



BHEL, BHOPAL

(TENDER No. HSE/AIR/2020-21/W5)
HEALTH SAFETY & ENVIRONMENT ENGINEERING

Page 1 of 4

SCOPE OF WORK AND SPECIAL CONDITIONS

REV. 00

AMBIENT AIR QUALITY AND STACK MONITORING IN BHEL, BHOPAL**1.0 SCOPE OF WORK**

The contract covers ambient air quality and stack monitoring in BHEL, Bhopal as per NAAQS(CPCB). Collection of samples including sampling, testing and submission of reports is to be carried out on monthly basis. In case of contingency/emergency requirement, additional collection of samples and monitoring is to be carried out.

The stack and ambient air quality monitoring shall be done in accordance with The Air (Prevention and Control of Pollution) Act/Rules, The Environment (Protection) Act/Rules, notifications of Central Pollution Control Board, Rules/guidelines of MP Pollution Control Board or such applicable act/rule.

Rates are to be quoted on per monitoring basis (including collection of samples, testing and submission of reports). Work will be measured in per measurement basis, duly tested and after submission of reports.

BHEL reserves the right to vary the location of monitoring and the contractor will be bound to execute the same accordingly, at his quoted rate.

Co-ordination with concerned area in-charge has to be done by the contractor. For this, deployment of adequate communication and deployment of responsible manpower shall be required.

1. The bidder shall quote his rate considering cost of all materials, labour, required tools, tackles, vehicle for collection and transportation of samples & incidentals complete in all respect for carrying out the contracted work.
2. Schedule wise detail of work to be executed is as below

a. Stack Monitoring (Schedule No. 01)

Sampling in this schedule is to be carried out at 2 locations every month.

Sl. No.	Name & Location	Height	Frequency
01	Stack of FO Fired Boiler at Gas & Power Plant	51 Mtr Max	Once in a month
02	Stack of 6MW DG set at DG plant	58 Mtr Max	Once in a month
03	Stack at Electroplating Shop	15 Mtr Max	Once in Six months
04	Stack at Shot blasting plant	20 Mtr Max	Once in Six months

Contractor will be responsible for the following

- (i) Communicating with responsible In Charge for finalising date of monitoring.
- (ii) Collection of air data in previously treated collection tubes/vials/papers.
- (iii) Transportation of the collected samples to their respective labs for testing.
- (iv) Testing and generation of reports of the collected samples
- (v) Submission of the reports both in soft copy and hard copy area in-charge.

b. Ambient Air Quality Monitoring (Schedule No. 02)

Sampling in this schedule is to be carried out at following 7 locations every month on 24 hr basis.

- Factory Gate no 01
- Factory Gate no 05
- Factory Gate no 08
- Between Block1 & 1A
- Inside Gas & Power Plant



BHEL, BHOPAL

(TENDER No. HSE/AIR/2020-21/W5)
HEALTH SAFETY & ENVIRONMENT ENGINEERING

Page 2 of 5

SCOPE OF WORK AND SPECIAL CONDITIONS**REV. 00**

- Near Electroplating Shop
- Township Locality near Berkheda

Note: The exact locations of ambient air quality monitoring may change if needed during execution

Contractor will be responsible for the following

- Communicating with responsible In Charge for finalising date and location of monitoring.
- Collection of air data in fresh filter papers.
- Transportation of the collected samples to their respective labs for testing.
- Testing and generation of reports of the collected samples
- Submission of the reports both in soft copy and hard copy area in-charge.

3. Parameters to be monitored in the above schedules are as follows

Boiler Stack Monitoring (Schedule No 01)		
Sl. No.	Parameter	Unit
01	Ambient Temperature	°C
02	Flue Gas Temperature	°C
03	Velocity	mtr/sec
04	Suspended Particulate Matter (SPM)	mg/Nm ³
05	Sulphur Dioxide (SO ₂)	mg/Nm ³
06	Oxides of Nitrogen (NO _x)	mg/Nm ³
07	Carbon Monoxide (CO)	mg/Nm ³
DG set Stack Monitoring (Schedule No. 01)		
Sl. No.	Parameter	Unit
01	Ambient Temperature	°C
02	Flue Gas Temperature	°C
03	Velocity	mtr/sec
04	Suspended Particulate Matter (SPM)	mg/Nm ³
05	Sulphur Dioxide (SO ₂)	ppm
06	Oxides of Nitrogen (NO _x)	ppm
07	Carbon Monoxide (CO)	ppm
08	Non Methane Hydro Carbon (NMHC)	mg/Nm ³
Electroplating shop Stack Monitoring (Schedule No. 01)		
Sl. No.	Parameter	Unit
01	Acidic Fumes	ppm
02	Alkali Fumes	ppm
Shot Blasting Plant Stack Monitoring (Schedule No. 01)		
Sl. No.	Parameter	Unit
01	Particulate Matter	µg/m ³

Ambient Air Quality Monitoring (Schedule No. 02)		
Sl. No.	Parameter	Unit
01	Ambient Temperature	°C
02	Relative Humidity	%
03	Wind Direction	Direction
04	Wind Speed	Km/Hr
05	Particulate Matter (PM ₁₀)	µg/m ³
06	Particulate Matter (PM _{2.5})	µg/m ³
07	Sulphur Dioxide (SO ₂)	µg/m ³



BHEL, BHOPAL

(TENDER No. HSE/AIR/2020-21/W5)
HEALTH SAFETY & ENVIRONMENT ENGINEERING

Page 3 of 5

SCOPE OF WORK AND SPECIAL CONDITIONS**REV. 00**

08	Oxides of Nitrogen (NO _x)	µg/m ³
09	Carbon Monoxide (CO)	µg/m ³
10	Ozone (O ₃)	µg/m ³
11	Lead (Pb)	µg/m ³
12	Ammonia (NH ₃)	µg/m ³
13	Benzene	µg/m ³
14	Benzo(a)Pyrene (BaP)	ng/m ³
15	Arsenic (As)	ng/m ³
16	Nickel (Ni)	ng/m ³

2.0 PERIOD OF CONTRACT:

Full 12 months from the date of commencement or till completion of collection of samples as per schedule 1 and 2, whichever is earlier.

3.0 PRE QUALIFICATION CRITERIA

3.1 The bidder shall have valid approval in accordance with applicable law/rule from concerned authorities for air monitoring at the time of bidding.

3.2 Shall have accordance with acts/rules/notification as mentioned in 3.1, 4.5 and 4.6

3.3 In addition to above, following criteria are to be fulfilled:

(i) As per CVC guidelines, average financial turnover during last three years, ending 31st March 2019 should be at least 1.92 Lacs. Profit & Loss account and Balance Sheet should be submitted as proof of Avg Annual Turnover

AND

(ii) Experience of having carried out similar works of monitoring during last 7 years ending last day of Oct'20 should be either of following

a. Three similar completed works costing not less than 2.56 Lacs.

OR

b. Two similar completed works costing not less than 3.20 Lacs.

OR

c. One similar completed work costing not less than 5.12 Lacs.

Note: Similar works covers Ambient air quality monitoring/Stack air quality monitoring of minimum 30 mtrs height in accordance with The Air (Prevention and Control of Pollution) Act/Rules, The Environment (Protection) Act/Rules, notifications of Central Pollution Control Board, Rules/guidelines of MP Pollution Control Board or such applicable act/rule. Supporting documents like copy of work order and work completion certificate as proof of work completion to submitted.

4.0 OTHER CONDITIONS

4.1 The parameters of stack emission and ambient air quality, which will be monitored, with prescribed limits as required by relevant rule must be clearly mentioned by the bidder in their offer. Reports to be submitted to BHEL within 15 days from collection of sample.

4.2 The contractor shall be responsible for all acts and omissions of their staff and liabilities arising out of the acts and omissions of such act shall be borne by the contractor. BHEL shall not be responsible for any such acts, omissions or any liabilities arising there from.

4.3 Accident occurred during the course of company's work should be reported by the Contractors to BHEL immediately and certainly not later, than 24 hours. This should be followed by a detailed report from the Contractor.



BHEL, BHOPAL

(TENDER No. HSE/AIR/2020-21/W5)
HEALTH SAFETY & ENVIRONMENT ENGINEERING

Page 4 of 5

SCOPE OF WORK AND SPECIAL CONDITIONS

REV. 00

- 4.4 The bidders offer may be rejected based on unsatisfactory past performance in any of the contracts of BHEL Bhopal or any of its units. Further, in case of false information given by the bidder, as found at any stage of the contract, the bidder shall be de-barred and its EMD/ Security shall be forfeited.
- 4.5 The complete monitoring procedure, as required above, shall be in accordance with the approved method that is acceptable to CPCB and MP Pollution Control Board and it should be clearly mentioned by the party.
- 4.6 If in future, the validity for conducting monitoring expires during the course of work order, the bidder shall apply well in advance for the renewal of the certificate and submit the necessary documents to BHEL, Bhopal at the earliest. Failing to submit the necessary documents for renewal and renewed certificate will lead to cancellation of work order without sighting any reasons and the security deposit submitted by the bidder shall be forfeited and work shall be awarded to another agency on risk and cost of executing agency.
- 4.7 The contractor shall provide all required personal protective equipment like safety belt, helmet, hand gloves etc. for their workman/staff working in our plant
- 4.8 The insurance of contract workers is in bidder's scope. BHEL shall not be responsible in any respect if any mishap happens at our premises during work/factory visit.
- 4.9 First visit for sampling is to be carried out within 1 month of issue of work order and subsequent visits are to be carried out on monthly basis. Penalty for sampling not carried out on monthly basis, shall be levied at 0.5% per week, subject to maximum of 10% of the total value for entire period. GST on penalty shall be extra

5.0 SAFETY & OCCUPATIONAL HEALTH

The contractor has to assume full responsibility of the safety of the man and machine involved and to comply with the security/ safety regulations of BHEL and others, inside/ outside the BHEL factory. The contractor is required to maintain first aid box at the work place.

6.0 TERMS OF PAYMENT

- 6.1 Payment may be regulated as follows, subject to the deductions towards security deposit, income tax with surcharge, any other tax or levies applicable and recoveries towards materials/ services rendered on chargeable basis.
- 6.2 All the payments shall be released by BHEL through electronic pay mode only. Normally payment will be made within 60 days from the date of submission of Bill and 45 days in case of MSME vendors
- 6.3 Contractor will submit the bills (in duplicate), which will be duly verified, checked and forwarded by concerned engineer to Finance Department for further checking, passing of bill and releasing payment to the party.

7.0 EVALUATION OF THE OFFER

- 7.1 **No condition or deviations should be asked for in price bid.**
- 7.2 The work is indivisible and total work shall be ordered on the L1 bidder (single party) who quotes the lowest rate in totality.
- 7.3 The quoted prices should be firm. No variation in price shall be allowed.
- 7.4 If the tenderer deliberately gives wrong information in his tender, BHEL reserves the right to reject such tender at any stage or to cancel the contract, if awarded and forfeit the Security Deposit.

- 8.0** BHEL reserves the right to cancel/short close this tender without assigning any reason whatsoever and in such cases no bidder shall have any claim arising out of such action.



BHEL, BHOPAL

(TENDER No. HSE/AIR/2020-21/W5)
HEALTH SAFETY & ENVIRONMENT ENGINEERING

Page 5 of 5

SCOPE OF WORK AND SPECIAL CONDITIONS

REV. 00

9.0 Penalty for work not carried out as per schedule, shall be levied at 0.5% per week of the total value for the entire period, subject to maximum of 10% of the total value for entire period. GST on penalty shall be extra.

10.0 GST shall be applicable as extra. Any loss of credit or additional liability of tax on BHEL due to the reason attributable to the bidder shall be recoverable from them along with applicable interest

Name & signature of the bidder
(Seal)