

GOVERNMENT OF INDIA
MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE

RAJYA SABHA
UNSTARRED QUESTION NO. 2315
TO BE ANSWERED ON 20.03.2025

Surge in air pollution

2315. SHRI RANDEEP SINGH SURJEWALA:

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

- (a) whether Government has identified the reasons behind the surge in air pollution levels in northern States despite a 71.2 per cent reduction in farm fires in Punjab and Haryana, if so, the details thereof;
- (b) the challenges faced by Government in achieving the 40 per cent reduction in PM 2.5 by 2025-26 given that Delhi's annual PM_{2.5} levels rose to 104.7 µg/m³ in 2024, marking a 3.4 per cent increase from 2023; and
- (c) the strategies being implemented to ensure sustained improvement in Delhi's air quality, given a notable decline in good air quality days in 2024?

ANSWER

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

(a) to (c):

Air pollution in Delhi - National Capital Region (NCR) is a collective result of multiple factors including high level of anthropogenic activities in the high-density populated areas in NCR, arising from various sectors viz. Vehicular Pollution, Industrial Pollution, Dust from Construction & Demolition Project activities, Road and Open Areas Dust, Biomass Burning, Municipal Solid Waste burning, Fires in Landfills, air pollution from dispersed sources, etc. During post-monsoon and winter months, lower temperature, lower mixing heights, inversion conditions and stagnant winds lead to trapping of the pollutants resulting in high pollution in the region. This is further aggravated due to the emissions from episodic events like stubble burning and firecrackers.

As per a recent study of IIT Kanpur published in September 2023, the major contributors of the PM_{2.5} during winter season are Secondary Inorganic Aerosols (32 %), Vehicular pollution (17 %) and Biomass burning (24 %). The other significant factors include Coal and Fly Ash (7 %), Domestic sources (3%), Municipal Solid Waste burning (3%), Soil and Road dust (2%).

Further, Decision Support System of IITM-Pune, Ministry of Earth Sciences has reported an average contribution of stubble burning towards PM_{2.5} in Delhi is 10.6 % with a maximum contribution of 35% during the period of 8th October – 7th December 2024.

Various initiatives have been taken for control of pollution from different sources (transport, C&D activities, industries etc.) in Delhi-NCR, which has resulted in overall improvement in air quality. However, effectiveness of each of these actions can't be evaluated in absolute terms as meteorological parameters like wind speed and mixing height which are variable factors also play crucial role in governing overall air quality. Various measures taken by the Government to reduce Air Pollution in Delhi-NCR from different sources, are enclosed as **Annexure I**.

Due to the concerted efforts made by all stakeholders, gradual improvement has been observed in Delhi air quality. The number of days of Good-Moderate Air Quality Index (AQI) categories has increased to more than 200 for consecutive two years i.e. 2023 and 2024 in comparison of 110 days in 2016. Further, 2024 has recorded maximum number of days (209) in Good-Moderate AQI categories since 2016, except for COVID year 2020. The details of AQI of Delhi from 2016-2024 is mentioned below:

Comparative Status of AQI- Delhi from 01 January to 31 December 2016-2024

Category	Year	2016	2017	2018	2019	2020	2021	2022	2023	2024	2016	2017	2018	2019	2020	2021	2022	2023	2024
	No. of days	354	365	365	365	366	365	365	365	366									
Good (0-50)	0	2	0	2	5	1	3	1	0		110	152	159	182	227	197	163	206	209
Satisfactory (51-100)	24	45	53	59	95	72	65	60	66										
Moderate (101-200)	86	105	106	121	127	124	95	145	143										
Poor (201-300)	120	115	114	103	75	80	130	77	70		244	213	206	183	139	168	202	159	157
Very Poor (301-400)	99	89	72	56	49	64	66	67	70										
Severe (>401)	25	9	20	24	15	24	6	15	17										

Steps taken by the Government for abatement of Air Pollution in Delhi NCR:

1. 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.
- There are total 06 Non-attainment cities (NACs) in Delhi NCR, out of which 03 cities – Delhi, Alwar and Noida are funded under National Clean Air Programme (NCAP) and 03 cities- Ghaziabad, Meerut and Faridabad are funded under Fifteenth Finance Commission (XV-FC).
- City Action Plans for improvement in air quality have been rolled out for implementation in all the 06 identified cities in Delhi NCR.

2. Regulatory Actions in Delhi-NCR:

- Graded Response Action Plan (GRAP) was formulated for Delhi-NCR to tackle the issue of sudden rise in air pollution levels. The revised GRAP was published by CAQM in December 2024 and further directions were issued for its implementation. Actions listed for different AQI levels under GRAP are invoked from time to time by a sub-committee constituted by CAQM.
- For air pollution abatement and control in Delhi / NCR, the Commission for Air Quality Management in NCR and Adjoining Areas has devised a comprehensive policy for air pollution abatement in NCR in July 2022, stipulating sector-specific action points quantifying targets along with timelines and implementation plan by various agencies in NCR States. The policy framework details sector-wise interventions, quantified targets and timelines for various sectors contributing to air pollution.
- Directions prescribing measures for control of pollution from various sources such as implementation of RECD system/ dual fuel kits in DG sets, use of cleaner fuels in industries, shift to EV/ CNG/ BS VI diesel fuel in transport sector, implementation of dust control measures at C&D sites etc., have been issued by CAQM. Further, policy to curb air pollution in NCR has also been formulated.

3. Measures for control of emissions from Stubble Burning in Delhi-NCR:

- Ministry of Agriculture & Farmers Welfare (MoA&FW) in 2018 launched scheme for providing subsidy for purchase of crop residue management machinery and establishment of custom hiring centres (CHCs) in NCT of Delhi and the States of Punjab, Haryana and Uttar Pradesh for in-situ management of paddy straw. During the period from 2018-19 to 2024-25 (as on 28.02.2025), Rs. 3698.45 crores have been released by MoA&FW (Punjab - Rs. 1756.45 crores, Haryana - Rs. 1081.71 crores, Uttar Pradesh - Rs. 763.67 crores, NCT of Delhi - Rs. 6.05 Crores, ICAR- Rs. 83.35 crores & others Rs. 7.22 Crores). The states have distributed more than 3.00 lakhs machines to the individual farmers and to more than 40000 CHCs in these 4 States, which also include more than 4500 Balers & Rakes which are used for collection of straw in the form of bales for further ex-situ utilization. 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.
- An Inter-Ministerial Committee has been constituted under the chairmanship of Special Secretary, MoAFW for convergence of scheme of Schemes/Initiatives supporting Ex-situ management of paddy straw.

- CAQM has provided a Framework to the states concerned for control / elimination of crop residue burning and directed these to draw up detailed state-specific action plans based on the major contours of the framework. Directions have also been 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.
- CAQM has issued directions permitting use of PNG or biomass as industrial fuel in NCR except Delhi where only PNG is permitted as industrial fuel. CAQM has also 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.
- Central Pollution Control Board (CPCB) has framed Guidelines for grant of one-time financial support under Environment Protection Charge funds for establishment of pelletization and Torrefaction plants to promote utilisation of paddy straw. So far, 15 plants have been sanctioned with utilization capacity of 2.7 lakh tonnes of paddy straw per annum.
- During stubble burning season of 2023 (10.11.23 onwards), 33 scientists of CPCB were deployed as flying squads for assisting CAQM in NCR and adjoining areas for intensifying monitoring and enforcement actions towards prevention of paddy stubble burning incidents in 22 districts of Punjab and 11 districts of Haryana. The flying squads coordinated with state govt/nodal officers//officers from respective districts and sent their daily report to CAQM.
- CPCB has deployed 26 teams (in 16 districts of Punjab and 10 districts of Haryana) for the period 01st October - 30th November, 2024 to intensify monitoring and enforcement actions regarding stubble burning. These teams are coordinating with concerned authorities/ officers deployed at the district level by the State Govt. and reporting to CAQM.
- MoA&FW had deputed 31 Central Teams, which have conducted Quality Survey work w.e.f. 1-15th September, 2024 in the States of Punjab, Haryana and Uttar Pradesh and the Teams had visited 275 manufacturers and conducted quality audit of 910 agricultural machines. Further, 10 Central Teams have conducted survey on utilization of machines in States of Punjab and Haryana during 15th October-31st October 2024. A Team comprising members from DA&FW, CAQM and ICAR and other stakeholders had visited to the State of Punjab to witness the activities of paddy straw management on 14th November, 2024.

4. Measures for control of vehicular emissions:

- Directions issued by CAQM to Government of NCT of Delhi and State Governments of Haryana, Rajasthan and Uttar Pradesh for migration of public transport services, especially buses in NCR to cleaner modes. All state govt. bus services between Delhi and any city/town in the states of Haryana, Rajasthan and Uttar Pradesh to be operated only through EV /CNG/BS-VI diesel w.e.f. 01.11.2023.
- Installation of VRS system at 3256 petrol pumps in Delhi-NCR in compliance with orders of Hon'ble Supreme Court and Hon'ble NGT.

5. Measures for control of industrial emission:

- 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. Brick kilns not converted to zig-zag technology are not permitted to operate in Delhi-NCR.
 - In order to control DG set emissions, CPCB also provides funds for 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. The industries not operating on approved fuels are not allowed to operate in Delhi-NCR.
 - Stringent PM emission norms for biomass based boilers have been prescribed for compliance in NCR.
- 6. Construction & Demolition (C&D) Waste:**
- Directions issued to DPCC and NCR SPCBs to enforce installation of anti-smog guns and other dust control measures at C&D sites.
 - Directions issued for setting up of a “Dust Control and Management Cell” by road owning/ maintaining/ construction agencies for monitoring and effective implementation of dust control measures in the NCR.
 - Online monitoring mechanism (through web portal) introduced for monitoring compliance of dust mitigation measures for construction sites.
- 7. Close Monitoring & Ground level implementation in Delhi-NCR:**
- 40 teams have been deputed by CPCB since December 2021, to assist CAQM, for conducting incognito inspections of air polluting industries, C&D sites, DG sets in Delhi-NCR to check implementation status of pollution control measures and compliance of other provisions of the Air (P&CP) Act, 1981.
