

**PROJECT: 5 x 800 MW YADADRI****Annexure-1****CONTINUOUS AMBIENT AIR QUALITY MONITORING SYSTEM(CAAQMS)**

Broad break up of items under CAAQMS is as below:

<b>S. No.</b>	<b>Description</b>	<b>Station 1</b>	<b>Station 2</b>	<b>Station 3</b>	<b>Station 4</b>	<b>Total Quantity</b>
1.	SO <sub>2</sub> Analyzer	1	1	1	1	04 No.
2.	NO <sub>x</sub> Analyzer	1	1	1	1	04 No.
3.	CO Analyzer	1	1	1	1	04 No.
4.	CO <sub>2</sub> Analyzer	1	1	1	1	04 No.
5.	Ozone (O <sub>3</sub> ) Analyzer	1	-	-	-	01 No.
6.	PM <sub>2.5</sub> Analyzer	1	1	1	1	04 No.
7.	PM <sub>10</sub> Analyzer	1	1	1	1	04 No.
8.	Multipoint Calibrator with Calibration Gas Cylinders	1	1	1	1	04 Set
9.	Gas Sampling System with Zero Air Generator	1	1	1	1	04 Set
10.	PC based Local Data Acquisition System consisting with B/W Laser Jet Printer	1	1	1	1	04 No.
11.	Central Data Acquisition System consisting with B/W Laser Jet Printer	1	-	-	-	01 No.
12.	UPS – minimum 5 KVA with 3 - phase input and 1- phase output along with Servo Controlled Voltage Stabilizer	1	1	1	1	04 Set
13.	Analyser Shelter including accessories	1	1	1	1	04 Set
14.	RF Wireless System	-	-	-	-	01 Set
15.	Optical Fiber Cable (OFC) & Accessories: a. Armoured OFC for Industrial use - 20 Km Length b. Transmitters & Receivers modems with associated accessories	-	-	-	-	01 Set
16.	Meteorological Monitoring Station (MMS)	1	-	-	-	01 Set
17.	LED Display Board at Stations	1	1	1	1	04 Nos.
18.	LED Display Board at Security Gate	-	-	-	-	01 Nos.
19.	Consumables & Spares for 2 year operation after commissioning					01 Set

All above items are required to be supplied as per clause no. 1.0 to 1.11 of specifications. This is a turnkey contract. Any other item required to complete the scope of manufacturing, supply, erection & commissioning of 4 AAQMS stations with 1 central DAS & 5 display boards, with RF based interconnectivity, redundant OFC connectivity between stations is in scope of bidder.

**1.0 Ambient Air Quality Monitoring System**

An online monitoring system shall be provided at 4 (four) locations at Yadadri Thermal Power Station to monitor the ambient air quality.

AAQMS Station no. 1 (01 Station) would monitor air quality parameters i.e. SO<sub>2</sub>, NO<sub>x</sub>, PM<sub>2.5</sub>, PM<sub>10</sub>, CO, CO<sub>2</sub>, O<sub>3</sub> and meteorological parameters i.e. wind direction, wind speed, relative humidity, ambient temperature, ambient pressure, solar radiation, rain fall.

AAQMS Station no. 2,3 & 4 (03 Stations) would monitor air quality parameters i.e. SO<sub>2</sub>, NO<sub>x</sub>, PM<sub>2.5</sub>, PM<sub>10</sub>, CO & CO<sub>2</sub>.

**1.1 General Technical Requirements**

The basic components for the AAQMS shall be analysers, analyser racks, multi gas calibration system, meteorological monitoring system, data acquisition system, AAQMS station, redundant servers, power supply, spares, consumables.

All ambient gas analyzers, multi gas calibrators and dust monitors shall conform to the U.S. EPA reference OR equivalent method. A proof of approvals and certificates of the above compliance along with copy of the test report (in English) from internationally reputed agencies such as US EPA, TUV/UAB of Germany, Enviro Canada, Enviro Japan, EEC shall be furnished.

**1.2 Analysers**

All the Analysers shall be microprocessor based with calibration facility, local LCD display and output OPC, Ethernet RS 232/485, TCP/IP, 4-20mA, relays, wireless connectivity to Central DAS through Local DAS. All Analysers shall be mounted in 19 inch analyser rack.

**1.3 Other basic requirements of analysers shall be as follows,**

(a) SO<sub>2</sub> Analyser– UV fluorescence type, linearity shall be +/- 1% of span or better, accuracy shall be +/- 1ppb or better.

(b) NO<sub>x</sub> Analyser- Chemiluminescence type, linearity shall be +/- 1% of span or better, accuracy shall be +/- 0.4 ppb or better.

(c) CO Analyser - NDIR type, linearity shall be +/- 1.5% of span or better, accuracy shall be +/- 1% of reading or better.

(d) CO<sub>2</sub> Analyser - NDIR type, linearity shall be +/- 1.5% of span or better, accuracy shall be +/- 1% of reading or better.

(e) O<sub>3</sub> Analyser - UV photometry type, linearity shall be +/- 1% of span or better accuracy shall be +/- 1ppb or better.

(f) PM<sub>2.5</sub> Analyser - Beta attenuation measurement, accuracy shall be 2 micro gm/m<sup>3</sup> or better.

(g)PM10 Analyser - Beta attenuation measurement, accuracy shall be 2 micro gm/m<sup>3</sup> or better.

#### 1.4 Analyser Accessories

- All Analysers shall be mounted in 19 inch analyser rack. The cabinet shall be fully wired with pneumatic connections.
- Gas sampling system shall be provided with SS gas sampling hood, moisture trap, air compressor, air dryer etc.
- To cross check the built-in-calibration facility of the analysers/monitors a standard microprocessor based rack mounted multi gas calibration system for each AAQMS station with fast response time.
- Automatic calibration unit shall be complete with solenoid valves and zero & span gas cylinders. Calibration cylinders shall be suitable for at least six months of operation.
- Flow measurement accuracy shall be +/- 2% or better, 4-20 mA output Ethernet connectivity for remote access shall also be provided.

#### 1.5 Meteorological Monitoring System (MMS)

The system shall be providing in any one of the AAQMS station. One meteorological mast of telescopic type and 10-meter height from ground level to be placed adjacent to the AAQMS station. The mast is required for mounting the meteorological sensor. Necessary hangers and holders along with electrical grounding set shall be provided for installation of the sensors. Material of construction of the mast shall be metallic and robust and shall be resistant to atmospheric corrosion.

##### 1.5.1 Other basic requirements of MMS shall be as follows,

- (a) Wind direction —Wind vane, potentiometric type – resolution 1 degree, accuracy +/- 3 degrees or better, SS shaft, aluminum vane, brass housing.
- (b) Wind speed sensor – anemometer (3 cup), frequency proportional to wind speed, accuracy +/- 2% FSD or better, brass housing, SS shaft.
- (c) Relative humidity sensor — thin film capacitor type, accuracy +/-3% FSD or better, sintered filter, weather shield.
- (d) Ambient temperature sensor—RTD type, accuracy +/- 0.2% degrees C, weather shield.
- (e) Ambient pressure sensor—solid state pressure transducer.
- (f) Solar radiation sensor — Thermocouple and metal film type.

(g) Rain fall sensor (rain gauge) – Dual chamber tripping bucket, FRP body and funnel, SS bucket.

### **1.6 Data Acquisition System (DAS)**

PC based DAS shall be provided in each local and central AAQMS station there shall be four nos. local station and on one no. central station DAS.

Functional requirements of DAS shall be, but not limited to the following.

- Communication through soft link to the analysers and monitors.
- Automatic alarm messages through GSM SMS and email transfer.
- Calculate vector mean of wind direction and wind speed.
- Graphic & tabular display of the current air quality monitoring data.
- Generation of wind roses, pollution roses, histogram, event analysis etc.
- Data reports, calibration reports and status reports for user selectable time period (instantaneous or averaged over a period of 1/2hr, 1hr, 4hr, 8hr, 24hrs, weekly, monthly, yearly, more than ten years).
- Control panel windows for controls of each analyser, including calibration.
- Alarm for all parameters.
- Real time multi- curves/graphs, tables, curves over user selectable time period and generation of reports.
- Historic multi-curves/graphs, Tables, curves over user selectable time period and generation of reports.
- Real time monitoring of all the analyzers and sensors with diagnostics.

#### **1.6.1 DAS at local stations**

The minimum requirements shall be one set of PC with core i7 processor with 24 inch LED monitor, b & w A4 laser jet printer, redundant Ethernet switch (Min 01 No.), cables, furniture, spares, consumables etc. for each local station.

#### **1.7 DAS at central station**

- The minimum requirement shall be one set of PC with core i7 processor with 24 inch LED monitor, b&w A4 laser jet printer, redundant Ethernet switch (Min 01 No.), cables, furniture, spares, consumables etc. for central station.
- This system shall collect data from all the local AAQMS station.
- In addition of the functional requirements as described above the DAS shall also perform a few activities such as data management, analysis and reporting over user defined



periods of all data from individual AAQMS station and display of the same, should have the facilities for calibration (zero & span) and measuring range, data backup facilities should be available. Minimum median, percentile, maximum, standard deviation frequency analysis and cumulative frequency analysis should be possible, should have the facilities of the following chart types like line & column chart, simple 3D, line & column chart, polar diagram and 3D perspective column chart.

- Each local AAQMS DAS shall be connected to central station DAS through RF wireless connectivity.
- Connectivity through Optical Fiber Cable (OFC): Each local AAQMS DAS shall be connected to Central DAS through redundant fiber optic cable. For this purpose, Armoured OFC for Industrial use - 20 Km Length, Transmitters & Receivers modems with associated accessories would be supplied by bidder. OFC must be armoured Single mode with minimum 4 core. Laying of cable is excluded from bidder's scope. Laying of OFC would be arranged by BHEL at site. Connectivity would be provided by bidder. Suitable hardware and software for the same would be supplied by bidder.
- Further, central station DAS shall be hooked on to plant DDCMIS network through redundant bidirectional OPC for transfer of all data related to AAQMS.
- Central control station shall update these values in PCB central servers as per TSPCB as well as in servers of CPCB and necessary software as well as hardware shall be provided as per the norms prevailing at the time of commissioning.

### 1.8 AAQMS Station

AAQMS shall be a completely assembled standalone shelter with analyser rack with analysers, sensors, compressors, DAS, gas sample and dust sample hoods, calibration gas cylinder, all internal piping, tubing, conduiting, junction boxes, earthing system, lighting electrode, antenna, windows air conditioner, power supply system, lamination, fire/ smoke detectors, fire extinguisher, tag plates etc.

**1.8.1 Shelter:** External wall shall be made of stainless steel (minimum 2mm thick) and internal wall shall be made of painted galvanized sheet steel (minimum 1.5 mm thick). Flooring material shall be with aluminum chequered plate. The insulation material for the wall and roof shall be made of rock wool (minimum 100 mm thick). Shelter shall be provided with welded base frame. There shall be main and emergency door with door handle with lock and key, panic bar, SS hinges, half glazed window.

- a) External dimensions: Approximate 3000 mm (L) X 3000 mm (W) X 2500 mm (H).
- b) Canopy: Metal canopy

**1.8.2 Accessories:**

- a) **Air conditioners - 2 Nos.**, 1.5-ton capacity of standard make.  
(The Voltage Stabilizer and Change over unit will remain common)
- b) Rack Cabinet: Standard 19" rack cabinet made of heavy grade aluminum profiles with a facility of telescopic slides overload protection, power distribution box to accommodate "Monitoring analyzers" should be provided.
- c) Furniture including 2 nos. high back cushioned wheeled chairs, cupboard and desk for mounting PC and printer.
- d) Carbon monoxide Detector hooked up for the External Hooter – 01 No.
- e) Internal and External Lighting – 01 Lot.
- f) Fire Extinguisher – 02 No
- g) Steel Ladder
- h) Lock and Key Door.
- i) Light arrangement
- j) Lying of cables / cable trays outside/Inside Analyzer room.
- k) Trenching of cables outside/inside Analyzer room.

One-point power supply would be provided near AAQMS Shelter and inter distribution of power supply will be done by the Vendor.

**1.8.3 AAQMS Foundation/ Platform**

Cement Concrete foundation/ Platform of suitable size (Approximate 4000 mm – Length, 4000 mm –Width and 1000 mm Height) would be constructed by the bidder at each AAQMS location. Shelters would be installed at platform of each AAQMS location as part of scope of supply.

**1.8.4 Earth Pit for AAQMS.**

The Supplier shall provide suitable earth pit for AAQMS.

**1.9 Power Supply**

UPS – minimum 5 KVA with 3 - phase input and 1- phase output along with Servo Controlled Voltage Stabilizer with 60 min back-up would be supplied at each AAQMS.

**1.10 LED display Boards:**

One LED display board with each AAQMS shelter of size 3ft X 6ft and one LED board at plant main gate /security gate. LED display board will be of multiline with red, yellow/orange and green color.

LED display board specification is as below:

- Type : LED display
- No. of Lines : 04 Lines
- Size : 3 feet x 6 feet
- Enclosure : IP-65
- Protection : Canopy
- Visibility : 50m during daytime
- Platform, mounting structure and Interfacing of centralized AAQMS DAS with electronic display board through suitable wireless communication link, necessary Hardware and Software for the same is also to be included.

**1.11 Other Requirement**

- a. All consumables and replaceable as required for 2 years operation post commissioning will be provided by bidder.
- b. Offered CAAQMS system would fully meet the requirement of technical specification and fully comply the CPCB requirements and guidelines (as on bid opening date). In case of any deviation w.r.t. technical specification or non-suitability to process requirement, bidder will take full responsibility and corrective action without any cost implication to end user.
- c. Bidder will be responsible for installation, commissioning of the communication system and bidder will also cover RF survey, system design, frequency liasoning, frequency license & royalty charges from the date of commissioning. License & Renewal charges upto 2 year period post commissioning would be in bidder's scope. Necessary documents for the same would be provided by End user.

**2.0 General Terms & Conditions**

**2.1 Document:** Hard copy of O&M Manual in English language giving complete technical information for operation and maintenance of the equipment.

**2.2 Installation and Commissioning:** The supplier shall install & commission the equipment at site. Supplier will demonstrate the performance of the Equipment and all its accessories to ensure compliance with complete specifications & parameters quoted by them to the satisfaction of BHEL/end user. Training to End User at site during installation should be provided for routine maintenance, operation and safety purpose.

**2.3 Warrantee:** The equipment shall be warranted for satisfactory performance for a period of 18 months from the date of installation and 24 months from the date of dispatch, whichever is later.

**2.4 Packing & Dispatch:** The equipment / accessories shall be packed in a suitable water proof/vibration proof packing box capable of bearing air and road transit hazards. Packing box shall be properly identified and marked with BHEL's (India) Purchase Order Number. Also, "PCRI HWR" should be written in bold letters on all four sides of the packing box.

**AMBIENT AIR QUALITY MONITORING SYSTEMS (AAQMS) – MANDATORY SPARES**

Ambient Air Quality Monitoring System		
S.N.	Scope of Supply	Qty.
1.	Mandatory Spares as per Annexure-2	1 set

**1.0 Mandatory Spares against AAQMS Package as below:**

Mandatory Spares for AAQMS				
S.N.	List of items	Quantity Package 1	Quantity Package 2	Total Quantity (No.)
1.	O-Ring for:			
	a. SO <sub>2</sub> Analyzer	02	02	04
	b. NO <sub>x</sub> Analyzer	02	02	04
	c. CO Analyzer	02	02	04
	d. CO <sub>2</sub> Analyzer	02	02	04
	e. PM <sub>2.5</sub> Analyzer	02	02	04
	f. PM <sub>10</sub> Analyzer	02	02	04
	g. Ozone Analyzer	02	02	04
2.	Filter			
	a. SO <sub>2</sub> Analyzer	01	01	02
	b. NO <sub>x</sub> Analyzer	01	01	02
	c. CO Analyzer	01	01	02
	d. CO <sub>2</sub> Analyzer	01	01	02
3.	Filter Tape			
	a. Filter Tape for PM <sub>2.5</sub> Analyzer	04	04	08
	b. Filter Tape for PM <sub>10</sub> Analyzer	04	04	08
4.	Lamp (UV)			08
5.	Complete Analyzer Instrument			
	a. SO <sub>2</sub> Analyzer	01	01	02
	b. NO <sub>x</sub> Analyzer	01	01	02
	c. CO Analyzer	01	01	02
	d. CO <sub>2</sub> Analyzer	01	01	02
	e. PM <sub>2.5</sub> Analyzer	01	01	02
	f. PM <sub>10</sub> Analyzer	01	01	02
	g. Ozone Analyzer	01	01	02
6.	Pump Repair/Maintenance Kit for NO <sub>x</sub> Analyser	01	01	02
7.	Flow sensors/ Flow meter/Flow Limiter	08	08	16
8.	Standard gas for span & zero calibration			
	a. Calibration Cylinder with Regulator for SO <sub>2</sub> analyzer	01	01	02
	b. Calibration Cylinder with Regulator for NO <sub>x</sub> analyzer	01	01	02

**Note: Entire quantity of mandatory spares would be supplied in 02 Packages (Package 1 & Package 2). Each package will contain 50% quantity as defined above.**

## **2.0 General Terms & Conditions**

**2.1 Document:** Hard copy of O&M Manual in English language giving complete technical information for mandatory spares.

**2.4 Packing & Dispatch:** The spares shall be packed in a suitable water proof/vibration proof packing box capable of bearing air and road transit hazards. Packing box shall be properly identified and marked with BHEL's (India) Purchase Order Number. Also, "***PCRI HWR MANDATORY SPARES***" should be written in bold letters on all four sides of the packing box.

**AMBIENT AIR QUALITY MONITOR (AAQM) FOR CHEMICAL LABORATORY**

General: 02 Set AAQM stations for measurement of TSP, SO<sub>2</sub>, NO<sub>x</sub> are required for Chemical Laboratory. First station would be installed at Yadadri TPS Stage-1 and Second station would be installed at Yadadri TPS Stage-2. Space/Room for these two AAQM Stations would be provided by End User in Chemical Lab building. Bidder will install and commission these two systems as standalone systems in Chemical Laboratory for measurement of TSP, SO<sub>2</sub> & NO<sub>x</sub>.

Broad break up of items under AAQM Stations are as below:

S.N.	Description	Stage-I	Stage-II	Total Quantity
1.	SO <sub>2</sub> Analyzer	1	1	02 Set
2.	NO <sub>x</sub> Analyzer	1	1	02 Set
3.	TSP Analyzer	1	1	02 Set
4.	Multipoint Calibrator with Calibration Gas Cylinders	1	1	02 Set
5.	Gas Sampling System with Zero Air Generator	1	1	02 Set
6.	PC based Local Data Acquisition System consisting with B/W Laser Jet Printer	1	1	02 Set
7.	19" Rack for Analyzers	1	1	02 Set
8.	UPS (minimum 3 KVA) with 30 minutes back up (1 - phase input and 1- phase output) for Analyzers and PC	1	1	02 Set
9.	Window Air Conditioner (1.5 T)-01 No., 01 No. Computer Table & 02 Nos. Office Chair	1	1	02 Set

Any other item required to complete the scope of manufacturing, supply, erection & commissioning of two AAQM stations in chemical laboratory is in scope of bidder.

## 1.0 Ambient Air Quality Monitor

AAQMS in chemical lab stage 1& 2 would monitor air quality parameters i.e. SO<sub>2</sub>, NO<sub>x</sub> & TSP.

### 1.1 General Technical Requirements

The basic components for the AAQMS shall be analysers, analyser racks, multi gas calibration system, data acquisition system, power supply.

All ambient gas analyzers, multi gas calibrators and dust monitors shall conform to the U.S. EPA reference OR equivalent method. A proof of approvals and certificates of the above compliance along with copy of the test report (in English) from internationally reputed agencies such as US EPA, TUV/UAB of Germany, Enviro Canada, Enviro Japan, EEC shall be furnished.

### 1.2 Analysers

All the Analysers shall be microprocessor based with calibration facility, local LCD display and output OPC, RS 232/485, TCP/IP, 4-20mA, relays. All Analysers shall be mounted in 19 inch analyser rack.

### 1.3 Other basic requirements of analysers shall be as follows,

- (a) SO<sub>2</sub> Analyser– UV fluorescence type, linearity shall be +/- 1% of span or better, accuracy shall be +/- 1ppb or better.
- (b) NO<sub>x</sub> Analyser- Chemiluminescence type, linearity shall be +/- 1% of span or better, accuracy shall be +/- 0.4 ppb or better.
- (c) TSP Analyser - Beta attenuation measurement, accuracy shall be 2 micro gm/m<sup>3</sup> or better.

### 1.4 Analyser Accessories

- All Analysers shall be mounted in 19 inch analyser rack. The cabinet shall be fully wired with pneumatic connections.
- Gas sampling system shall be provided with gas sampling hood, moisture trap, air compressor, air dryer etc.
- To cross check the built-in-calibration facility of the analysers/monitors a standard microprocessor based rack mounted multi gas calibration system for each AAQM station with fast response time.
- Automatic calibration unit shall be complete with solenoid valves and zero & span gas cylinders. Calibration cylinders shall be suitable for at least six months of operation.



### 1.5 Data Acquisition System (DAS)

PC based DAS shall be provided with ambient air quality monitor. Functional requirements of DAS shall be, but not limited to the following.

- Communication through soft link to the analysers and monitors.
- Calculate vector mean of wind direction and wind speed.
- Graphic & tabular display of the current air quality monitoring data.
- Generation of wind roses, pollution roses, histogram, event analysis etc.
- Data reports, calibration reports and status reports for user selectable time period (instantaneous or averaged over a period of 1/2hr, 1hr, 4hr, 8hr, 24hrs, weekly, monthly, yearly, more than ten years).
- Control panel windows for controls of each analyser, including calibration.
- Alarm for all parameters.
- Real time multi- curves/graphs, tables, curves over user selectable time period and generation of reports.
- Historic multi-curves/graphs, Tables, curves over user selectable time period and generation of reports.
- Real time monitoring of all the analyzers and sensors with diagnostics.

### 1.6 Other Accessories for each AAQM Station

The minimum requirements shall be one set of PC with core i7 processor with 24 inch LED monitor, Window Air Conditioner (1.5 T), Computer Table & Office Chairs, cables, spares & consumables for 1 year operation for two stations.

**1.7 Rack Cabinet:** Standard 19" rack cabinet made of heavy grade aluminum profiles with a facility of telescopic slides overload protection, power distribution box to accommodate "Monitoring analyzers" should be provided.

### 1.8 AAQM Station

AAQM Station shall be a completely assembled standalone system in chemical lab with analyser rack with analysers, sensors, compressors, DAS, gas sample and dust sample hoods, calibration gas cylinder, junction boxes, earthing system, lighting electrode, power supply system, etc. Cabin for AAQM Station installation would be provided by End User.

### 1.9 Power Supply

UPS – minimum 3 KVA with 1 - phase input and 1- phase output along with 30 min back-up would be supplied at each AAQM Station.

**2.0 General Terms & Conditions**

**2.1 Document:** Hard copy of O&M Manual in English language giving complete technical information for operation and maintenance of the equipment.

**2.2 Installation and Commissioning:** The supplier shall install & commission the equipment at chemical lab building in stage 1 &2 of power plant. Supplier will demonstrate the performance of the Equipment and all its accessories to ensure compliance with complete specifications & parameters quoted by them to the satisfaction of BHEL/end user. Training to End User at site during installation should be provided for routine maintenance, operation and safety purpose.

**2.3 Warrantee:** The equipment shall be warranted for satisfactory performance for a period of 18 months from the date of installation and 24 months from the date of dispatch, whichever is later.

**2.4 Packing & Dispatch:** The equipment / accessories shall be packed in a suitable water proof/vibration proof packing box capable of bearing air and road transit hazards. Packing box shall be properly identified and marked with BHEL's (India) Purchase Order Number. Also, "PCRI HWR" should be written in bold letters on all four sides of the packing box.

## **Annexure-4**

### **Pre- Qualifying Requirement (PQR):**

1. The firm of Bidder should have in existence since past 3 years as on date of bid opening. Supporting documents, “e.g. Certificate of Incorporation/ Profit & Loss account/Balance Sheet/ GST returns/Any other acceptable document certified by CA” proving the firm is active in past 3 years to be provided.
2. Bidder Average Annual Turnover (Last 3 Years): 200 Lakhs.
3. The bidder shall offer analyzers (i.e. SO<sub>2</sub>, NO<sub>x</sub>, CO, CO<sub>2</sub>, PM<sub>10</sub>, PM<sub>2.5</sub>, and O<sub>3</sub>) whose guaranteed and trouble free performance has been proven at-least for one year in one thermal power station for continuous ambient air monitoring from the bid opening date. The bidder shall submit supporting documents, e.g. copy of PO placed/ Dispatch documents/Commissioning Report/Experience Certificate, and details of end user concerned official for supply, satisfactory operation of the commissioned analyzer.
4. The bidder should have supplied at least 01 No. similar CAAQMS station in last 05 years from the bid opening date.
5. In case the bidder is sourcing analyzers from an OEM, Tender specific authorization letter is required from the manufacturer, clearly indicating contact details like Name, Email and address of manufacturer.

**INTEGRITY PACT****Between**

Bharat Heavy Electricals Ltd. (BHEL), a company registered under the Companies Act 1956 and having its registered office at "BHEL House", Siri Fort, New Delhi - 110049 (India) hereinafter referred to as "The Principal", which expression unless repugnant to the context or meaning hereof shall include its successors or assigns of the ONE PART

**and**

\_\_\_\_\_, (description of the party along with address), hereinafter referred to as "The Bidder/ Contractor" which expression unless repugnant to the context or meaning hereof shall include its successors or assigns of the OTHER PART

**Preamble**

The Principal intends to award, under laid-down organizational procedures, contract/s for \_\_\_\_\_

\_\_\_\_\_ (hereinafter referred to as "Contract"). The Principal values full compliance with all relevant laws of the land, rules and regulations, and the principles of economic use of resources, and of fairness and transparency in its relations with its Bidder(s)/ Contractor(s).

In order to achieve these goals, the Principal will appoint panel of Independent External Monitor(s) (IEMs), who will monitor the tender process and the execution of the contract for compliance with the principles mentioned above.

**Section 1- Commitments of the Principal**

- 1.1 The Principal commits itself to take all measures necessary to prevent corruption and to observe the following principles: -
  - 1.1.1 No employee of the Principal, personally or through family members, will in connection with the tender for, or the execution of a contract, demand, take a promise for or accept, for self or third person, any material or immaterial benefit which the person is not legally entitled to.
  - 1.1.2 The Principal will, during the tender process treat all Bidder(s) with equity and reason. The Principal will in particular, before and during the tender process, provide to all Bidder(s) the same information and will not provide to any Bidder(s) confidential/ additional information through which the Bidder(s) could obtain an advantage in relation to the tender process or the contract execution.
  - 1.1.3 The Principal will exclude from the process all known prejudiced persons.
- 1.2 If the Principal obtains information on the conduct of any of its employees which is a penal offence under the Indian Penal Code 1860 and Prevention of Corruption Act 1988 or any other statutory penal enactment, or if there be a substantive suspicion in this regard, the Principal will inform its Vigilance Office and in addition can initiate disciplinary actions.

**Section 2 - Commitments of the Bidder(s)/ Contractor(s)**

- 2.1 The Bidder(s)/ Contractor(s) commit himself to take all measures necessary to prevent corruption. The Bidder(s)/ Contractor(s) commits himself to observe the following principles during participation in the tender process and during the contract execution.

- 2.1.1 The Bidder(s)/ Contractor(s) will not, directly or through any other person or firm, offer, promise or give to the Principal or to any of the Principal's employees involved in the tender process or the execution of the contract or to any third person any material, immaterial or any other benefit which he/ she is not legally entitled to, in order to obtain in exchange any advantage of any kind whatsoever during the tender process or during the execution of the contract.
- 2.1.2 The Bidder(s)/ Contractor(s) will not enter with other Bidder(s) into any illegal or undisclosed agreement or understanding, whether formal or informal. This applies in particular to prices, specifications, certifications, subsidiary contracts, submission or non-submission of bids or any other actions to restrict competitiveness or to introduce cartelization in the bidding process.
- 2.1.3 The Bidder(s)/ Contractor(s) will not commit any penal offence under the relevant Indian Penal Code (IPC) and Prevention of Corruption Act; further the Bidder(s)/ Contractor(s) will not use improperly, for purposes of competition or personal gain, or pass on to others, any information or document provided by the Principal as part of the business relationship, regarding plans, technical proposals and business details, including information contained or transmitted electronically.
- 2.1.4 Foreign Bidder(s)/ Contractor(s) shall disclose the name and address of agents and representatives in India and Indian Bidder(s)/ Contractor(s) to disclose their foreign principals or associates. The Bidder(s)/ Contractor(s) will, when presenting his bid, disclose any and all payments he has made, and is committed to or intends to make to agents, brokers or any other intermediaries in connection with the award of the contract.
- 2.2 The Bidder(s)/ Contractor(s) will not instigate third persons to commit offences outlined above or be an accessory to such offences.
- 2.3 The Bidder(s)/ Contractor(s) shall not approach the Courts while representing the matters to IEMs and shall await their decision in the matter.

### **Section 3 - Disqualification from tender process and exclusion from future contracts**

If the Bidder(s)/ Contractor(s), before award or during execution has committed a transgression through a violation of Section 2 above, or acts in any other manner such as to put his reliability or credibility in question, the Principal is entitled to disqualify the Bidder(s)/ Contractor(s) from the tender process, terminate the contract, if already awarded, exclude from future business dealings and/ or take action as per the separate "Guidelines on Banning of Business dealings with Suppliers/ Contractors", framed by the Principal.

### **Section 4 - Compensation for Damages**

- 4.1 If the Principal has disqualified the Bidder (s) from the tender process before award / order acceptance according to Section 3, the Principal is entitled to demand and recover the damages equivalent to Earnest Money Deposit/ Bid Security.
- 4.2 If the Principal is entitled to terminate the Contract according to Section 3, or terminates the Contract in application of Section 3 above, the Bidder(s)/ Contractor (s) transgression through a violation of Section 2 above shall be construed breach of contract and the Principal shall be entitled to demand and recover from the Contractor an amount equal to 5% of the contract value or the amount equivalent to Security Deposit/ Performance Bank Guarantee, whichever is higher, as damages, in addition to and without prejudice to its right to demand and recover compensation for any other loss or damages specified elsewhere in the contract.

**Section 5 - Previous Transgression**

- 5.1 The Bidder declares that no previous transgressions occurred in the last 3 (three) years with any other company in any country conforming to the anti-corruption approach or with any other Public Sector Enterprise in India that could justify his exclusion from the tender process.
- 5.2 If the Bidder makes incorrect statement on this subject, he can be disqualified from the tender process or the contract, if already awarded, can be terminated for such reason or action can be taken as per the separate "Guidelines on Banning of Business dealings with Suppliers/ Contractors", framed by the Principal.

**Section 6 - Equal treatment of all Bidder (s)/ Contractor (s) / Sub-contractor (s)**

- 6.1 The Principal will enter into Integrity Pacts with identical conditions as this Integrity Pact with all Bidders and Contractors.
- 6.2 In case of Sub-contracting, the Principal Contractor shall take the responsibility of the adoption of Integrity Pact by the Sub-contractor(s) and ensure that all Sub-contractors also sign the Integrity Pact.
- 6.3 The Principal will disqualify from the tender process all Bidders who do not sign this Integrity Pact or violate its provisions.

**Section 7 - Criminal Charges against violating Bidders/ Contractors /Subcontractors**

If the Principal obtains knowledge of conduct of a Bidder, Contractor or Subcontractor, or of an employee or a representative or an associate of a Bidder, Contractor or Subcontractor which constitutes corruption, or if the Principal has substantive suspicion in this regard, the Principal will inform the Vigilance Office.

**Section 8 -Independent External Monitor(s)**

- 8.1 The Principal appoints competent and credible panel of Independent External Monitor (s) (IEMs) for this Integrity Pact. The task of the IEMs is to review independently and objectively, whether and to what extent the parties comply with the obligations under this Integrity Pact.
- 8.2 The IEMs are not subject to instructions by the representatives of the parties and performs his functions neutrally and independently. He reports to the CMD, BHEL.
- 8.3 The IEMs shall be provided access to all documents/ records pertaining to the Contract, for which a complaint or issue is raised before them as and when warranted. However, the documents/records/information having National Security implications and those documents which have been classified as Secret/Top Secret are not to be disclosed.
- 8.4 The Principal will provide to the IEMs sufficient information about all meetings among the parties related to the Contract provided such meetings could have an impact on the contractual relations between the Principal and the Contractor. The parties offer to the IEMs the option to participate in such meetings.

- 8.5 The advisory role of IEMs is envisaged as that of a friend, philosopher and guide. The advice of IEMs would not be legally binding and it is restricted to resolving issues raised by a Bidder regarding any aspect of the tender which allegedly restricts competition or bias towards some Bidders. At the same time, it must be understood that IEMs are not consultants to the Management. Their role is independent in nature and the advice once tendered would not be subject to review at the request of the organization.
- 8.6 For ensuring the desired transparency and objectivity in dealing with the complaints arising out of any tendering process or during execution of Contract, the matter should be examined by the full panel of IEMs jointly, who would look into the records, conduct an investigation, and submit their joint recommendations to the Management.
- 8.7 The IEMs would examine all complaints received by them and give their recommendations/ views to the CMD, BHEL at the earliest. They may also send their report directly to the CVO, in case of suspicion of serious irregularities requiring legal/ administrative action. Only in case of very serious issue having a specific, verifiable Vigilance angle, the matter should be reported directly to the Commission. IEMs will tender their advice on the complaints within 30 days.
- 8.8 The CMD, BHEL shall decide the compensation to be paid to the IEMs and its terms and conditions.
- 8.9 IEMs should examine the process integrity, they are not expected to concern themselves with fixing of responsibility of officers. Complaints alleging mala fide on the part of any officer of the Principal should be looked into by the CVO of the Principal.
- 8.10 If the IEMs have reported to the CMD, BHEL, a substantiated suspicion of an offence under relevant Indian Penal Code / Prevention of Corruption Act, and the CMD, BHEL has not, within reasonable time, taken visible action to proceed against such offence or reported it to the Vigilance Office, the IEMs may also transmit this information directly to the Central Vigilance Commissioner, Government of India.
- 8.11 After award of work, the IEMs shall look into any issue relating to execution of Contract, if specifically raised before them. As an illustrative example, if a Contractor who has been awarded the Contract, during the execution of Contract, raises issue of delayed payment etc. before the IEMs, the same shall be examined by the panel of IEMs. Issues like warranty/ guarantee etc. shall be outside the purview of IEMs.
- 8.12 However, the IEMs may suggest systemic improvements to the management of the Principal, if considered necessary, to bring about transparency, equity and fairness in the system of procurement.
- 8.13 The word 'Monitor' would include both singular and plural.

## **Section 9 - Pact Duration**

- 9.1 This Integrity Pact shall be operative from the date this Integrity Pact is signed by both the parties till the final completion of contract for successful Bidder, and for all other Bidders 6 months after the Contract has been awarded. Any violation of the same would entail disqualification of the bidders and exclusion from future business dealings.
- 9.2 If any claim is made/ lodged during currency of this Integrity Pact, the same shall be binding and continue to be valid despite the lapse of this Pact as specified above, unless it is discharged/ determined by the CMD, BHEL.

**Section 10 - Other Provisions**

- 10.1 This Integrity Pact is subject to Indian Laws and exclusive jurisdiction shall be of the competent Courts as indicated in the Tender or Contract, as the case may be.
- 10.2 Changes and supplements as well as termination notices need to be made in writing.
- 10.3 If the Bidder(s)/ Contractor(s) is a partnership or a consortium or a joint venture, this Integrity Pact shall be signed by all partners of the partnership or joint venture or all consortium members.
- 10.4 Should one or several provisions of this Integrity Pact turn out to be invalid, the remainder of this Integrity Pact remains valid. In this case, the parties will strive to come to an agreement to their original intentions.
- 10.5 Only those bidders / contractors who have entered into this Integrity Pact with the Principal would be competent to participate in the bidding. In other words, entering into this Integrity Pact would be a preliminary qualification.
- 10.6 In the event of any dispute between the Principal and Bidder(s)/ Contractor(s) relating to the Contract, in case, both the parties are agreeable, they may try to settle dispute through Mediation before the panel of IEMs in a time bound manner. In case, the dispute remains unresolved even after mediation by the panel of IEMs, either party may take further action as the terms & conditions of the Contract. The fees/expenses on dispute resolution through mediation shall be shared by both the parties. Further, the mediation proceedings shall be confidential in nature and the parties shall keep confidential all matters relating to the mediation proceedings including any settlement agreement arrived at between the parties as outcome of mediation. Any views expressed, suggestions, admissions or proposals etc. made by either party in the course of mediation shall not be relied upon or introduced as evidence in any further arbitral or judicial proceedings, whether or not such proceedings relate to the dispute that is the subject of mediation proceedings. Neither of the parties shall present IEMs as witness in any Alternative Dispute Resolution or judicial proceedings in respect of the dispute that was subject of mediation.

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For & On behalf of the Principal  
(Office Seal)

Place \_\_\_\_\_  
Date \_\_\_\_\_

Witness: \_\_\_\_\_  
(Name & Address) \_\_\_\_\_  
\_\_\_\_\_

-----  
For & On behalf of the Bidder/ Contractor  
(Office Seal)

Place \_\_\_\_\_  
Date \_\_\_\_\_

Witness: \_\_\_\_\_  
(Name & Address) \_\_\_\_\_  
\_\_\_\_\_



## Certificate

In line with Government Public Procurement Order No. P-45021/2/2017-BE-II dt. 15.06.2017 & P-45021/2/2017-PP (BE-II) dated 28.05.2018, we hereby certify that we M/s \_\_\_\_\_(supplier name) are local supplier meeting the requirement of minimum local content (50%) as defined in above orders for the material against Enquiry No. \_\_\_\_\_

Details of location at which local value addition will be made is as follows:

\_\_\_\_\_  
\_\_\_\_\_

We also understand, false declarations will be in breach of the Code of Integrity under Rule 175(1)(i)(h) of the General Financial Rules for which a bidder or its successors can be debarred for up to two years as per Rule 151 (iii) of the General Financial Rules along with such other actions as may be permissible under law.

Seal and Signature of Supplier

**Buyer Specific ATC document for Ambient Air Quality Monitoring System (AAQMS) of  
Yadadri project site**

1.	<p><b>MDCC (Material dispatch clearance certificate) Clause:</b></p> <p>Please note that material shall be dispatched only after issue of Material dispatch clearance certificate (MDCC) by BHEL. For issue of MDCC, you are required to submit the set of documents (i.e. Packing list, Guarantee / Warrantee certificate, Complete test / inspection reports &amp; Calibration certificates etc.).</p> <p>BHEL will release MDCC within 07 days from the date of receipt of complete documents as detailed above.</p> <p>The delivery period of 150 days is inclusive of 07 days taken by BHEL to issue MDCC.</p>						
2.	<p><b>Quality Requirement:</b></p> <p>(i) Final Inspection will be witnessed by customer (TSGENCO) / customer’s appointed Third Party Inspection Agency (TPIA) at works of successful bidder.</p> <p>(ii) Successful bidder to submit quality plan in line with technical specification in prescribed format for approval of customer / BHEL within 30 days of Purchase Order. BHEL will provide approval of quality plan within 30 days from the date of submission. Any delay in submission / approval will be in respective account.</p> <p>The delivery period of 150 days is inclusive of time for quality plan submission and approval.</p>						
3.	<p><b>Customer Approval:</b></p> <p>At present, only following makes are pre-approved by customer:</p> <table><tr><th>Sr. No.</th><th>Name of Item</th><th>Pre-approved Makes</th></tr><tr><td>1</td><td>Ambient Air Quality Monitoring System (AAQMS)</td><td>1. M/s Envirotech 2. M/s Thermo Environmental Instruments 3. M/s Environment SA 4. M/s Teledyne Advanced Pollution</td></tr></table> <p>Offers from other than above makes are also acceptable subject to customer approval, for which bidders are requested to provide supply details / commissioning report of the offered item.</p> <p><b>BHEL will open the price bid of only those bidders who are finally approved by end customer.</b></p>	Sr. No.	Name of Item	Pre-approved Makes	1	Ambient Air Quality Monitoring System (AAQMS)	1. M/s Envirotech 2. M/s Thermo Environmental Instruments 3. M/s Environment SA 4. M/s Teledyne Advanced Pollution
Sr. No.	Name of Item	Pre-approved Makes					
1	Ambient Air Quality Monitoring System (AAQMS)	1. M/s Envirotech 2. M/s Thermo Environmental Instruments 3. M/s Environment SA 4. M/s Teledyne Advanced Pollution					
4.	<p><b>Technical Specification Requirement:</b></p> <p>1. Please quote your valuable offer as per BHEL Specifications enclosed with bid documents as follows:</p> <p><b>Annexure-1:</b> Specification for AAQMS- Main Package <b>Annexure-2:</b> Specification for AAQMS- Mandatory Spares <b>Annexure-3:</b> Specification for AAQM (Ambient Air Quality Monitor) for Chemical Laboratory</p> <p>2. Bidders are requested to upload point-wise compliance of BHEL Specifications along with the offer as token of acceptance</p>						

5.	<p><b>Pre-Qualification Requirement (PQR):</b></p> <p>The Pre-Qualification Requirements have been made part of bid as <b>Annexure-4</b>. All the bidders should ensure submission of complete details and documents as called for in the same. The offers submitted by the bidders would be scrutinized with respect to Pre-Qualification Requirements first.</p> <p><b>Techno-Commercial offer of only those bidders shall be evaluated who meet the Pre-Qualification Requirements.</b></p>
6.	<p><b>Payment Terms:</b></p> <ul style="list-style-type: none"> <li>• 90% payment after receipt of material at site against submission of PBG @ 10% of Order value valid till entire Guarantee / Warranty period. The PBG will be in BHEL format and from one of the BHEL consortium banks. For name of BHEL consortium bank, please visit our website <a href="http://hwr.bhel.com">hwr.bhel.com</a>.</li> <li>• Balance 10% payment after installation and commissioning at site.</li> <li>• Payment will be released by BHEL within: <ul style="list-style-type: none"> <li>- 45 days for Micro and Small enterprises</li> <li>- 60 days for Medium enterprises</li> <li>- 90 days for Non MSME enterprises</li> </ul> </li> </ul>
7.	<p><b>Delivery Period:</b></p> <p>The material should be supplied within 150 days of purchase order.</p> <p>This period includes following:</p> <ul style="list-style-type: none"> <li>• 30 days from the date of PO for supplier to submit the documents (drawings / datasheet &amp; Quality Plan) for approval.</li> <li>• 30 days for documents approval by BHEL / End User</li> <li>• 07 days for inspection of material by end customer / customer's nominated TPIA</li> <li>• 07 days for issuing dispatch clearance from the date of receipt of documents mentioned in Clause No. 1 of this document.</li> <li>• 07 days for arranging dispatch of material from the date of providing MDCC by BHEL.</li> </ul> <p>Any delay in document submission / approval / Inspection will be in respective account.</p>
8.	<p><b>Post Order Document approval:</b></p> <p>Drawings/Data sheets/Quality Plan (QP) will be submitted to BHEL for BHEL/customer approval within 30 days of purchase order. The documents shall be complete in all respects. To ensure completeness of documents (as per specifications) BHEL would have in person meeting/ video-conference within first 15 days of PO (if requested by supplier well in advance). However, delay in documents approval due to vague / in-complete submission of documents shall be on supplier's account.</p> <p>BHEL will arrange the approval of the drawings/data sheets/QP within 30 days of their receipt. In case of delay on account of BHEL, delivery shall be re-scheduled accordingly.</p>

9.	<p><b>Validity:</b></p> <p>Offer will be valid for 180 days from bid end date and extensions thereof.</p> <p><b>BHEL will reserve the right to reject any or all quotations, quoting validity less than 180 days.</b></p>
10.	<p><b>Evaluation criteria:</b></p> <p>Evaluation will be done on the basis of Total Landed cost up to Yadadri project site (<b>item-wise</b>).</p> <p><u>Schedule-1</u> is comprised of complete scope covered in AAQMS Main Package (<b>Annexure-1</b>) and AAQMS- Mandatory Spares (<b>Annexure-2</b>). Thus, Total prices for complete scope of Annexure-1 and Annexure-2 are to be quoted against Schedule-1 in the price bid.</p> <p><u>Schedule-2</u> is comprised of AAQM (Ambient Air Quality Monitor) for Chemical Laboratory covered under <b>Annexure-3</b>. Thus, Total prices for complete scope of Annexure-3 are to be quoted against Schedule -2 in the price bid.</p> <p><b>Bidders can quote for single schedule also.</b></p>
11.	<p><b>Installation, Commissioning &amp; Training:</b></p> <p>The supplier shall install &amp; commission the equipment(s) at site. Supplier will demonstrate the performance of the Equipment and all its accessories to ensure compliance with complete specifications &amp; parameters quoted by them to the satisfaction of BHEL/end user. Training to End User at site during installation should be provided for routine maintenance, operation and safety purpose.</p> <p>Scope of Installation, Commissioning &amp; Training will be as per Technical Specifications i.e. <b>Annexure-1, Annexure-2 &amp; Annexure-3</b>.</p> <p><b><i>Cost of Installation, Commissioning and Training should be inclusive in the quoted prices.</i></b></p> <p>Installation, Commissioning and Training will be done at following address:</p> <p>ASST DIVISION. ENGINNER-STORES CONST. DIVI, 5 X 800MW YADADRI TPS VEERLAPALEM VIL. DAMERACHERLA MANDAL, DIST-NALGONDA-508207</p> <p><b><i>Failing to comply to the Installation, Commissioning and Training clause, the offer will be rejected straightaway.</i></b></p>
12.	<p><b>Document:</b></p> <p>Hard copy of O&amp;M Manual in English language giving complete technical information for operation and maintenance of the equipment(s) including Mandatory Spares is to be provided by successful bidder.</p>
13.	<p><b>Price Basis:</b></p> <p>Please confirm that prices have been quoted on F.O.R. Yadadri site basis.</p>
14.	<p><b>Warrantee:</b></p> <p>The equipment(s) shall be warranted for satisfactory performance for a period of 18 months from the date of installation and 24 months from the date of dispatch, whichever is later.</p> <p><b><i>Failing to comply to the warrantee clause, the offer will be rejected straightaway.</i></b></p>

15. **EARNEST MONEY DEPOSIT (EMD)**

13.1 Interested vendors must submit their offer along with the following Earnest Money Deposit (EMD) in a separate sealed envelope:

Details	Amount In INR	Amount in Foreign Currency	Type
EMD	<b>INR 2,00,000/-</b> (INR Two Lacs Only)	Equivalent Foreign currency	Refundable

13.2 EMD shall not carry any interest.

13.3 Modes of deposits will be as per General Terms and Conditions (GTC) GeM\_GTC\_4.0 v1.12\_16Aug23.

The demand draft shall be in favor of “BHEL Haridwar”. E-Payment is also acceptable. For e-payment, RTGS details are as mentioned below:

Bank Details	SWIFT Details of bank	Contact Details of Banker
STATE BANK OF INDIA RANIPUR BRANCH, OPP: BHEL MAIN GATE, SECTOR-5, RANIPUR, HARIDWAR, UTTRAKHAND, INDIA PIN CODE : 249403	SWIFT NO : SBININBB225 CC ACCOUNT NO : 10667995458 IFSC CODE : SBIN0000586	Chief Manager (IBD) Contact No. +91 1334 224201 +91 1334 226125 Fax: +91 1334 226512

13.4 MSE Suppliers, who are the manufacturer of offered items as per specification are exempted from submission of the EMD.

13.5 EMD exemption will be allowed as per criteria laid down in General Terms and Conditions (GTC) GeM\_GTC\_4.0 v1.12\_16Aug23.

13.6 Bids not accompanied with requisite EMD or bids accompanied with EMD of inadequate value shall be liable for rejection, wherever exemption is not allowed.

13.7 The bidder whose bid is technically not accepted will be informed & EMD wherever submitted shall be refunded after the finalization of the contract. EMD shall be forfeited in the event of bidder opting out after tender opening (PART-I).

13.8 Earnest money of successful bidder shall be returned only after receipt of Performance Bank Guarantee (PBG).

16. **General Clause:**

All other commercial terms and conditions will be governed by General Terms and Conditions (GTC) GeM\_GTC\_4.0 v1.12\_16Aug23.

17.	<p><b>Conflict of Interest among Bidders/ Agents:</b></p> <p>"A bidder shall not have conflict of interest with other bidders. Such conflict of interest can lead to anti-competitive practices to the detriment of Procuring Entity's interests. <b>The bidder, found to have a conflict of interest shall be disqualified.</b> A bidder may be considered to have a conflict of interest with one or more parties in this bidding process, if:</p> <ul style="list-style-type: none"> <li>a) they have controlling partner (s) in common; <b>or</b></li> <li>b) they receive or have received any direct or indirect subsidy/ financial stake from any of them; <b>or</b></li> <li>c) they have the same legal representative/agent for purposes of this bid; <b>or</b></li> <li>d) they have relationship with each other, directly or through common third parties, that puts them in a position to have access to information about or influence on the bid of another Bidder; <b>or</b></li> <li>e) Bidder participates in more than one bid in this bidding process. Participation by a Bidder in more than one Bid will result in the disqualification of all bids in which the parties are involved. However, this does not limit the inclusion of the components/ sub-assembly/Assemblies from. one bidding manufacturer in more than one bid; <b>or</b></li> <li>f) In cases of agents quoting in offshore procurements, on behalf of their principal manufacturers, one agent cannot represent two manufacturers or quote on their behalf in a particular tender enquiry. One manufacturer can also authorize only one agent/dealer. There can be only one bid from the following: <ul style="list-style-type: none"> <li>1. The principal manufacturer directly or through one Indian agent on his behalf; and</li> <li>2. Indian/foreign agent on behalf of only one principal, <b>or</b></li> </ul> </li> <li>g) A Bidder or any of its affiliates participated as a consultant in the preparation of the design or technical specifications of the contract that is the subject of the Bid; <b>or</b></li> <li>h) In case of a holding company having more <b>than</b> one independently manufacturing units, or more than one unit having common business ownership/management, only one unit should quote. Similar restrictions would apply to closely related sister companies. Bidders must proactively declare such sister/ common business/ management units in same/ similar line of business. "</li> </ul>
18.	<p><b>E-invoicing:</b></p> <p>E-invoicing under GST has been implemented w.e.f. 01.10.2022 for all the taxable persons having turnover more than Rs. 10 cr. it has been specified by the govt that it is mandatory to mention a valid unique invoice reference no. (IRN) and QR code as generated from govt. portal on a tax invoice. Based on such information, GST ITC as claimed by BHEL in GST returns shall be matched with the corresponding details uploaded by supplier in E-invoicing system.</p> <p>In case the vendor / contractor delays or fails to provide all the documents as per the purchase order / work order at the time of submitting tax invoice to BHEL, any subsequent financial loss to BHEL on account of vendor/contractor shall be to vendor's / contractor's account. BHEL has further right to take necessary steps to protect its interest at the time of release of payment. this further requires inclusion of IRN and QR code on tax invoice as announced by govt. of india w.e.f. 01.10.2022.</p>

19. **Integrity Pact:**

(a) IP is a tool to ensure that activities and transactions between the Company and its Bidders/ Contractors are handled in a fair, transparent and corruption free manner. Following Independent External Monitors OEMs) on the present panel have been appointed by BHEL with the approval of CVC to oversee implementation of IP in BHEL.

Sl.	IEM	Email
1.	Shri Otem Dai, IAS (Retd.)	<a href="mailto:iem1@bhel.in">iem1@bhel.in</a>
2.	Shri Bishwamitra Pandey, IRAS (Retd.)	<a href="mailto:iem2@bhel.in">iem2@bhel.in</a>
3.	Shri Mukesh Mittal, IRS (Retd.)	<a href="mailto:iem3@bhel.in">iem3@bhel.in</a>

(b) The IP as enclosed with the tender is to be submitted (duly signed by authorized signatory) along with techno-commercial bid (Part-I, in case of two/ three part bid). Only those bidders who have entered into such an IP with BHEL would be competent to participate in the bidding. In other words, entering into this Pact would be a preliminary qualification.

(c) Please refer Section-8 of IP for Role and Responsibilities of IEMs. In case of any complaint arising out of the tendering process, the matter may be referred to any of the above IEM(s). All correspondence with the IEMs shall be done through email only.

**Note:**

No routine correspondence shall be addressed to the IEM (phone/ post/ email) regarding the clarifications, time extensions or any other administrative queries, etc. on the tender issued. All such clarification/ issues shall be addressed directly to the tender issuing (procurement) department's officials whose contact details are provided below:

Details of contact person(s)-

Mr. Shashi Pal Designation: A. E. (PCRI-BOI) Pollution Control Research Institute HEEP, BHEL, Haridwar- 249403 Uttarakhand, India Email ID: <a href="mailto:palsh@bhel.in">palsh@bhel.in</a> Tel: +91 1334 28 1941	Mr. Deshraj Yadav Designation: Dy. Manager (PCRI-BOI) Pollution Control Research Institute HEEP, BHEL, Haridwar- 249403 Uttarakhand, India Email ID: <a href="mailto:deshraj@bhel.in">deshraj@bhel.in</a> Tel: +91 1334 28 1187
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20. **Arbitration Clause:**

In case of any dispute arising out of as in connection with this contract, the same shall be referred to arbitration under Arbitration & Conciliation Act 1996 of a sole arbitrator who shall be appointed by mutual consent of the parties. The seat & venue of arbitration shall be Haridwar.

The proceedings shall be conducted in English. The Governing law of contract shall be the substantive law of India.

21.	<p><b>Risk Purchase:</b></p> <p>In case of abnormal delays (beyond the maximum late delivery period as per LD clause) in supplies / defective supplies or non-fulfillment of any other terms and conditions given in Purchase Order, BHEL may cancel the Purchase Order in full or part thereof, and may also make the purchase of such material from elsewhere / alternative source at the risk and cost of the supplier. BHEL will take all reasonable steps to get the material from alternate source at optimum cost. If bidder does not agree to the above Risk Purchase Clause, BHEL reserves the right to reject the offer. In case for compelling reasons BHEL accepts the offer without acceptance of this clause by the bidder and in the eventuality of Risk Purchase, appropriate action will be taken as per BHEL extant rules. This will be without prejudice to any other right of BHEL under the contract or under General Law.</p> <p><b>Action against Bidders / vendor / supplier / contractor in case of default:</b></p> <p>In order to protect the commercial interests of BHEL, BHEL shall take action against supplies / contractors by way of suspension of business dealings, who either fail to perform or are in default without any reasonable cause, cause loss of business/ money/ reputation, indulge in malpractices, cheating, bribery, fraud or any other misconduct or formation of cartels so as to influence the bidding process or influence the price etc.</p> <p>Suspension of Business Dealings could be in the form of “Hold” or “Banning” a supplier/ contractor or a bidder and shall be as per “Guidelines for Suspension of Business Dealings with Suppliers/ Contractors” available at BHEL’s website <a href="https://www.bhel.com/guidelines-suspension-business-dealings-supplierscontractors">“https://www.bhel.com/guidelines-suspension-business-dealings-supplierscontractors”</a>.</p>
22.	<p><b>Packing &amp; Dispatch:</b></p> <p>1. The equipment / accessories covered in scope of Technical Specifications (Annexure-1 &amp; Annexure-3) shall be packed in a suitable water proof/vibration proof packing box capable of bearing air and road transit hazards. Packing box shall be properly identified and marked with BHEL's (India) Purchase Order Number. Also, “<b>PCRI HWR</b>” should be written in bold letters on all four sides of the packing box.</p> <p>2. Mandatory spares covered in scope of Technical Specification (Annexure-2) shall be packed in a suitable water proof/vibration proof packing box capable of bearing air and road transit hazards. Packing box shall be properly identified and marked with BHEL's (India) Purchase Order Number. Also, “<b>PCRI HWR MANDATORY SPARES</b>” should be written in bold letters on all four sides of the packing box.</p>
23.	<p><b>Acceptance of offers from country Sharing Land Border with India:</b></p> <p>I. Any bidder from a country which shares a land border with India will be eligible to bid in any procurement whether of goods, services (including consultancy services and non-consultancy services) or works (including turkey projects) only if the bidder is registered with the Competent Authority. Further, any bidder (including bidder from India) having specified Transfer of Technology (ToT) arrangement with an entity from a country which shares a land border with India, shall also require to be registered with the same competent authority.</p> <p>II. "Bidder" means any person or firm or company, including any member of a consortium or joint venture (that is an association of several persons, or firms or companies), every artificial juridical person not falling in any of the descriptions of bidders stated hereinbefore, including any agency branch or office controlled by such person, participating in a procurement process.</p>



III. "Bidder (or entity) from a country which shares a land border with India" for the purpose of this Order means: -

- a. An entity incorporated, established or registered in such a country; or
- b. A subsidiary of an entity incorporated, established or registered in such a country; or
- c. An entity substantially controlled through entities incorporated, established or registered in such a country; or
- d. An entity whose beneficial owner is situated in such a country; or
- e. An Indian (or other) agent of such an entity; or
- f. A natural person who is a citizen of such a country; or
- g. A consortium or joint venture where any member of the consortium or joint venture falls under any of the above

IV. The beneficial owner for the purpose of (iii) above will be as under:

1. In case of a company or Limited Liability Partnership, the beneficial owner is the natural person(s), who, whether acting alone or together, or through one or more juridical person, has a controlling ownership interest or who exercises control through other means.

Explanation:

- a. "Controlling ownership interest" means ownership of or entitlement to more than twenty-five per cent. of shares or capital or profits of the company;
- b. "Control" shall include the right to appoint majority of the directors or to control the management or policy decisions including by virtue of their shareholding or management rights or shareholders agreements or voting agreements;

2. In case of a partnership firm, the beneficial owner is the natural person(s) who, whether acting alone or together, or through one or more juridical person, has ownership of entitlement to more than fifteen percent of capital or profits of the partnership;

3. In case of an unincorporated association or body of individuals, the beneficial owner is the natural person(s), who, whether acting alone or together, or through one or more juridical person, has ownership of or entitlement to more than fifteen percent of the property or capital or profits of such association or body of individuals;

4. Where no natural person is identified under (1) or (2) or (3) above, the beneficial owner is the relevant natural person who holds the position of senior managing official;

5. In case of a trust, the identification of beneficial owners) shall include identification of the author of the trust, the trustee, the beneficiaries with fifteen percent or more interest in the trust and any other natural person exercising ultimate effective control over the trust through a chain of control or ownership.

V. An Agent is a person employed to do any act for another, or to represent another in dealings with third person.

VI. The successful bidder shall not be allowed to sub-contract works to any contractor from a country which shares a land border with India unless such contractor is registered with the Competent Authority.

VII. The registration shall be valid at the time of submission of bid and at the time of acceptance of bid.

VIII. If the bidder was validly registered at the time of acceptance / placement of order, registration shall not be a relevant consideration during contract execution.

**Note:** Following declarations would be required from bidders (if applicable):

(A) "I have read the clause regarding restrictions on procurement from a bidder of a country which shares a land border with India; I certify that this bidder is not from such a country or, if from such a country, has been registered with the Competent Authority. I hereby certify that this bidder fulfills all requirements in this regard and is eligible to be considered. [Where applicable, evidence of valid registration by the Competent Authority shall be attached.]"

(B) "I have read the clause regarding restrictions on procurement from a bidder having Transfer of Technology (ToT) arrangement. I certify that this bidder does not have any ToT arrangement requiring registration with the competent authority.

**OR**

\* have read the clause regarding restrictions on procurement from a bidder having Transfer of Technology (ToT) arrangement. I certify that this bidder has valid registration to participate in this procurement."