GOVERNMENT OF INDIA
MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE

LOK SABHA
UNSTARRED QUESTION No. 5135
TO BE ANSWERED ON 03.04.2023

Pollution Ranking

5135. SHRI GURJEET SINGH AUJLA:
SHRI ANUBHAV MOHANTY:
SHRI BALUBHAU ALIAS SURESH NARAYAN DHANORKAR:
SHRI SUNIL KUMAR:
DR. MOHAMMAD JAWED:
DR. BHARATIBEN DHIRUBHAI SHIYAL:

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

(a) whether India ranks among the top 10 countries in terms of pollution in the world;
(b) whether the data is available with the Government about the various factors which increase the pollution level, if so, the details of the sources which are causing more pollution;
(c) the names of the cities where pollution level has increased during the last two years;
(d) whether Mumbai's air quality turned worse during the last three years like Delhi;
(e) the details of the steps taken by the Government to reduce the pollution level in the country; and
(f) whether the Government has prepared any strategy to reduce the pollution level in future and if so, the details thereof?

ANSWER

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

(a) to (f):
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/UTs by engaging all stakeholders. The programme envisages to achieve reductions up to 40% or achievement of National Ambient Air Quality Standards for Particulate Matter10 (PM 10) concentrations by 2025-26.

Source Apportionment Studies (SAS) have been carried out in 37 cities under NCAP to identify various sources contributing to air pollution. Various sources of pollution such as construction and demolition activities, industrial pollution, road dust, vehicular emissions, biomass burning, etc have been identified in 37 cities where Source Apportionment Studies

have been carried out. List of cities where SAS has been carried out is provided at **Annexure-I**.

Details of air quality in terms of PM10 levels of 131 cities under NCAP during last two years, viz. FY 2020-21 and 2021-22 with reference to the base year of 2017-18, are provided at **Annexure-II.** Out of 131 cities, 95 cities have been shown improvement in air quality interms of Particulate Matter10 (PM10) concentrations in FY 2021-22 with respect to base year FY 2017-18. PM10 levels of Mumbai in the year 2021-22 is 106 $\mu g/m^3$ and shows improvement of 34% with respect to base year 2017-18.

The details of steps taken by Government to control air pollution in country enclosed in **Annexure-III**.

***

Annexure-I

List of cities where Source Apportionment Studies (SAS) has been carried out

State	S.No.	City
Bihar	1.	Patna
	2.	Gaya
	3.	Muzaffarpur
Gujarat	4.	Surat
	5.	Ahmedabad
Himachal Pradesh	6.	Baddi
	7.	Damtal
	8.	Kala Amb
	9.	Nalagarh
	10.	Paonta Sahib
	11.	Parwanoo
	12.	Sunder Nagar
Jharkhand	13.	Dhanbad
Karnataka	14.	Bangalore
Madhya Pradesh	15.	Bhopal
	16.	Gwalior
	17.	Amravati
Maharashtra	18.	Aurangabad
	19.	Chandrapur
	20.	Kolhapur
	21.	Mumbai
	22.	Nagpur
	23.	Nashik
	24.	Navi Mumbai
	25.	Pune
	26.	Solapur

State	S.No.	City
Punjab	27.	Ludhiana
	28.	NayaNangal
	29.	Khanna
	30.	DeraBassi
	31.	Gobindgarh
	32.	Pathankot/Dera Baba
	33.	Patiala
	34.	Jalandhar
Rajasthan	35.	Jaipur
Uttar Pradesh	36.	Agra
	37.	Kanpur

Annexure-II

Details of air quality in terms of PM10 levels of 131 cities under NCAP during the FY 2020-21 and 2021-22

States	Sl. No.	Cities	2017-2018	2020-2021	2021-2022
			Average concentration (F.Y.) of PM10 (µg/m3)	Average concentration (F.Y.)of PM10 (µg/m3)	Average concentration (F.Y.) of PM10 (µg/m3)
Andhra Pradesh	1	Anantpur	78	58	52
	2	Chittur	70	41	49
	3	Eluru	72	58	65
	4	Guntur	66	56	58
	5	Kadapa	75	50	54
	6	Kurnool	79	52	61
	7	Nellore	64	56	55
	8	Ongole	65	49	52
	9	Rajamahendravaram	85	69	68
	10	Srikakulam	69	66	75
	11	Vijayawada	91	56	67
	12	Visakhapatnam	76	104	98
	13	Vizhianagaram	72	63	71
Assam	14	Guwahati	103	114	103
	15	Nagaon	82	90	104
	16	Nalbari	87	57	99
	17	Silchar	49	43	45
	18	Sivasagar	73	48	47
Bihar	19	Patna	172	143	145
	20	Gaya	79	71	97
	21	Muzaffarpur	147	180	153
Chandigarh	22	Chandigarh	114	90	97
Chattisgarh	23	Korba	57	46	61
	24	DurgBhilainagar	86	56	58
	25	Raipur	70	55	61
Delhi	26	Delhi	241	193	196
Gujarat	27	Ahmedabad	164	120	113
	28	Rajkot	150	94	116
	29	Surat	130	93	100
	30	Vadodara	133	95	121
Haryana	31	Faridabad	-	229	209

Himachal Pradesh	32	Baddi	174	123	132
	33	Damtal	55	65	64
	34	Kala Amb	118	64	114
	35	Nalagarh	146	90	84
	36	Paonta Sahib	84	78	90
	37	Parwanoo	66	44	35
	38	Sunder Nagar	78	63	47
Jammu& Kashmir	39	Jammu	157	186	170
	40	Srinagar	-	163	111
Jharkhand	41	Dhanbad	315	198	235
	42	Jamshedpur	135	96	110
	43	Ranchi	141	105	110
Karnataka	44	Bengaluru	92	62	67
	45	Devangere	74	72	57
	46	Gulburga /Kalaburgi	55	92	84
	47	Hubli-Dharwad	79	69	68
Madhya Pradesh	48	Bhopal	112	114	116
	49	Dewas	83	93	81
	50	Gwalior	126	125	109
	51	Indore	82	96	103
	52	Jabalpur	101	106	115
	53	Sagar	73	64	79
	54	Ujjain	93	104	114
Maharashtra	55	Aurangabad	75	65	86
	56	Akola	111	54	64
	57	Amravati	102	58	66
	58	Badlapur	160	67	94
	59	Chandrapur	118	100	104
	60	GreaterMumbai	161	98	106
	61	Jalgaon	70	53	59
	62	Jalna	99	86	93
	63	Kolhapur	89	83	81
	64	Latur	82	54	57
	65	Nagpur	100	68	68
	66	Nashik	82	51	59
	67	Navi Mumbai	88	52	97
	68	Pune	102	69	85
	69	Sangli	87	71	60
	70	Solapur	81	79	60
	71	Thane	138	105	130

	72	Ulhasnagar	153	66	77
	73	Vasai virar	-	43	174
Meghalaya	74	Byrnihat	175	127	181
Nagaland	75	Dimapur	142	85	84
	76	Kohima	127	84	69
Odisha	77	Angul	97	88	97
	78	Balasore	84	78	74
	79	Bhubneshwar	85	78	95
	80	Cuttack	93	86	90
	81	Kalinga Nagar	109	104	114
	82	Rourkela	99	96	106
	83	Talcher	113	98	81
Punjab	84	Amritsar	189	113	118
	85	Dera BabaNanak	79	66	71
	86	DeraBassi	88	105	98
	87	Jalandhar	178	150	130
	88	Khanna	142	101	106
	89	Ludhiana	168	129	150
	90	MandiGobindgarh	148	131	122
	91	NayaNangal	87	95	70
	92	Patiala	106	102	109
Rajasthan	93	Jaipur	172	112	126
	94	Alwar	152	110	112
	95	Jodhpur	189	155	161
	96	Kota	139	100	112
	97	Udaipur	127	109	122
Tamil Nadu	98	Chennai	66	60	57
	99	Madurai	72	57	53
	100	Trichy	88	40	45
	101	Tuticorin	123	84	67
Telangana	102	Hyderabad	110	88	88
	103	Nalgonda	59	60	70
	104	Patencheru	74	77	76
	105	Sangareddy	85	77	83
Uttar Pradesh	106	Agra	202	188	146
	107	Allahabad	169	184	119
	108	Ghaziabad	285	218	216
	109	Kanpur	227	169	170
	110	Lucknow	253	209	148
	111	Meerut	159	200	186

	112	Varanasi	230	168	114
	113	Anpara	175	142	154
	114	Bareily	207	193	175
	115	Firozabad	247	186	137
	116	Gajraula	204	168	155
	117	Gorakpur	150	168	122
	118	Jhansi	109	99	128
	119	Khurja	195	194	173
	120	Moradabad	222	206	155
	121	Noida	229	197	203
	122	Raebareli	145	98	112
Uttarakhand	123	Dehradun	250	144	146
	124	Kashipur	99	129	119
	125	Rishikesh	129	77	117
West Bengal	126	Asansol	147	114	112
	127	Barrackpore	86	75	85
	128	Durgapur	150	103	168
	129	Haldia	92	93	94
	130	Howrah	139	117	125
	131	Kolkata	147	99	105

Annexure-III

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 MantriUjjwalaYojana (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

o 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 sqmtr. 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.

***