  |
| 10.36 | After instruments perform the calibration the results obtained should be recorded and should be transmitted to central computer. |  |  |
| 10.37 | There should be provision of two databases one is raw database and another corrected database. |  |  |
|  | Validation of data through calibration database Pre calibration & post calibration values collected. |  |  |
|  |  |  |  |
| 10.38 | **Calibration of systems** |  |  |
| 10.39 | Calibration window for analyzer for the calibration from computer. |  |  |
| 10.40 | Remote Access to Calibration: Calibration exercise need to be done remotely. All necessary arrangements for it should be made in the system. |  |  |
| 10.41 | Calibration data file may be prepared separately and data should be excluded from the database |  |  |
| 10.42 | Calibration database need to be formed, stored and transmitted to central server. |  |  |
| 10.43 | Calibration cycles to be as per the models of the instruments. |  |  |
| 10.44 | fCalibration records should store the calibration values displayed by instrument. |  |  |
|  | Diagnostics during calibration should also be recorded. |  |  |
|  |  |  |  |
| 10.45 | **Location of station** |  |  |
| 10.46 | Fixed and Mobile Stations location to be recorded and North correction feature should be available. |  |  |
|  | Latitude and longitude of stations be recorded |  |  |
|  |  |  |  |
| 10.47 | **Data transfer to Central** |  |  |
| 10.48 | All data captured at station computer should be transferred to central software. |  |  |
| 10.49 | 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. |  |  |
|  |  |  |  |
| 10.50 | **Data transfer to Display Boards at Public site** |  |  |
|  | Software should have provisions to connect data output including current pollutants concentration, AQI, advertisement, Video in Hindi, English & Local Language etc. to the display boards (LEDs), to be installed at public site. For the purpose Data display device has been recommended in the document. |  |  |
| 10.51 |  |  |  |
|  | Coloured Literature of Local DAS, Central Software and Display Software should be attached | Bid Page Sr. No. |  |
|  |  |  |  |
| 11 |  | | |
| 11.1 | **DISPLAY BOARD DATA TRANSMISSION DEVICE** | **MAKE & MODEL** |  |
| 11,2 | PROCESSOR | Intel® Atom™ Processor E3815 (1.46 GHz Single Core, 512 KB Cache, 5W TDP) or equivalentOr 900 MHz or higher quad-core ARM Cortex-A7 |  |
| 11.3 | Memory | Memory slots for MicroSD or full size SD card slot with Memory support for at-least 8 GB |  |
|  | Ports | a. One HDMI |  |
|  |  | b. LAN Port for Ethernet Network Connection |  |
| 11.4 |  | c. Minimum of 3 USB Port with support for USB 2.0 or USB 3.0. |  |
| 11.5 | OS Support | Linux, or Windows OS |  |
|  | Communication Options | a. LAN Communication |  |
| 11.6 |  | b. Wifi Communication – Wifi Hotspot enabled/ GPRS Comm. Enabled |  |
| 11.7 | Power Supply | 5 to 12 V DC through 220 V 50Hz AC Supply adapter or USB driven. |  |
| 11.8 | Size | Mechanical Chassis Size not to exceed 9’’ x 6’’x 6’’ with stand alone tower/box. |  |
|  | Operating Environment | Operating Temperature 0° C to +50° C |  |
| 11.9 |  | Humidity upto 90% |  |
| 11.10 | Device Support | 05 Years |  |
| 11.2 | Antivirus | It should be secured. If windows then life time Antivirus should be provided |  |
|  | General | Supplier will configure and deploy the communication mechanism. |  |
| 11.3 |  | Complete manual of the device should be provided. |  |
| 11.4 | Accessories | 01 Meter HDMI Cable |  |
| 11.5 | Internet | To be provided by the vendor either through GSM SIM or through Wifi Enabled Dongles. |  |
| 11.6 | Display Board should show | Last data, Time & date should be displayed |  |
|  | Software | The vendor is responsible to provide software which can download the data from Station computer, AQI Advertisements Video, etc. store it and display on the Display Board seamlessly. Display should be capable to show real time AQI of station or stations. Software should be capable to change font, font size as per requirement of Owner and must be user friendly. |  |
| 12 |  | | |
| 12.1 | **Day & Night Display Board with structure (Near to Station & in SPB or any other site** |  |  |
| 12.2 | Size of display System (HXW) and Pixel | 4 X 8 feet , 16 mm (+/- 0.5 mm ) pixel pitch, 3500 m2 minimum pixel Density |  |
| 12.3 | Visibility Range | 10 Meters (Day time) |  |
| 12.4 | Brightness | 7000 NIT or higher |  |
| 12.5 | Display of colour Elements | SMD 3535 or better |  |
| 12.6 | Minimum Life span of the system LED | LED Life 100000 Hours |  |
| 12.7 | Viewing angle of 140o Horizontal/77o Vertical | Viewing angle of 140o Horizontal/77o Vertical |  |
| 12.8 | Operating & non operating temperature | -15-550 C |  |
| 12.9 | No of Colour | 281 trillion Colors , 256 brightness level dimming capability |  |
| 12.10 | Data Processing | 24 bit Video processing, 100 % Digital |  |
| 12.11 | Scan rate and refresh frequency | Scan Ratio 1:1 and with minimum 20000 hz refresh frequency |  |
| 12.12 | LED Internal & Expternal cabinet type, servicability | Internal LED frame should be made of Aluminium and External cabinet should be factory made without pin holes , LED Display should be serviceable from front and back |  |
| 12.13 | Colour Temp adjustable | 4500 - 9000 K range |  |
| 12.14 | Input Power Requirement / Power Consumption | 120/240v, 50/60Hz , Power consumption 200 W ( maximum ) / m2 |  |
| 12.15 | Display Board Mounting | Structure based upon location As per drawing in technical bid |  |
| 12.16 | General | The system should also have the facility to display the enviromental picture through video camera/vcr/cd playeretc. for public awareness. |  |
| 12.17 | Power Cable Laying | Depending upon location, cabeling is to be done by the firm |  |
| 12.18 | Device at display board to pick data from stations and transmit it to LED display | Display data connectivity device with GSM SIM has to be installed near by LED board which will pick up data from station computer through Internet. LED to be placed away from through Internet .LED to be placed away from the station premises. |  |
| 12.19 | Certification | BIS / Bid page No. |  |
| 12.20 | IP Rating | Display Module IP67, Cabinet IP 65 |  |
|  | Coloured Literature | Bid Page No. |  |
| 13 |  | | |
| 13.1 | **21 U BLACK INDUSTRIALRACK** |  |  |
| 13.2 | 19" Industrial Rack, 21U , Color Black Consisting of |  |  |
| 13.3 | Steel Enclosure, 9 folded profile of dimensions 800mm width X 1000 mm Depth X 42U height, supporting 100 Kgs load. Bottom cover with knock out holes for cable entry to be provided. Three pairs of horizontal support shall be filled on both righ and left sides |  |  |
| 13.4 | of 100% perforated. Provision for mounting fans on rear door with concealed AC wiring |  |  |
| 13.5 | 4 Fan 230V, 90 CFM to be mounted on Rear Door |  |  |
| 13.6 | AC Main Channel Vertical two Nos, 12X5/15 Amps Sock RT- AZMP Make Anchor with 32 Amps MCB Make: Northwest or better |  |  |
| 13.8 | Horizontal Cable Manager | 20 Nos |  |
| 13.9 | Vertical Cable Manager | 10 Nos |  |
| 13.10 | Copper based Electrical Grounding / Earthing Strip Provision fo | 1 set |  |
| 13.11 | Each set of a) Castor with Brake | 2 Nos |  |
| 13.12 | Adjustable screw legs | 4 Nos |  |
| 13.13 | Base Frame | 1 No |  |
| 13.14 | Light provision activation in the rack up on opening of the front/rear door | |  |
| 13.15 | H/W Packet of 20 SRT-AQMP | 2 Nos |  |
|  | Coloured Literature enclosed | Bid Page Nos. |  |
| 14 |  | | |
| 14.1 | **RACK SERVER** | **MAKE & MODEL** |  |
| 14.2 | CPU | CPU Single CPU, Intel Xeon Quad Core E51620V3 3.50 GHz or higher, 10 MB Cache per socket or higher. The mother board should support dual sockets |  |
| 14.3 | MEMORY | 32 GB support for each CPU DDR 1333/1600/1866/2133 MHz, upgradable to 128 GB |  |
| 14.4 | MOTHERBOARD | 3. Mother Board Intel motherboard having compatibility to configuration desired |  |
| 14.5 | HDD | 3 X 500 GB SAS or better |  |
| 14.6 | ETHERNET PORT | 2 X Dual port GB NIC Cards with autosensing and on copper (total 4 ports). All four ports supporting |  |
| 14.7 | PCI SLOT | Provisions for 2 X PCI express, 2 X PCIe X 2 or more slots to accommodate additional FC/Gigabit Cards |  |
| 14.8 | OPTICAL DRIVE | DVD Drive DVDR/W 16 X Drive or better, Expternal USB based |  |
| 14.9 | FORM FACTOR | 2U rack model with rail kit or better |  |
| 14.1 | KEY BOARD | Standard Optical wireless keyboard |  |
| 14.12 | MOUSE | Standard Optical wireless mouse |  |
| 14.13 | I/O PORT | 2 X USB ports, front & 2 X USB port back, 1 X VGA Port, 1 X external SAS, 1 X Serial port |  |
| 14.14 | MONITOR | 22 inch wide colour monitor |  |
| 14.15 | RAID CONTROLLER | RAID Minimum 5 |  |
| 14.16 | WIRELESS ADAPTER | USB wireless adapter X 2 Nos |  |
| 14.17 | ANTIVIRUS | Standard Antivirus |  |
| 14.18 | REDUNTANT POWER SUPPLY AND FAN | 1 + 1, Reduntant Fans |  |
| 14.19 | OS | Compatible OS |  |
|  | Coloured Literature enclosed | Bid Page No. |  |
| 15 |  | | |
| 15.1 | **PRINTER for CENTRAL SERVER** |  |  |
| 15.2 | COLOUR Laser Jet Multi-Function Printer (Print-Scan-Copy) | MODEL & MAKE |  |
| 15.3 | Print speed Black | 25 page per min |  |
| 15.4 | Print speed Colour | 5 page per min |  |
| 15.5 | Scanner |  |  |
| 15.6 | Resolution | 1200 X 1200 dpi |  |
| 15.7 | Processor speed | 1200 MHz Print or better |  |
| 15.8 | Paper Handling input | Standar 250 sheet input tray or better |  |
| 15.9 | Duplex printing | Automatic Standard |  |
| 15.1 | Media Size | A4 - A5 |  |
| 15.11 | Easily Print from virtually anywhere in the office with | Eathernet and wireless connectivity |  |
| 15.12 | Connect to PC | Via USB and access tools from PC to manage printer |  |
| 15.13 | Toner Cartridge | 1500 page or better |  |
|  | Colour Literature | Bid Page Sr. No. |  |
| 16 |  | | |
| 16.1 | **Connectivity for DATA Transfer** |  |  |
| 16.2 | Leased Line | 1 MBPS capacity leased line connectivity with 99% uptime service level agreement to be provided by the firm at each station location. The leased line may be provided on copper or optical fiber or through RF depending upon the location. 4 Nos of Real Ips to be obtained along with lease line circuit. Router equipped with 01 WAN port and minimum 08 LAN ports is to be procured along with the leased line circuit |  |
| 16.3 | Broaband | 1Mbps capacity broadband connectivity from other than one already providing leased line connectivity shall be provided by the firm at each station |  |
|  | GSM | Internet connectity will have to provided by the firm for the entire project duration at LED location either using GSM, Hotspot, broadband or leaseline connectivity |  |
| 17 |  | | |
|  | **Weather Sensors** |  |  |
| 17.1 |  |  |  |
|  | **Wind Speed** | **Make & Model** |  |
|  | Range (Operation) | 0 – 60 m/s or better |  |
|  | Sustainability | Unto 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 |  |
|  | Calibration device / Calibration check device |  |  |
|  | certified / traceable to WMO | Bid page Sr. No. |  |
|  | Agency Certificate | Bid page Sr. No. |  |
|  | Country of Origin | Bid page Sr. No. |  |
|  | Coloured Literature which can be downloaded from webs | Bid page Sr. No. |  |
| 17.2 |  |  |  |
|  | (B) WIND DIRECTION | Make & Model |  |
|  | Range | 0 – 359 degree |  |
|  | Accuracy | ± 3 degree or better |  |
|  | Resolution | 1 degree |  |
|  | Sensor type | Ultrasonic |  |
|  | Threshold | 0.5 m/sec or less |  |
|  | Response time | 10 sec or better |  |
|  | Calibration device / Calibration check device |  |  |
|  | certified / traceable to WMO | Bid page Sr. No. |  |
|  | Agency Certificate | Bid page Sr. No. |  |
|  | Country of Origin | Bid page Sr. No. |  |
|  | Coloured Literature which can be downloaded from webs | Bid page Sr. No. |  |
| 17.3 |  |  |  |
|  | **(C) AMBIENTTEMPERATURE** | **Make & Model** |  |
|  | Range | : -10 o C to 60 o C |  |
|  | Accuracy | ± 0.2 o C or better (with radiation shield) |  |
|  | Response | 10 seconds in still air |  |
|  | Resolution | 0.1 °C |  |
|  | Sensor type | Resistance type |  |
|  | Response time | 10 sec or better |  |
|  | Calibration device / Calibration check device |  |  |
|  | certified / traceable to WMO | Bid page Sr. No. |  |
|  | Agency Certificate | Bid page Sr. No. |  |
|  | Country of Origin | Bid page Sr. No. |  |
|  | Coloured Literature which can be downloaded from webs | Bid page Sr. No. |  |
| 17.4 |  |  |  |
|  | **(D) RELATIVEHUMIDITY** | **Make & Model** |  |
|  | Range : 0 to 100% RH | Range : 0 to 100% RH |  |
|  | Accuracy : ± 3.0 % or better | Accuracy : ± 3.0 % or better |  |
|  | Resolution : 1% | Resolution : 1% |  |
|  | Sensor type : Capacitive / Solid State | Sensor type : Capacitive / Solid State |  |
|  | Response Time : 10 sec or better | Response Time : 10 sec or better |  |
|  | Calibration device / Calibration check device |  |  |
|  | certified / traceable to WMO | Bid page Sr. No. |  |
|  | Agency Certificate | Bid page Sr. No. |  |
|  | Country of Origin | Bid page Sr. No. |  |
|  | Coloured Literature which can be downloaded from webs | Bid page Sr. No. |  |
| 17.5 |  |  |  |
|  | **(E) SOLAR RADIATION** | **(E) SOLAR RADIATION** |  |
|  | Range | 0 to 1500 W/m2 or better |  |
|  | Accuracy | ± 5.0 % or better |  |
|  | Resolution | 5W/m2 |  |
|  | Sensor type | Silicon Photo diode |  |
|  | Calibration device / Calibration check device |  |  |
|  | certified / traceable to WMO | Bid page Sr. No. |  |
|  | Agency Certificate | Bid page Sr. No. |  |
|  | Country of Origin | Bid page Sr. No. |  |
|  | Coloured Literature which can be downloaded from webs | Bid page Sr. No. |  |
| 17.6 |  |  |  |
|  | **(F) RAINFALL** | (F) 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 | suitable sensor |  |
|  | Response Time | 10 sec or better |  |
|  | Calibration device / Calibration check device |  |  |
|  | certified / traceable to WMO | Bid page Sr. No. |  |
|  | Agency Certificate | Bid page Sr. No. |  |
|  | Country of Origin | Bid page Sr. No. |  |
|  | Coloured Literature which can be downloaded from webs | Bid page Sr. No. |  |
| 17.7 |  |  |  |
|  | **(G) TELESCOPIC CRANK – UP METEOROLOGIC** | Make & Model |  |
|  | 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 power the instruments mounted on the tower. |  |  |
|  | 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 |  |
|  | Guy Rope |  |  |
| 18 |  | | |
|  | **Split Air - Conditioner 2 Ton X 2 Nos** |  |  |
|  | The Indoor units should be running alternatively at an interval of four hour (time can be changed) timer control and the temperature inside the station should be maintain inside during all the time including peak summer months | **Make & Model** |  |
|  | Cooling Capacity | 7000 W |  |
|  | Star Rating | BEE 5 star Inverter with Copper Coil |  |
|  | Indoor Noise Level | 40-50 dB A(cooling) |  |
|  | Control Type | Remote |  |
|  | Compressor | Inverter |  |
|  | Refrigerant | Ecofriendly |  |
|  | Feature | filter clean Indicator, defrosting Sensor |  |
|  | Power supply | 230 volts □10volts AC and 50 Hz □3% |  |
|  | Standard Warranty | Standard Warranty |  |
|  | Remote | LCDWireless. |  |
|  | Stabiliser | 4 KW Copper 160 to 290 V |  |
|  | Coloured Literatue | Bid Page Sr. No. |  |
| 19 |  | | |
|  | **Split Air - Conditioner 1 Ton X 1 Nos** |  |  |
|  |  |  |  |
|  | The Indoor units should be running in the UPS room to control the temperature inside during all the time including peak summer months | **Make & Model** |  |
|  | Cooling Capacity | 3400 W |  |
|  | Star Rating | BEE 5 star Inverter with Copper Coil |  |
|  | Indoor Noise Level | 40-50 dB A(cooling) |  |
|  | Control Type | Remote |  |
|  | Compressor | Inverter |  |
|  | Refrigerant | Ecofriendly |  |
|  | Feature | filter clean Indicator, defrosting Sensor |  |
|  | Power supply | 230 volts □10volts AC and 50 Hz □3% |  |
|  | Standard Warranty | Standard Warranty |  |
|  | Remote | LCDWireless. |  |
|  | Stabiliser | suitable Copper 160 to 290 V |  |
|  | Coloured Literature | Bid Page Sr. No. |  |
| 20 |  | | |
|  | **Online Uninterrupted Power Supply (UPS) 10 KVA** | |  |
|  |  |  |  |
|  | Online UPS 10 KVA Three phase Input & Single Phase Output with 1 Hour backup(for Airconditioner) | **Make & Model** |  |
|  |  |  |  |
|  | a) Capacity | 10 KVA |  |
|  | b) Technology : PWM using IGBT / MOSFETS | PWM using IGBT |  |
|  | c) Crest Factor : More than 3: 1 | More than 3:1 |  |
|  | d) Input Voltage : 415 V AC | 415 V AC |  |
|  | Voltage Range : ± 25% | ± 25% |  |
|  | Frequency : 50 Hz ± 3% | 50 Hz ± 3% |  |
|  | e) Output Voltage : 230 V AC | 230 V AC |  |
|  | Voltage regulation | : ± 1% |  |
|  | Frequency | 50 Hz ± 3% |  |
|  | Frequency Regulation | : ± 0.01% |  |
|  | Wave form | Pure Sine Wave |  |
|  | f) Battery Battery type | Sealed maintenance free |  |
|  | Back up time | 1 Hour at full load |  |
|  | Battery Capacity | For required backup (Battery calculation should be enclosed) |  |
|  | Recharge time | 5 hrs. to 90% after complete discharge |  |
|  | g) Distortion | Less than 1% on linear load |  |
|  | h) Power factor | 0.9 to 1 |  |
|  | i) Indicator : L.E.D. – Battery Charge, Load level, on | L.E.D. indication or display for Battery Charge, Load level, on Line, Over load, On Battery, replace battery |  |
|  | j) Alarm : Audible alarmforbattery backup, | Audible alarm for battery backup, battery low, and fault |  |
|  | k) Protections Surge : Surge suppression meets BIS or | Surge suppression meets BIS or international standard |  |
|  | Overload : Fuse & current limited | Fuse & current limted |  |
|  | Short circuit | Fuse & current limited & cut – off |  |
|  | Battery low cut-off | No battery drain after cut - off |  |
|  | Overload capacity | 110% for continuous load |  |
|  | Efficency | More than 90% |  |
|  | Environment Operating Temp | 0-50 degree C |  |
|  | Operating Hum | 10% to 95% (Non Condensing) |  |
|  | audiable Noise | Less than 45 dB (at 1 meter) |  |
|  | Automatic Phase Sequencer |  |  |
|  | Coloured Litrature | Bid page Sr. No. |  |
| 21 |  | | |
|  | **Online Uninterrupted Power Supply (UPS) 5 KVA** | |  |
|  |  |  |  |
|  | **Online UPS 5 KVA Three phase Input & Single Phase Output with 2 Hours backup (for Analysers)** | **Make & Model** |  |
|  |  |  |  |
|  | a) Capacity | 5 KVA |  |
|  | b) Technology : PWM using IGBT / MOSFETS | PWM using IGBT |  |
|  | c) Crest Factor : More than 3: 1 | More than 3:1 |  |
|  | d) Input Voltage : 415 V AC | 230 V AC |  |
|  | Voltage Range : ± 25% | ± 25% |  |
|  | Frequency : 50 Hz ± 3% | 50 Hz ± 3% |  |
|  | e) Output Voltage : 230 V AC | 230 V AC |  |
|  | Voltage regulation | : ± 1% |  |
|  | Frequency | 50 Hz ± 3% |  |
|  | Frequency Regulation | : ± 0.01% |  |
|  | Wave form | Pure Sine Wave |  |
|  | f) Battery Battery type | Sealed maintenance free |  |
|  | Back up time | 1 Hour at full load |  |
|  | Battery Capacity | For required backup (Battery calculaation should be enclosed) |  |
|  | Recharge time | 5 hrs. to 90% after complete discharge |  |
|  | g) Distortion | Less than 1% on linear load |  |
|  | h) Power factor | 0.9 to 1 |  |
|  | i) Indicator | L.E.D. or display indication for Battery Charge, Load level, on Line, Over load, On Battery, replace battery |  |
|  | j) Alarm | Audible alarm for battery backup, battery low, and fault |  |
|  | k) Protections Surge | Surge suppression meets BIS or international standard |  |
|  | Overload | Fuse & current limted |  |
|  | Short circuit | Fuse & current limited & cut – off |  |
|  | Battery low cut-off | No battery drain after cut - off |  |
|  | Overload capacity | 110% for continuous load |  |
|  | Efficency | More than 90% |  |
|  | Environment Operating Temp | 0-50 degree C |  |
|  | Operating Hum | 10% to 95% (Non Condensing) |  |
|  | audiable Noise | Less than 45 dB (at 1 meter) |  |
|  | automatic phase sequencer |  |  |
|  | Coloured Literature | Bid Page Sr No. |  |
| 22 |  | | |
|  | **CAAQMS Shelter & Canopy with sampling line, internal fittings, instruments racks, electrical fittings and gas line fittings, tools** |  |  |
|  | Shelter Manufacturer | **Make** |  |
|  | 1.2 mm Precoated Sheet for outer Panal and 175 micron Zinc Oxide Coating | Test certificate from Manufacturer should be produced during inspection and provide to owner during supply |  |
|  | Frame Galvanisation 175 Gm per square meter as per IS277 | Test certificate from Manufacturer should be produced during inspection and provide to owner during supply |  |
|  | 2 mm PVC Coated Aluminium Sheet on 4 mm marine plywood |  |  |
|  | PUF thickness at Roof top & wall 100 mm |  |  |
|  | Shelter Structure Drawing Enclosed / enclosure page Sr. No. |  |  |
|  | Doors X 2 Nos with isolated 3 point locking & door handle flush fitted |  |  |
|  | 19 mm Marine Plyboard & 2 mm Thick Vinayl flooring |  |  |
|  | Canopy all four sides 1.5 Feet of 1.2mm pre coated sheet |  |  |
|  | Separate UPS Room as per drawing |  |  |
|  | 19" Rack (set of Three) with Air circulation facility, Temp sensor, Back side door. Temperature should be recorded in DAS |  |  |
|  | 10 port Gas Sampling hood of borosilicate Glass covered with SS pipe, Moisture removal device, heater, temperature control device |  |  |
|  | Sample Air flow senseor in Gas sampling hood | Uni-directional sample air flow measuring device should at the sampling system to measure the flow of ambient air through sampling system. The output of signal should be connected to computer to ascertain the continuous flow of sample from ambient air. The suction pump operational status should also be connected to the computer as a separate channel. |  |
|  | Cylinder housing with cylinder stand & Chain for safety with exhaust fan |  |  |
|  | Air- Conditioner Caging with canopy. Canopy should be of 1.2 mm precoated sheet of the colour of shelter |  |  |
|  | Copper Chemical Earthing - 2 Nos |  |  |
|  | Lightening Arrestor with Copper Chemical Earthing 1 Nos |  |  |
|  | Cup-board - 01 No as per drawing |  |  |
|  | Table - 01 No & Chair - 02 Nos Make & Model |  |  |
|  | Tool kit with tools as per list provided in the bid including special tools for the analysers. |  |  |
|  | Outdoor lights with Solar Inverter & automatic switching ON/Off as per sunset & sunrise |  |  |
|  | Station Internal Light |  |  |
|  | Movement Sensor to switch off/on internal light |  |  |
|  | Room Temperature & RH Sensor |  |  |
|  | Safety Switches |  |  |
|  | Fire Extinguisher X 2 Nos. |  |  |
|  | Emergency Light |  |  |
|  | Folding Aluminium Ladder |  |  |
|  | Vaccum Cleaner |  |  |
|  | Over Voltage protection |  |  |
|  | Emergency cutoff switch with Thermostate - 02 Nos |  |  |
|  | Power Distribution Panal with Air conditioner switching device. |  |  |
|  | Junction Box with ELCB outside of shelter |  |  |
|  | Power Cable 25 mm Al for three phase power connection as per requirement |  |  |
|  | Energy Meter mounting provision |  |  |
|  | Security Guard Cabin wooden or panaled 6 X 6 feet on proper foundation and grouted Drawing should be enclosed bid page Sr No. |  |  |
|  | Chair & Table Make & Model. Literature should be enclosed. Bid Page Sr. No. should be mentioned |  |  |
|  | Washroom with water connection & drainage connection |  |  |
|  | Proper Light & Fan in the Security Room |  |  |
|  | Sign Board Stainless Steel 1500 X 900 fix with spacer x 2 Nos |  |  |
| 23 |  |  |  |
|  | **Station Foundation as per specification 6000mm L X6000mm W X 300mm Height from ground. Height can vary depending upon site level. Top of platform RCC. Steps of maximum 150 mm at both doors.** |  |  |
|  | Foundation Drawing enclosed / Anexxture page Sr. No |  |  |
| 24 |  |  |  |
|  | **Highly Polished Aluminium 10 Ltr Water capacity Calibration Gas Cylinders** |  |  |
|  | Calibration Gas supplier |  |  |
|  | NIST Treacable calibration Gas SO2, NO2, CO, VOC, NH3, |  |  |
|  | Grade 1 N2 gas in 47 Ltr water capacity Carbon Steel Cylinder cylinder for VOC X 2 Nos |  |  |
|  | duel stage SS regulators with SS diaphragm for all gases |  |  |
|  | Teflon or SS tubing for calibration gases from Cylinder to MGC |  |  |
| 25 |  |  |  |
|  | **SOPs, Calibration and Maintenance Schedules** |  |  |
|  | (Attach document) |  |  |
|  | USEPA/TUV/MSERT/ approval certificate and MGC test certificate |  |  |
|  | Test Certificate of Analysers |  |  |
|  | Test Certificate of Pre-coated sheet |  |  |
|  | Test certificate of Ply Boards |  |  |
|  | NIST Treacable certificate of calibration Gases |  |  |
|  | Chemical Earthing certificate |  |  |
|  | Test certificate of UPS, AC etc. |  |  |
|  | IS & CFR certificate of software |  |  |
|  | SOP enclosed |  |  |
|  | Calibration schedule enclosed |  |  |
|  | Maintenance schedule of analysers, AC, UPS and other accessories enclosed |  |  |
|  | Manuals of all analysers, UPS, AC and other devices if require |  |  |
| 26 |  |  |  |
| **Pre-Requisites for installation of equipment** |  |  |
| New Power Connection of 12 KVA at Station |  |  |
| New Power Connection of 2 KVA at Displays (if require) |  |  |
|  | New Broadband connection / lease line at AAQMS, RO Office, Central Staton & Display Board as per requirement |  |  |
| 27 |  |  | |
| **Site for Station, display board & security guard cabin.** | **Will be provided by Owner** | |
| **approach road for movement of crane, truck etc., water connection, public grivances for security & engineer should be kept in mind for site selection.** |
| **Separate room or cabin for Central Server at PPCB HO Premises** |
|  | **Documents for site for station foundations, display sites, power and broadband or Leaseline connection along with Purchase Order** |

|  |  |  |
| --- | --- | --- |
| **Technical Check Sheet-2** | | |
| **Name and Address of the Bidder** | | |
|  | | |
| **Sr. No** | **Tender No. & Date** | **Bidder's Response** |
| 1 | Sale of Bid date & time |  |
| 2 | Pre-bid Meeting |  |
| 3 | Corrigendum uploading date |  |
| 4 | Last date of bid submission |  |
| 5 | Last date for submission of hard copy of tender fee & EMD |  |
| 6 | Date & Time of Opening of technical bid |  |
| **QUALIFICATION CRIETERIA BEFORE OPENING OF TECHNICAL BID** | | |
| **Sr. No.** | **Particular** | **Bidder's Response** |
| 1 | Tender Fee as DD / Amount / DD or BG Validity |  |
| 2 | EMD as BG / DD / Validity |  |
| 3 | If calimed EMD exemption |  |
| 4 | MSME documents |  |
| 5 | MSME Claim justificaton |  |
| i | Investment |  |
| ii | Turnover |  |
|  | BID Qualification status |  |
| **QUALIFICATION CRIETERIA FOR TECHNICAL EVALUATION OF BID** | | |
| **Sr. No.** | **Particular** | **Bidder's Response** |
| 1 | **Clause 2. This invitation for the bid is open to any bidder who is reputed manufacturer (Original Equipment Manufacturer) or authorised representative of the Manufacturer, who on its own or along with his associate as O&M partner meets the qualifying requirements stipulated hereunder for particiapation in the tender.** |  |
| 1 | Authorisation letter is enclosed in case of Authorised Representative is bidder. Bid Attachement Page No. |  |
| 2 | Copy of purchase order enclosed in support of above |  |
| II.i | Purchase Order issued in the name of / P.O. No & Date |  |
| Supplier is OEM or Authorised Representative or O&M Partner against this PO |  |
| Page No. of Bid enclosure against P.O. |  |
| Name of Client |  |
| No of Stations and name of Items in brief |  |
| Name of Client |  |
| Page No. of Bid enclosure against I&C |  |
| II.ii | Purchase Order issued in the name of / P.O. No & Date |  |
| Supplier is OEM or Authorised Representative or O&M Partner against this PO |  |
| Page No. of Bid enclosure against P.O. |  |
| Name of Client |  |
| No of Stations and name of Items in brief |  |
| Name of Client |  |
| Date of Supply / Installation / Commissioning Copy of I&C report is enclosed |  |
| Page No. of Bid enclosure against I&C |  |
| II.iii | Purchase Order issued in the name of / P.O. No & Date |  |
| Supplier is OEM or Authorised Representative or O&M Partner against this PO |  |
| Name of Client |  |
| No of Stations and name of Items in brief |  |
| Name of Client |  |
| Date of Supply / Installation / Commissioning Copy of I&C report is enclosed |  |
| 2 | **CLAUSE 2.1 The bidder and its authorised representative should have atleast five years experience in satisfactory Operation & Maintenance of real time ambient air quality monitoring systems** |  |
| 2a | Name & address of O&M Service provider OEM / Authorised Representative / O&M Partner |  |
| 2b | O&M Service Provider is OEM or Authorised Representative or O&M Partner against this PO |  |
| 2c | Authorisation Letter from OEM for O&M Partner is enclosed. Bid Page No. |  |
| II.i | Purchase Order against O&M services issued in the name of /P.O. No & Date |  |
| O&M Serivce Provider is OEM or Authorised Representative or O&M Partner against this PO |  |
| Name of Client |  |
| No of Stations under Operation & Maintenance and name of Items in brief |  |
| Date of Start of Operation & Maintenance contract |  |
| Years Completed in providing O&M services |  |
|  | Purchase Order against O&M serivces issued in the name of / P.O. No & Date |  |
| II.ii | O&M Service Provider is OEM or Authorised Representative or O&M Partner against this PO |  |
| Name of Client |  |
| No of Stations under Operation & Maintenance and name of Items in brief |  |
| Date of Start of Operation & Maintenance contract |  |
| Years Completed in providing O&M services |  |
| III.iii | Purchase Order against O&M serivces issued in the name of / P.O. No & Date |  |
| O&M Service Provider is OEM or Authorised Representative or O&M Partner against this PO |  |
| Name of Client |  |
| No of Stations under Operation & Maintenance and name of Items in brief |  |
| Date of Start of Operation & Maintenance contract |  |
| Years Completed in providing O&M services |  |
| 2d | O&M partner has experience of providing Operation & Maintenance Services for similar system as per specification of bid or any deviation |  |
| 2e | O&M Partner has employees as per tender qualification requirement and enclosed resume of all employees. Bid Page No. |  |
| 3 | **Clause 2.2 For all the items not manufactured by the bidder i.e. Analysers, Monitors,Calibrators and Sensors, the bidders should be authorised by the manufacturers for these items as per the format "Form of letter of authority" provided as attachment 3 of section III, except where make is prescribed. NOTE: IN CASE OF AUTHORISED REPRESENTATIVE, CONFIRMATION OF AUTHORISATION LETTER ENCLOSED IS TO BE GIVEN BEFORE EACH ANALYSER MENTIONED BELLOW WITH BID PAGE NO.** |  |
| 3.a | SO2 Analyser - OEM or Authorised Representative & in case of Autohorised Representative, experience on the make offered |  |
| 3.b | NO-NO2-NOX Analyser - OEM or Authorised Representative & in case of Autohorised Representative, experience on the make offered |  |
| 3.c | NH3 Analyser - OEM or Authorised Representative & in case of Autohorised Representative, experience on the make offered |  |
| 3.d | CO Analyser - OEM or Authorised Representative& in case of Autohorised Representative, experience on the make offered |  |
| 3.e | PM10 Analyser - OEM or Authorised Representative & in case of Autohorised Representative, experience on the make offered |  |
| 3.f | PM2.5 Analyser - OEM or Authorised Representative & in case of Autohorised Representative, experience on the make offered |  |
| 3.g | VOC Analyser - OEM or Authorised Representative & in case of Autohorised Representative, experience on the make offered |  |
| 3.h | O3 Analyser - OEM or Authorised Representative & in case of Autohorised Representative, experience on the make offered |  |
| 3.i | Weather Sensors - OEM or Authorised Representative & in case of Autohorised Representative, experience on the make offered |  |
| 3.j | DAS - OEM or Authorised Representative & in case of Autohorised Representative, experience on the make offered |  |
| 3.k | Central Software - OEM or Authorised Representative & in case of Autohorised Representative, experience on the make offered |  |
| 3.l | Multi Point Gas Calibrator - OEM or Authorised Representative & in case of Autohorised Representative, experience on the make offered |  |
| 3.m | Confirm that any bidder has not enclosed authorisation letter from same manufacturer for same model |  |
| 4 | **Clause 2.3 Bidder or their authorized representative should have A MINIMUM TURNOVER of at least …………….Lacs OVER EACH OF THE LAST 03 YEARS to execute the contract.** |  |
| 4.a | Balance sheet of the year enclosed Bid Page No. |  |
| 4.b | Balance sheet of the year enclosed Bid Page No. |  |
| 4.c | Balance sheet of the year enclosed Bid Page No. |  |
| 5 | **Clause 2.4** The bidder should furnish information on all past supplies along with satisfactory performance certificate, in "Performance Statement" as per attachment No. 8 of Section III and minimum two Nos documentary evidences (client certificates in favours of bidder or manufacturers of equipment) in support of the satisfactory networking and operation of similar air monitoring stations. |  |
| 5.a | Performance Statement as per attachment No 8 Enclosed |  |
| 5.b | Documentary evidences enclosed |  |
| I.i | Performance Statement issued in the name of OEM / Authorized Representative / O&M Partner |  |
| I.ii | Detail of Clint who issued Performance Statement including address and contact No. |  |
| I.iii | Detail of Performance Statement issuing authority with email ID & Mobile No. |  |
| I.iv | Ref. No. & date of Performance statement. Bid Page No. |  |
| II.i | Performance Statement issued in the name of OEM / Authorized Representative / O&M Partner |  |
| II.ii | Detail of Clint who issued Performance Statement including address and contact No. |  |
| II.iii | Detail of Performance Statement issuing authority with email ID & Mobile No. |  |
| II.iv | Ref. No. & date of Performance statement. Bid Page No. |  |
| 6 | **Clause 2.6 The bidder / O&M partner shall furnish an undertaking regarding carrying out satisfactory O&M of at least 06 Nos similar CAAQMS as covered in this document as per Terms & conditions of the document over the last 03 years on behalf of bidder. This inform is to be provided as per attachment 5 & 9 of Section III** |  |
| 6.a | Attachment 5 enclosed bid page no. |  |
| 6.b | Attachment 9 enclosed bid page no. |  |