

## **CENTRAL POLLUTION CONTROL BOARD**

### **Request for Expression of Interest**

#### **Real Time / Continuous Ambient Air Quality Monitoring System**

1. The Central pollution Control Board (CPCB) is planning to procure complete Real time / continuous ambient air quality monitoring system for 8 parameters (Viz SO<sub>2</sub>, NO<sub>2</sub>, NH<sub>3</sub>, O<sub>3</sub>, CO, Benzene, PM<sub>2.5</sub> and PM<sub>10</sub>) notified under the National Ambient Air Quality Standards (NAAQS). The Analysers / System shall conform to the standards like FRM (USEPA), FEM (USEPA), TUV (EN) or equivalent. Expression of Interest invited from eligible manufacturers / suppliers to participate in Techno – Commercial bidding for the following systems:
  - (i) Easily transportable system for indicative monitoring / episodal pollution monitoring / short term monitoring / point ambient monitoring.
  - (ii) Conventional system for long term monitoring / trend analysis.
2. Interested manufacturers / suppliers shall submit necessary documents in support, which include brochures, client details, list of Indian users, spare, service & support back up etc. The suppliers shall ensure for availability of Spare parts for at least next seven years.
3. Expression of interest must be delivered to the address below:

The Member Secretary,  
Central Pollution Control Board,  
Parivesh Bhawan, East Arjun Nagar,  
Delhi-110032, INDIA
4. Last date of submission: 30 days from the date of publication in News Papers.

**CENTRAL POLLUTION CONTROL BOARD  
DELHI**

**BACKGROUND**

**Notice inviting Expression of Interest (EOI) for procurement of Real Time / Continuous Ambient Air Quality Monitoring System**

**1. Preface**

Central Pollution Control Board is the apex body of the Ministry of Environment & Forests and created under Water (Prevention & Control of Pollution) Act 1974. Later activities as entrusted in Air (Prevention & Control of Pollution) Act 1981 also added to this organisation. The responsibility has been further emphasized under Environment (Protection) Act, 1986. The predominant function is to lay down the ambient air quality standards for the country and to monitor; data compile and publish time to time. The ambient air quality objectives / standards are pre-requisite for developing programme for effective management of ambient air quality and to reduce the damaging effects of air pollution. In exercise of the power conferred by Sub – section (2) (h) of section 16 of the Air (Prevention & Control of Pollution) Act, 1981 (Act No. 14 of 1981) CPCB has formulated the ambient air quality standards for 12 parameters, which also describes time waited average, areas (land use) and methods of measurement in November 2009. For details, refer to Gazette Notification as placed at **Annexure – I**.

**2. Objectives**

Ambient Air Quality monitoring is an important part of air quality management and is essential for the implementation of air quality legislation, particularly, in compliance with emissions and ambient air quality standards. The major objectives of the air quality monitoring are:

- (a) To determine present Air Quality status and trends;
- (b) To assess the health hazard;
- (c) To provide background air quality data as needed for industrial siting and town planning; and
- (d) To control and regulates pollution from industries and other sources to meet the air quality standards.

The ambient air quality monitoring network involves measurement of a number of air pollutants at number of locations in the country so as to meet objectives of the monitoring. Any air quality monitoring network thus involves selection of pollutants, selection of locations, frequency, duration of sampling, sampling techniques, infrastructural facilities, man power and operation and maintenance costs. The network design also depends upon the

type of pollutants in the atmosphere through various common sources. It is necessary to assess the present and anticipated air pollution through continuous air quality survey / monitoring programs. Therefore, Central Pollution Control Board had started National Ambient Air Quality Monitoring (NAAQM) Network during 1984 - 85 at national level with 7 stations. Presently there are 506 Stations in 211 cities / towns (manual monitoring) are in operation. The programme was later renamed as National Air Quality Monitoring Programme (NAMP). In addition to these stations operated under NAMP, CPCB, SPCBs, Governments organization, Industries, Universities etc are operating more than 200 continuous ambient air quality monitoring stations (CAAQMS) in the country.

### **3. Scope of Expression**

With a view to expand ambient air quality monitoring network including data capture, data transmission, data storage, trend analysis, CPCB proposes to strengthen the monitoring network in urban, semi – urban, rural, industrial and sensitive areas across the country. To achieve the goal, CPCB is planning to procure Real time / continuous ambient air quality monitoring systems for 8 parameters (Viz SO<sub>2</sub>, NO<sub>2</sub>, NH<sub>3</sub>, O<sub>3</sub>, CO, Benzene, PM<sub>2.5</sub> and PM<sub>10</sub>) notified under the National Ambient Air Quality Standards (NAAQS). The parameters to be monitored will vary with the site requirement.

The following systems are required for strengthening of the monitoring network:

- (i) Easily transportable system for indicative / episodal pollution / short term / point ambient / rural / semi – urban monitoring preferably powered by Solar Energy back up;
- (ii) Conventional system for long term monitoring / trend analysis for urban, traffic intersection etc with facility of power back up; and

The above Systems shall conform to the standards like FRM (USEPA), FEM (USEPA), TUV (EN) or equivalent.

### **4. Eligibility Criteria**

CPCB invites Expression of Interest from eligible manufacturers / suppliers to participate in Techno – Commercial bidding for the above mentioned systems. Manufacturers / suppliers should fulfill the following criteria:

- (a) Should have adequate knowledge, experience of supplying, operation & maintenance, calibration etc of CAAQM system in India or abroad;
- (b) Adequate Technical & Scientific manpower for the operation & maintenance, calibration, data generation, data validation, networking, transmission of data to public domain and preparation of reports;

- (c) Should have adequate financial capability to execute the contract; and
- (d) Shall ensure availability of Spare parts for at least next seven years.

## **5. Submission of EOI**

Interest manufacturers / suppliers may submit EOI in a sealed envelope by speed post clearly super - scribed "Expression of Interest (EOI) for procurement of Real Time / Continuous Ambient Air Quality Monitoring System" within 30 days from the date of publication of EOI to:

The Member Secretary,  
Central Pollution Control Board,  
Parivesh Bhawan, East Arjun Nagar,  
Delhi-110032, INDIA

The offer should be in two hard copies and CD containing the following information:

- (i) Detailed Technical Description / brochures,
- (ii) Client details,
- (iii) List of Indian users,
- (iv) Details of projects / work executed, and
- (v) Spare, service & support back up etc.

**NATIONAL AMBIENT AIR QUALITY STANDARDS**  
**CENTRAL POLLUTION CONTROL BOARD**  
**NOTIFICATION**

New Delhi, the 18th November, 2009

No. B-29016/20/90/PCI-L.—In exercise of the powers conferred by Sub-section (2) (h) of section 16 of the Air (Prevention and Control of Pollution) Act, 1981 (Act No.14 of 1981), and in supersession of the Notification No(s). S.O. 384(E), dated 11<sup>th</sup> April, 1994 and S.O. 935(E), dated 14<sup>th</sup> October, 1998, the Central Pollution Control Board hereby notify the National Ambient Air Quality Standards with immediate effect, namely:-

**NATIONAL AMBIENT AIR QUALITY STANDARDS**

S. No.	Pollutant	Time Weighted Average	Concentration in Ambient Air		
			Industrial, Residential, Rural and Other Area	Ecologically Sensitive Area (notified by Central Government)	Methods of Measurement
(1)	(2)	(3)	(4)	(5)	(6)
1	Sulphur Dioxide (SO <sub>2</sub> ), µg/m <sup>3</sup>	Annual* 24 hours**	50 80	20 80	- Improved West and Gaeke -Ultraviolet fluorescence
2	Nitrogen Dioxide (NO <sub>2</sub> ), µg/m <sup>3</sup>	Annual* 24 hours**	40 80	30 80	- Modified Jacob & Hochheiser (Na-Arsenite) - Chemiluminescence
3	Particulate Matter (size less than 10µm) or PM <sub>10</sub> µg/m <sup>3</sup>	Annual* 24 hours**	60 100	60 100	- Gravimetric - TOEM - Beta attenuation
4	Particulate Matter (size less than 2.5µm) or PM <sub>2.5</sub> µg/m <sup>3</sup>	Annual* 24 hours**	40 60	40 60	- Gravimetric - TOEM - Beta attenuation
5	Ozone (O <sub>3</sub> ) µg/m <sup>3</sup>	8 hours** 1 hour**	100 180	100 180	- UV photometric - Chemiluminescence - Chemical Method
6	Lead (Pb) µg/m <sup>3</sup>	Annual* 24 hours**	0.50 1.0	0.50 1.0	- AAS /ICP method after sampling on EPM 2000 or equivalent filter paper - ED-XRF using Teflon filter
7	Carbon Monoxide (CO) mg/m <sup>3</sup>	8 hours** 1 hour**	02 04	02 04	- Non Dispersive Infra Red (NDIR) spectroscopy
8	Ammonia (NH <sub>3</sub> ) µg/m <sup>3</sup>	Annual* 24 hours**	100 400	100 400	-Chemiluminescence -Indophenol blue method

(1)	(2)	(3)	(4)	(5)	(6)
9	Benzene (C <sub>6</sub> H <sub>6</sub> ) µg/m <sup>3</sup>	Annual*	05	05	- Gas chromatography based continuous analyzer - Adsorption and Desorption followed by GC analysis
10	Benzo(a)Pyrene (BaP) - particulate phase only, ng/m <sup>3</sup>	Annual*	01	01	- Solvent extraction followed by HPLC/GC analysis
11	Arsenic (As), ng/m <sup>3</sup>	Annual*	06	06	- AAS /ICP method after sampling on EPM 2000 or equivalent filter paper
12	Nickel (Ni), ng/m <sup>3</sup>	Annual*	20	20	- AAS /ICP method after sampling on EPM 2000 or equivalent filter paper

\* Annual arithmetic mean of minimum 104 measurements in a year at a particular site taken twice a week 24 hourly at uniform intervals.

\*\* 24 hourly or 08 hourly or 01 hourly monitored values, as applicable, shall be complied with 98% of the time in a year. 2% of the time, they may exceed the limits but not on two consecutive days of monitoring.

Note. — Whenever and wherever monitoring results on two consecutive days of monitoring exceed the limits specified above for the respective category, it shall be considered adequate reason to institute regular or continuous monitoring and further investigation.

SANT PRASAD GAUTAM, Chairman  
[ADVT-III/4/184/09/Exty.]

**Note:** The notifications on National Ambient Air Quality Standards were published by the Central Pollution Control Board in the Gazette of India, Extraordinary vide notification No(s). S.O. 384(E), dated 11<sup>th</sup> April, 1994 and S.O. 935(E), dated 14<sup>th</sup> October, 1998.