

GOVERNMENT OF INDIA
MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE

LOK SABHA
UNSTARRED QUESTION NO. 3724
TO BE ANSWERED ON 16.03.2026

Source Identification Studies for Air Pollution

3724. SHRI AZAD KIRTI JHA

Will the Minister of ENVIRONMENT, FOREST AND CLIMATE CHANGE be pleased to state:

- (a) whether the Government has conducted any source identification and apportionment exercise for categorizing causes of air pollution with their relative contribution in Delhi-NCR and the country, as per recent Supreme Court guidelines, if so, the details thereof and if not, the reasons therefor;
- (b) the reasons for not conducting such exercise earlier and whether meaningful solutions could be achieved without understanding the sources of pollution;
- (c) whether the Government has devised any long-term sectoral plans to reduce their pollution intensity, if so, the details thereof and if not, the reasons therefor;
- (d) the details of total positions sanctioned, occupied and vacant in Central and State Pollution Control Bodies, State/UT-wise;
- (e) whether the Government is aware of the number of posts (including technical and non-technical posts) in the Delhi Pollution Control Committee lying vacant, if so, details thereof, along with the reasons therefor; and
- (f) the details of measures taken/being taken to ensure optimal performance by pollution control bodies, including their staff strength?

ANSWER

MINISTER OF STATE IN THE MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE
(SHRI KIRTI VARDHAN SINGH)

(a) and (b): To identify various factors contributing to air pollution and prioritise the air quality improvement measures under city action plans under NCAP, Source Apportionment (SA) studies have been carried out in 90 cities under National Clean Air Programme (NCAP) including Delhi.

Based on the Source apportionment studies conducted across various cities, it was observed that major contributors to PM₁₀ concentrations include road dust and construction activities (14–58%), vehicular emissions (10–33%), industrial sources (8–34%), and waste/biomass burning (8–29%).

A Source Apportionment study for Delhi has been conducted in 2018 titled “*Source Apportionment of PM_{2.5} & PM₁₀ of Delhi NCR for identification of Major Sources*”.

Further, Hon'ble Supreme court vide its order dated 06.01.2026 in the Writ Petition (C) No. 13029/1985 directed Commission for Air Quality Management in National Capital Region and Adjoining Areas (CAQM) to identify major causes of Air pollution in Delhi-NCR.

In pursuance to the Hon'ble Supreme Court's directions, CAQM has published a report of the Air Quality Experts on 'Identification of the causes for worsening AQI in Delhi-NCR'.

Further, recognizing variations in earlier studies and the need for a unified, data-driven approach for developing effective air quality management in Delhi NCR, the Commission constituted a Steering Committee under the Chairmanship of a full-time Technical Member of the Commission, comprising Members from NEERI, CPCB, HSPCB, RSPCB, UPPCB, DPCC, IIT Kanpur, IITM Pune, UNEP Delhi, ARAI Pune, IIT Delhi and TERI. Based on the deliberations, CAQM developed a Framework for Emission Inventory and Source Apportionment for Delhi-NCR in April, 2025, which outlines high-resolution emission mapping (500 m x 500 m grid) across major polluting sectors like transport, industry, households, crop residue burning, road dust, and waste burning as outlined in this report. The Commission entrusted CPCB with the task to implement the framework, and a consortium of four institutes led by ARAI, Pune and partners from IIT Delhi, TERI and IITM Pune has been awarded with the work of developing a new emission inventory and source apportionment study for Delhi NCR.

(c): Government has launched National Clean Air Programme (NCAP) in 2019 as a national strategy to address air pollution across 130 non-attainment and million-plus population cities across the country. Under NCAP, 24 States/UTS and 130 cities have prepared State Action Plans and City specific Clean Air Action Plans, respectively to improve air quality. These plans have incorporated the long-term and short-term sectoral actions along with the responsible agencies to target the specific air polluting sources like Soil & Road Dust, Vehicles, Domestic Fuel, MSW Burning, Construction Material and Industries, etc.

Under NCAP and 15th Financial Commission (XVFC) air quality grants, performance based incentive grant of Rs. 13,865.52 crore has been provided as a critical gap funding to 130 cities for implementing activities to control air pollution.

To monitor the implementation of NCAP in 130 cities, various Committees have been set up at National, State and City level for coordination, monitoring and evaluation of progress on action plans by various stakeholder agencies/Departments/Ministries.

Further, to address air pollution in Delhi-NCR, Govt. of NCT of Delhi, Govt. of Uttar Pradesh, Govt. of Haryana, Govt. of Rajasthan and Govt. of Punjab have prepared short term and long term activities to be undertaken to address various sources of air pollution.

Various other measures taken by the Government to control air pollution are enclosed at **Annexure-I**.

(d) to (f): State-wise details of positions sanctioned, occupied and vacant in Central and State Pollution Control Boards (SPCB)/Pollution Control Committees (PCC) including Delhi Pollution Control Committee (DPCC) are enclosed at **Annexure-II**.

Vacancies in SPCB/PCC are filled by the concerned State Govt./UT administration through direct recruitment, deputation and promotion, in accordance with the applicable recruitment

rules for the respective positions. Ministry has requested the State Govt./UT administrations to fill up the vacant posts in SPCB/PCCs.

MoEF&CC notified amendments to the Uniform Consent Guidelines on 27th January, 2026 vide G.S.R.62(E): The Control of Air Pollution (Grant, Refusal or Cancellation of Consent) Amendment Guidelines, 2026 and G.S.R.63(E): The Control of Water Pollution (Grant, Refusal or Cancellation of Consent) Amendment Guidelines, 2026, to streamline the consent mechanism implemented across all States and Union territories. Under these guidelines, Registered Environment Auditors are allowed to conduct site visits and verification of particulars furnished by the industries for processing of applications for grant of Consent, in addition to the inspections conducted by officers of State Pollution Control Boards/ Pollution Control Committees (PCC).

To implement Uniform Consent guidelines, Unified Consent and Authorisation Management System (UCAMS), an online portal has been developed to facilitate all SPCBs/PCCs across the country to process applications for grant of 'Consent to Establish' and 'Consent to Operate' issued for establishing and operating industries. The online unified portal not only creates transparency in granting the Consent, it reduces the burden of filling and processing multiple applications and permissions.

Measures taken to control Air Pollution**1.0 Measures for control of vehicular emissions:**

- Leapfrogging from BS-IV to BS-VI fuel standards since 1st April, 2018 in NCT of Delhi and from 1st April, 2020 for the rest of the country.
- Introduction of BS VI compliant vehicles across the country since April, 2020.
- Installation of Vapour Recovery System (VRS) in new and existing petrol pumps selling gasoline >100kl per month in million plus cities and those selling >300kl per month in cities with population between 1 lakh to 1 million to control vehicular refuelling emissions.
- Promotion of electric vehicles through Electric Mobility Promotion Scheme 2024 (EMPS 2024) scheme of Ministry of Heavy Industries, Government of India
- Sustainable Alternative Towards Affordable Transportation (SATAT) has been launched as an initiative to set up Compressed Bio-Gas (CBG) production plants and make CBG available in the market for use in automotive fuels.
- Establishment of charging infrastructure for E-vehicles as per guidelines issued by Ministry of Power.
- Synchronization in traffic movements/Introduction of Intelligent Traffic System (ITS) for lane-driving.
- Ministry of Road Transport & Highways (MoRTH) has issued notifications on the establishment of Registered Vehicle Scrapping Facility (RVSFs) and Automated Testing System (ATS) to create an enabling framework for implementation of Vehicle Scrapping Policy.
- Improving and Strengthening of Pollution Under Control (PUC) Certificate System programme across the country by MoRTH.

2.0 Measures for control of industrial emission:

- For strengthening monitoring mechanism and effective compliance through self-regulatory mechanism, CPCB directed all 17 categories of highly polluting industries to install OCEMS. There are 4,322 units under 17 categories of industries, out of which 3,744 units have installed OCEMS and closure directions are still in-force for 578 units.
- Direction issued on 09.10.2025 to SPCBs/ PCCs of Delhi NCR for ensuring OCEMS and PTZ installation in Textile, food processing and metal industries and connectivity to CPCB server.
- CPCB vide direction dated 12.02.2025 classified a total of 419 sectors and sub-sectors in Red (125), Orange (137), Green (94), White (54) and Blue (9).
- The Ministry of Environment Forest and Climate Change (MoEF&CC), Government of India notifies industry specific discharge standards under Schedule-I: 'Standards for Emission or Discharge of Environmental Pollutants from various Industries' of Environment Protection Act, 1986. So far, industry specific environmental standards, for 79 industrial sectors (including emission standards for 56 sectors) have been notified. Industrial sectors, for which specific standards are not available, general standards as notified under Schedule-VI of Environment Protection Rules, 1986 shall be applicable.
- Ban on use of imported pet coke in the country since July 26, 2018, with exception for use in permitted processes.
- CPCB has come out with System and Procedure for Emission Compliance Testing of Retro-fit Emission Control Devices (RECD) for Diesel Power Generating Set Engines up to Gross Mechanical Power 800 kW.

- In 2022, CPCB mandated new brick kilns must use zig-zag technology, vertical shaft, or piped natural gas, and adhere to specific standards. Also, Existing kilns must also convert to these technologies or use approved fuels.
- In 2023, CPCB introduced stricter emission standards (CPCB IV+) for diesel generators (DG sets) up to 800 kW, mandating dual-fuel systems (70% gas, 30% diesel) where gas infrastructure is available and requiring Retro-fit Emission Control Devices (RECD) with a minimum PM capturing efficiency of 70%.

3.0 Air Quality Monitoring and Network

- National Air Quality Index (AQI) was launched in 2015. Information is being disseminated to public through daily air quality bulletins.
- Ambient Air Quality Network: The country has a network of 1597 ambient air quality monitoring stations (562 continuous and 1035 manual) covering 583 cities in 28 states and 7 UTs.
- A centralized air quality monitoring portal is operated by Central Pollution Control Board wherein, tracking of various information such as hourly PM concentrations, Live Air Quality Data of Monitoring stations and Live Air Quality Index is being carried out.
- Daily AQI Bulletin is published on CPCB website giving AQI information for cities across India.

4.0 C&D Waste & MSW

- CPCB published following guidelines (available on website of CPCB)
 1. Environmental Management of Construction & Demolition (C & D) Wastes' in March, 2017
 2. 'Guidelines on DUST Mitigation Measures in Handling Construction Material & C&D Wastes' in November 2017.
 3. Disposal of legacy waste by bio-mining and bio-remediation to address open burning and landfill fires
- CPCB has issued direction to all SPCBs/ PCCs for deployment of Anti-Smog Gun and implementation of adequate dust mitigation measures at construction projects/ sites having area more than 20,000 sq. meters. CPCB has issued guidelines/ mechanism for use of anti-smog guns in Construction and Demolition projects.
- CPCB issued directions to all SPCBs/PCCs for enforcement of provision of SWM Rules-2016 regarding bio-mining of legacy waste during Jan-2021.
- CPCB issued directions to all SPCBs/PCCs for implementation of SWM Rules-2016 regarding fire incidents at MSW dumpsites during May 2022.

5.0 Regular Stakeholder Consultation, Public & Media Outreach

- CPCB has developed a mobile app i.e. SAMEER, where Real-time Ambient air quality data of various parameters including AQI is also given. Sameer app also facilitates the public in lodging of air pollution related complaints in NCR region and such complaints are assigned to various local agencies.
- Dedicated media corner, Twitter and Facebook accounts have also been created for public outreach.
- Complaint redressal on SAMEER app and social media platforms is monitored and redressal status is shared with respective agencies.
- Daily AQI status is shared on social media platforms. Various campaigns as well as informative posts related to air pollution, firecrackers, vehicular pollution, stubble burning, sustainable lifestyle, etc. are also posted regularly on social media platforms.
- CPCB issues a daily report comprising of AQI of Delhi and NCR towns, comparative AQI status, year-wise trends of PM concentration, hotspots for the day, AFE counts,

contribution of stubble burning and meteorological forecast. This report is prepared based on the inputs available from various sources such as IMD, SAFAR, IARI, etc., and disseminated through CPCB website.

Annexure-II

State-wise details of positions sanctioned, occupied and vacant in Central and State Pollution Control Boards/Pollution Control Committees including Delhi Pollution Control Committee (as on 30.11.2025)

S. No	Name of the CPCB/SPCBs	Sanctioned posts	Filled Posts	Vacancies
1.	Central Pollution Control Board [#]	669	466	203
2.	Andhra Pradesh	293	117	176
3.	Arunachal Pradesh	27	27	0
4.	Assam [#]	264	215	49
5.	Bihar	72	5	67
6.	Chhattisgarh	328	119	209
7.	Goa	159	130	29
8.	Gujarat	794	289	505
9.	Haryana	448	289	159
10.	Himachal Pradesh	375	241	134
11.	Jharkhand	271	24	247
12.	Karnataka	723	255	468
13.	Kerala	425	372	53
14.	Madhya Pradesh	1220	406	814
15.	Maharashtra	1310	450	860
16.	Manipur	119	40	79
17.	Meghalaya [#]	155	99	56
18.	Mizoram	24	18	6
19.	Nagaland	17	17	0
20.	Odisha [#]	463	175	288
21.	Punjab	652	572	80
22.	Rajasthan	822	555	267
23.	Sikkim	11	09	02
24.	Tamil Nadu	1017	558	459
25.	Telangana	230	115	115
26.	Tripura	29	20	9
27.	Uttarakhand	103	23	80
28.	Uttar Pradesh	732	372	360
29.	West Bengal	309	171	138
30.	Andaman and Nicobar	5	5	0
31.	Chandigarh	8	7	1
32.	Dadra Nagar Haveli and Daman & Diu	2	2	0
33.	Delhi	344	282	62
34.	Jammu & Kashmir	445	258	187
35.	Ladakh	2	2	0
36.	Lakshadweep	5	5	0
37.	Puducherry	10	7	3

Data provided for CPCB is as on 27.02.2026, Assam is as on 11.03.2026, Meghalaya is as on 11.03.2026 and Odisha is as on 28.02.2026.