

GOVERNMENT OF INDIA
MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE

RAJYASABHA
UNSTARRED QUESTION NO. 2599
TO BE ANSWERED ON 23.03.2023

Impact of air purifiers in air quality

2599. MS. SAROJ PANDEY:

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

- (a) the details of the steps taken by Government to improve the air quality in the metro cities of the country;
- (b) whether air purifier systems have been installed in these cities to reduce air pollution caused by vehicular exhaust; and
- (c) if so, the cities in which they have been installed and the impact it has had on the air quality?

ANSWER

MINISTER OF STATE IN THE MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE
(SHRI ASHWINI KUMAR CHOUBEY)

(a), (b), and (c):

Ministry of Environment, Forest and Climate Change (MoEFCC) launched National Clean Air Programme (NCAP) in January, 2019 with an aim to improve air quality in 131 cities (non-attainment cities and Million Plus Cities in 24 States by engaging all stakeholders. The programme envisages to achieve reductions up to 40% or achievement of National Ambient Air Quality Standards for Particulate Matter₁₀ (PM₁₀) concentrations by 2025-26. Under XVth Finance Commission Air Quality Performance grants, 49 Million Plus Cities/Urban Agglomerations have been provided Rs.16,539 crore for taking measures to improve air quality during FY 2020-22 to 2025-26. Delhi city is funded directly by MoEFCC for implementation of clean air action plan. The amount of Rs.8025.19 crore was released till FY 2022-23 for implementation of respective city action plans. The cities are required to take various air quality improvement measures in several areas viz. road dust management, vehicular pollution, waste management, industrial pollution and residential emissions, etc. Details of funds released to 50 Million Plus Cities including Delhi are provided at **Annexure-I**.

Two pilot projects of smog towers, viz. one at Anand Vihar by Government of India and another at Connaught Place by Govt. of NCT Delhi have been installed to reduce the air pollution. The details of the steps taken by Government to improve the air quality in the metro cities is enclosed in **Annexure-II**.

Annexure-I

**Details of funds released to 50 Million Plus Cities/Urban Agglomerations and Delhi
under NCAP/XVFC**

SI No.	State	SI No.	City	Fund released direct by MoEFCC	Fund released under XVFC Air quality performance
				(in Rs. crore)	(in Rs. crore)
1	Andhra Pradesh	1	Vijayawada*	6	124.35
		2	Visakhapatnam*	0.12	129.25
2	Bihar	3	*Patna	10	288.6
3	Delhi	4	Delhi	33.75	-
4	Chhattisgarh	5	*Raipur	6	119.35
		6	*Bhilainagar	6	112.35
5	Gujrat	7	*Surat	6	255.18
		8	*Ahmedabad	6	345.25
		9	*Rajkot	0	83.1
		10	*Vadodara	0	98.18
6	Haryana	11	Faridabad	0	54.25
7	Jharkhand	12	*Dhanbad	6	63.09
		13	*Jamshedpur	0	116.85
		14	*Ranchi	0	93.5
8	Karnataka	15	Bangalore*	6	535.1
9	Madhya Pradesh	16	*Bhopal	10	139.35
		17	*Gwalior	10	64.85
		18	*Indore	0.2	152
		19	*Jabalpur	0	89
10	Maharashtra	20	Mumbai UA including 21.Thane, 22.Navi Mumbai, 23.Ulhasnagar, 24.Badlapur	9.5	929.09
		25	*Nagpur	9.45	132.6
		26	*Pune	9.45	261.85
		27	*Aurangabad	0.2	68.1
		28	*Nashik	0.2	91.35
		29	*Vasai-virar	0	72.35
11	Punjab	30	*Ludhiana	6	91.75
		31	*Amritsar	6	67.25
12	Rajasthan	32	*Jaipur	6	319.85
		33	*Jodhpur	6	74.34

		34	*Kota	6	95.25
13	Tamilnadu	35	Chennai	0	367
		36	Madurai	0	69.35
		37	Trichy	0	50.35
14	Telangana	38	*Hyderabad and 39.Patancheru	10.8	443.5
15	Uttar Pradesh	40	*Agra	9.45	136.5
		41	*Allahabad/Prayagraj	9.45	132.35
		42	*Kanpur	9.45	211.6
		43	*Lucknow	9.45	250.18
		44	*Varanasi	9.47	146.1
		45	Meerut	0	114.09
		46	Ghaziabad	0	136.25
16	West Bengal	47	*Kolkata, 48.Howrah and 49.Barrackpore	6	681.25
		50	Asansol UA	0	67.6

Measures taken by the Government to improve air quality

Government has taken several initiatives to improve air quality. The following actions were initiated by the Union Government:

A. Vehicular Emission

- **Leapfrogging from BS-IV to BS-VI** norms for fuel and vehicles since April, 2018 in NCT of Delhi and from 1st April, 2020 for rest of the country.
- Network of **metro rails for public transport** are enhanced and more cities are covered.
- Development of Expressway and Highways are also reducing the fuel consumption and pollution.
- **Eastern Peripheral Expressway & Western Peripheral Expressway** has been operationalized to divert non destined traffic from Delhi.
- **Ban on 10-year-old diesel vehicles** and 15-year-old vehicles in Delhi NCR.
- Environment protection charges (EPC) have been imposed on diesel vehicles with engine capacity of 2000cc and above in Delhi NCR.
- Introduction of cleaner/alternate fuels like CNG, LPG, ethanol blending in petrol.
- **Faster Adoption and Manufacturing of Electric Vehicles (FAME) -2** schemes has been rolled out.
- Permit requirement for electric vehicles has been exempted.
- Promotion of public transport and improvements in roads and building of more bridges to ease congestion on roads.

B. Industrial Emissions

- Ban on use of pet coke and furnace oil in NCR, use of pet coke in processes in cement plants, lime kilns and calcium carbide manufacturing units.
- Stringent emission norms for Coal based Thermal Power Plants (TPPs).
- Shifting of industrial units to PNG/cleaner fuel in Delhi
- Installation of online continuous emission monitoring devices in highly polluting industries.
- Shifting of brick kilns in Delhi- NCR to zig-zag technology for reduction of pollution
- Notified emission standards for industrial boilers and five industrial sectors i.e. lime kiln, foundry, ceramic, glass and reheating furnaces, in the year 2018.

C. Air Pollution due to dust and burning of waste

- Notification of 8 waste management rules covering solid waste, plastic waste, e-waste, bio-medical waste, C&D waste, hazardous waste, battery waste and ash generated from thermal power plants.
- Setting up infrastructure such as waste processing plants.
- Extended Producer Responsibility (EPR) framework for plastic packaging, battery waste, tyre waste and e-waste have been implemented.
- Ban on burning of biomass/garbage.

D. Monitoring of Ambient Air Quality

- Expansion of air quality monitoring network of manual as well as continuous monitoring stations under programmes such as the National Air Monitoring Programme (NAMP).
- Initiation of pilot projects to assess alternate ambient monitoring technologies such as low-cost sensors and satellite-based monitoring.
- Public Grievances and Response System (PGRS) is developed under NCAP

- Emergency Response System (ERS) has been prepared in NCAP cities.
- Air quality monitoring cell has been constituted across the country in NCAP Cities.
- Implementation of Air Quality Early Warning System for Delhi, Kanpur and Lucknow. The system provides alerts for taking timely actions.
- Public Complaints regarding air pollution issues in Delhi NCR are taken through ‘Sameer App’, ‘Emails’ (Aircomplaints.cpcb@gov.in) and ‘Social Media Networks’ (Facebook and Twitter).
- At present ambient air quality is monitored through a network of 1208 manual and real time monitoring stations in 460 towns and cities across 28 states and 7 UTs in the country which is being further strengthened under NCAP.

E. Convergence of schemes of different Ministries/ departments in improving air quality in urban centers and across the country

Government has released several schemes and initiatives to improve air quality. States and Cities are leveraged to utilise resources through convergence of various schemes and programmes of Union and State Governments.

a) Ministry of Housing and Urban Affairs - Urban Swachh Bharat Mission 2.0

- Provision of Rs. 1,41,678 crores under SBM 2.0
- Period - 2021-2026
- Focused areas -
 - Source segregation of garbage,
 - Reduction in single-use plastic,
 - Effective management of C&D waste
 - Bio-remediation of all legacy dump sites
- Metro rail projects- augment public transport network in cities and thereby improvement in air quality

b) Ministry of Heavy Industries - Faster Adoption and Manufacturing of (Hybrid &) Electric Vehicles (FAME) Scheme (Phase II)

- Outlay - Rs. 10,000 Crore
- Period – Started in 2019
- Extended – for 2 years upto 31st March 2024
- Focused areas –
 - 7,090 e-Buses,
 - More than 15 lakh other categories of e-vehicles

c) Ministry of Petroleum and Natural Gas - Sustainable Alternative Towards Affordable Transportation (SATAT)

- Period – 2023-24
- Focused areas
 - Set up 5,000 Compressed Bio-Gas (CBG) production plants
 - CBG for use in automotive fuels

d) Ministry of Petroleum and Natural Gas - Pradhan Mantri Ujjwala Yojana (PMUY)

- Target of providing 8 crore LPG connections has been achieved
- To further increase the LPG coverage, additional 1 crore LPG connections will be released under PMUY.
- Focused areas
 - Reduced emissions from households due to cooking
- City Gas Distribution Network- adoption of cleaner fuels in the country

- e) **Department of Agriculture & Farmer's Welfare - Promotion of Agricultural Mechanization for in-situ management of Crop Residue in the States of Punjab, Haryana, Uttar Pradesh and NCT of Delhi**
 - Rs. 1,749.17 crores for crop residue management in the States of Punjab, Haryana, Uttar Pradesh and NCT of Delhi during FY 2018-19 to Fy 2020-21
 - Rs 700 crores proposed for FY 2021-22
 - Focused areas –
 - Machines for in-situ crop residue management are promoted
 - Subsidies are provided for establishment of Custom Hiring Centres.
- f) **Ministry of Road Transport and Highways**
 - Implementation of BSVI standards
 - Ministry is also focusing on phasing out older vehicular through the vehicle scrapping policy
- g) **Ministry of New and Renewable Energy - Schemes for renewable energy and MSW projects**
 - Promotion of solar power
 - Focused schemes on bio-gas/ bio-methanation plants for managing organic wastes, Waste to energy plants, etc.
 - Provide financial incentives for renewable projects.
- h) **Ministry of Environment Forest and Climate Change - National Mission for Green India**
 - Increase forest/ tree cover on forest/ non-forest lands and improve quality of forest cover.
 - Nagar Van Yojana
- i) **Ministry of Power**
 - Uninterrupted electric power supply
 - Phasing out old coal based power plants
 - Implementation of FGD in thermal power plants, etc.

F. Steps taken for improvement of air quality in Delhi-NCR

- I. Constitution of Commission for Air Quality Improvement in National Capital Region and Adjoining Area (CAQM) through an Act passed by the Parliament of India on 13.08.2021, for the purpose of improving the Air Quality in National Capital Region and Adjoining Areas.

II. Various actions taken by CAQM is summarised as under:

Prevention and control of paddy stubble burning

- Framework for Prevention and control of paddy stubble burning prepared after extensive consultation with State Governments of Punjab, NCR States, GNCTD and Central Ministries, Knowledge institutions namely ICAR, IARI, ISRO etc.
- Major components of the Framework:
 - Plans to reduce generation of paddy straw (diversification to other crops and to other varieties).
 - *In-situ* Crop Residue Management
 - *Ex-situ* Crop Residue Management
 - Monitoring/Effective enforcement.
 - IEC activities.
- Statutory Directions to develop detailed state specific Action Plans based on the Framework. Plans finalized for Punjab, Haryana and Uttar Pradesh for 2022,

based on the framework and also field learnings from the year 2021. The plans include a futuristic policy for ex-situ utilization of paddy straw.

- Statutory directions issued for mandatory co-firing of biomass with coal (@5-10%) in thermal power plants located within 300 kms. of Delhi.
- Statutory Directions issued for effective implementation of action plans for the prevention and control of Stubble Burning.
- Standard ISRO protocol developed for monitoring fire events. Statutory Directions issued for adoption of the protocol for recording of fire events using satellite data.
- Close monitoring by CAQM of the daily fire counts – regular follow up with the State Governments.
- Commission has evolved a comprehensive policy in July, 2022 towards short-term/ medium-term/ long-term actions to abate air pollution in the region across all contributing sectors.
- CPCB framed guidelines for promoting setting up of paddy straw based pelletization and Torrefaction plants which will help in addressing the supply chain issues. Scheme addresses the issue of open burning of paddy straw in agriculture fields in Northern Region. A corpus of Rs. 50 crores have been sanctioned from EPC funds. Assuming complete utilization of the corpus, over 1 million metric tonnes of paddy straw based pellets are expected to be generated every year.

Control of industrial emissions

- Statutory Directions issued for implementing the “Standard” fuel list of approved clean fuels in NCR and phasing out heavily polluting fossil fuels like coal, diesel oil, LDO etc.
- Statutory Directions for industries to shift to approved fuels, by 30.09.2022 (for areas where gas infrastructure is available) and by 31.12.2022, where gas infrastructure is still not available.

Directions/ Regulations for use of Power Generating Sets

- No restrictions on generator sets running on LPG/Natural gas, Butane/Propane/Biogas
- Uninterrupted use of DG sets permitted only for emergency services during GRAP.
- DISCOMS to ensure uninterrupted power supply in NCR to minimize use of DG Sets.
- Regulated use of DG Sets for industrial sector during GRAP for limited time subject to retro fitment of Emission Control Devices (ECD) and running on dual fuel mode (gas and diesel)

Control of vehicular pollution

- Implementation of Orders of Hon’ble NGT’s and Hon’ble Supreme Court’s not permitting overaged vehicles (15/10 yrs. for petrol / diesel vehicles respectively) to run in NCR.
- Advisory issued by Commission for developing suitable EV policies, focusing on mandatory procurement of e-vehicles for various sectors.
- Transition to CNG / cleaner vehicles also in outer NCR.
- Effective PUC regime – control on polluting vehicles

Dust management from roads and open areas and from construction and demolition activities

(i) Road dust management

- Statutory directions to all road owning/ maintaining agencies for setting up of 'Dust Control and Management Cells' (DCMCs).
- Key actions for DCMCs:
 - Optimum utilization of road sweeping machines
 - Scientific disposal of dust collected
 - Sprinkling of water and dust suppressants on roads / right of ways
 - Augmentation of sweeping and sprinkling machines
 - Proper maintenance of roads and also keep road pothole free
 - Laying of roads to fully support mechanised sweeping.
 - Non-paved road sides to be paved or converted into green
 - Greening of central verges / plantation of trees
 - Cemented roads in industrial areas.
 - Identification of hot spots and implement specific road dust control measures
- Sixty (60) 'Dust Control and Management Cells' set up.
 - NCT of Delhi : 11
 - Uttar Pradesh : 18
 - Haryana : 17
 - Rajasthan : 14

(ii) Dust management from C&D projects:

- Statutory directions issued mandatory registration of projects on plot size is equal to or more than 500 sq mtr. on the C&D web portal.
- Web portals functional in Delhi, Haryana and Uttar Pradesh. Under development in Rajasthan.
- Self-certification by the proponents on the portal.
- Cross Verification of the parameters as certified on the portal vis-à-vis the ground conditions.
- Compliances related to various rules and guidelines related to effective dust mitigation measures at C&D sites viz. Wind breakers, dust screens, water sprinkling, dust suppressants and soil stabilization measures etc.
- Deployment of adequate numbers of anti-smog guns, in proportion to the area of the construction sites.
 - At least 1 for a total construction area between 5000 - 10000 sqm.
 - At least 2 for a total construction area between 10001- 15000 sqm.
 - At least 3 for a total construction area between 15001- 20000 sqm.
 - At least 4 for a total construction Area 20,000 sqm.
- Compliance of guidelines for covering of construction materials with dust potential.
- Transportation of C&D materials in covered vehicles.

Other matters:

(i) Revised Graded Response Action Plan (GRAP)

- Revised GRAP based on Delhi's AQI as against PM2.5 / PM10 levels earlier.
- Preventive / restrictive / prohibitive actions under 4 different stages (I-IV) w.e.f. 01.10.2022.
- Daily forecasts by IMD/ IITM started.
- Sub-Committee for invoking GRAP meeting regularly for invoking the GRAP actions, based on the AQI forecast.

- Actions under Stage II, III and IV of the GRAP to be invoked at least three days in advance of the AQI reaching to the projected levels of that stage, based on the forecast.
 - 24 action points under Stage-I 'Poor' (AQI 201-300)
 - 12 action points under Stage- II 'Very Poor' (AQI 301-400)
 - 9 action points under Stage III 'Severe' (AQI 401-450)
 - 8 action points under Stage IV 'Severe+' (AQI>450)
- (ii) Prevention of open burning of solid waste and bio-mass Desired Actions:
 - Intensified inspections / monitoring during winters.
 - Proper collection, segregation and disposal of solid waste.
 - Proper clearance of leaves, twigs etc. after road cleaning activities.
- (iii) Prevention of air pollution through fire crackers Desired Actions:
 - Strict implementation of Hon'ble Supreme Court / NGT orders on use of fire crackers.
 - Enforce ban on use of fire crackers wherever imposed.
