

GOVERNMENT OF INDIA  
MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE

**RAJYA SABHA**  
**UNSTARRED QUESTION NO. 364**  
TO BE ANSWERED ON 06.02.2025

**Study of Air Quality Index and emission of sulphur dioxide**

364. SHRI PARIMAL NATHWANI:

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

- (a) whether any specific study is undertaken in the country to identify hotspots in respect of Air Quality Index (AQI) and sulphur dioxide (SO<sub>2</sub>) emissions, if so, the details thereof;
- (b) the details of the number of AQI and SO<sub>2</sub> hotspot centres in the States of Gujarat, Jharkhand and Andhra Pradesh respectively; and
- (c) the details of steps taken by the Central Government and respective State Governments to reduce/mitigate AQIs and SO<sub>2</sub> to the permissible level?

**ANSWER**

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

**(a) to (c):**

The Sulphur di-oxide (SO<sub>2</sub>) parameter in the ambient air has been monitored in the country with the help of State Pollution Control Boards (SPCBs) and Pollution Control Committees (PCCs) as per the guidelines for air quality monitoring systems published by Central Pollution Control Board (CPCB). The year wise trend of SO<sub>2</sub> levels depict that all the cities were within National Ambient Air Quality Standards (NAAQS) except only 02 out of 492 cities in year 2023, only 02 out of 430 cities in year 2022, only 01 out of 380 cities in year 2021 and only 01 out of 351 cities in year 2020. This data indicates that all the cities in the country have SO<sub>2</sub> levels within NAAQS except very few and hence any specific study has not been undertaken to identify hotspots with respect of sulphur dioxide (SO<sub>2</sub>) emissions.

Further, Government has launched National Clean Air Programme (NCAP) in 2019 as a national level strategy to mitigate air pollution levels across the country. Central Pollution Control Board (CPCB) has identified 130 million plus and non-attainment cities (cities exceeding NAAQS, which were notified to protect human health, consecutively for five years), where City Specific Clean Air Action Plans have been prepared and rolled out for implementation in these 130 non-attainment/million plus cities to improve the air quality.

These city specific clean air action plans target city specific air polluting sources like Soil & Road Dust, Vehicles, Domestic Fuel, MSW Burning, Construction Material and Industries with

short-term priority action as well as those to be implemented in a medium to longer time frame along with the responsible agencies.

To attain the assigned PM<sub>10</sub> reduction targets under NCAP, performance based funds/grants are being released to urban local bodies under NCAP/XVFC from FY 2019-20 till FY 2025-26. Under NCAP and 15th Financial Commission (XVFC) grants, total of Rs.11541.88 Cr. have been released to 130 million plus & non-attainment cities from FY 2019-20 till date (30.01.2025) for implementing activities to control air pollution and out of which Rs. 8440.29 Cr. have been utilized.

Further, to curb the emissions in non-attainment cities under NCAP, following actions are undertaken:

- Annual Action Plan with micro detailing has also been devised by CPCB to capture the sector-specific information. The plan comprises of sector-specific points for improvement in air quality such as end-to-end pavement of roads, greening of traffic corridors, C&D waste management, synchronization of traffic movements, shifting of industries to cleaner fuels, checking & control of MSW burning, management of landfill sites etc. Annual action planning is being done by ULBs to capture the progress of activities.
- Ranking system under Swachh Vayu Survekshan has been initiated and cities are being ranked every year based on the air quality of the city and on the implementation of activities approved under city action plan.
- To tackle air pollution in emergencies, Emergency Response System (ERS) in line with Graded Response Action Plan (GRAP) of Delhi-NCR, has been developed and is being implemented in identified non-attainment/ million plus cities.
- Public Grievance Redressal System also been developed in non-attainment/ million plus cities wherein air pollution issues are being addressed at regular intervals.
- A Portal for Regulation of Air pollution in Non-Attainment cities (PRANA) is developed for monitoring of implementation of NCAP, wherein various city-specific information is digitized and filled-up by respective ULBs that helps to track the physical and financial progress against city action plan in improvement of air quality made in NACs. In addition, city report card based on the actions taken on ground are generated on a quarterly basis and automatically sent to city administrators for monitoring.
- The higher emission zones within the city are identified and detail action plan for the identified sources in these hotspots with the progress on the actions is also monitored.
- Performance based funds are being disbursed to the cities based on the improvement in air quality of the cities.
- Source Apportionment & Emission Inventory studies have been completed for 50 cities and is under progress in 80 cities which informs about the pollution sources and the amount they contribute to ambient air pollution levels.

Further, steps taken by the Government for the abatement of Air Pollution from different sources are enclosed as **Annexure I**.

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## Steps Taken for the abatement of Air Pollution

### 1.0 National Clean Air Programme:

- National Clean Air Programme (NCAP) has been launched by Ministry of Environment, Forest and Climate Change (MoEFCC) in January 2019 with an aim to improve air quality in 130 cities (non-attainment cities and Million Plus Cities) in 24 States by engaging all stakeholders.
- City Action Plans (CAPs) have been prepared by all 130 cities and being implemented by Urban Local Bodies.
- The city specific clean air action plans target city specific air polluting sources like Soil & Road Dust, Vehicles, Domestic Fuel, MSW Burning, Construction Material and Industries.
- Performance based financial support is being provided to these 130 cities for implementation of activities of City Action Plan.
- Further, funding for implementation of CAPs is being mobilised through convergence of resources from various schemes of Central Government such as Swachh Bharat Mission SBM (Urban), Atal Mission for Rejuvenation and Urban Transformation (AMRUT), Smart City Mission, Sustainable Alternative towards Affordable Transportation (SATAT), Faster Adoption and Manufacturing of Hybrid and Electric Vehicles (FAME-II), Nagar Van Yojna, etc. and resources from State/UT Governments and its agencies such as Municipal Corporation, Urban Development authorities and Industrial development authorities etc.
- Public Grievance Redressal Portal (PGRP)/helpline have been developed by all 130 cities to address public complaints of air pollution in timely manner.
- Emergency Response System (ERS/ GRAP) have been developed by all 130 cities for taking action in air emergencies
- 95 cities out of 130 cities have shown improvement in air quality in terms of annual PM10 concentrations in FY 2023-24 in comparison to levels of FY 2017-18.

### 2.0 Measures for control of vehicular emissions:

- Leapfrogging from BS-IV to BS-VI fuel standards since 1<sup>st</sup> April, 2018 in NCT of Delhi and from 1<sup>st</sup> 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.

### 3.0 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 4,315 units under 17 categories of industries, out of which 3,734 units have installed OCEMS and closure directions are still in-force for 581 units.

- 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.
- Further, specific actions in case of Delhi-NCR are given below:**
- Installation of Online Continuous Emission Monitoring System (OCEMS) in red category air polluting industries in Delhi-NCR
  - Industrial units in Delhi have shifted to PNG/cleaner fuels and, operational units in NCR have shifted to PNG/Biomass.
  - Directions issued for conversion of brick kilns to zig-zag technology in Delhi and NCR. A total of 3003 out of 4608 brick kilns have converted to zig-zag technology including 1762 kilns in Haryana, 1024 kilns in U.P. and 217 kilns in Rajasthan. Brick kilns not converted to zig-zag technology are not permitted to operate.
  - In order to control DG set emissions, CPCB is also funding retrofitment/ upgradation of DG sets in Govt. hospitals in Delhi-NCR and guidelines have been issued in this regard.
  - Ban on use of pet coke and furnace oil as fuel in NCR States since October 24, 2017.
  - An approved fuel list is in force in Delhi-NCR w.e.f. 01.01.2023. Industries operating on only PNG or biomass are permitted in NCR, except for specific requirement of other fuels by specific industries owing to technical, technological and process requirements. Out of 7759 fuel based industries in NCR, 7449 have been shifted to approved fuels, with the balance 310 industries under closure.
  - Stringent PM emission norms for biomass based boilers have been prescribed for compliance in NCR.

#### 4.0 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.

#### **5.0 Measures for control of emissions from Stubble Burning in Delhi-NCR:**

- MoA&FW in 2018 launched scheme for providing subsidy for purchase of crop residue management machinery and establishment of custom hiring centers (CHCs) in NCT of Delhi and the States of Punjab, Haryana and Uttar Pradesh. Under the said scheme, financial assistance is provided to the farmers for purchase of crop residue management machinery and establishment of custom hiring centers. 50% subsidy on the cost of crop residue management machinery is provided to the individual farmers and 80% subsidy is provided for establishment of Custom Hiring Centres (CHCs) of crop residue management machinery. During 2018-2024, total fund released to Delhi and other states under the said scheme is Rs. 3698.45 crores using which, over 3 lakh crop residue machineries have been delivered to individual farmers and CHCs, and over 40,000 CHCs have been established. Further, MoA&FW in 2023 revised guidelines under the scheme to support establishment of crop residue/paddy straw supply chain, by providing financial assistance on the capital cost of machinery and equipment required for Establishment of crop residue/paddy straw supply chain.
- An Inter-Ministerial Committee has been constituted under the chairmanship of Special secretary, MoAFW for convergence of scheme for convergence of Schemes/Initiative supporting Ex-situ management of paddy straw.
- CAQM has issued directions for co-firing of 5-10% biomass with coal in thermal power plants located within 300 kms of Delhi, and, in captive power plants of industrial units located in NCR.
- Directions issued by CAQM to State governments of Punjab, Haryana and Uttar Pradesh to strictly and effectively implement revised action plan to eliminate and control stubble burning.
- CPCB has framed guidelines for providing one-time financial assistance for setting up of paddy straw based pelletization and torrefaction plants which may help in addressing the supply chain issues and the issue of open burning of paddy straw in agriculture fields in Northern Region. A corpus of Rs. 50 crores have been earmarked for utilization through the guidelines. A total of 17 applications for establishment of pelletization and Torrefaction plants under the above mentioned CPCB Guidelines have been sanctioned so far, out of which 02 plants are not coming up. Pellet production capacity of 15 sanctioned plants is 2.07 lakh tonne/annum. These plants are expected to utilize 2.70 lakh tonne of paddy straw per annum.

#### **6.0 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 1524 ambient air quality monitoring stations (558 continuous and 966 manual) covering 550 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.

## 7.0 C&D Waste

- 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.

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