

GOVERNMENT OF INDIA  
MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE

**LOK SABHA**  
**UNSTARRED QUESTION No. 5150**  
TO BE ANSWERED ON: 04.04.2022

**Innovating Technologies for Solid Waste Management**

5150. SHRI KUMBAKUDI SUDHAKARAN:  
SHRI KANUMURU RAGHU RAMA KRISHNA RAJU:

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

- (a) the details of annual levels of PM 2.5 and PM 10, from 2018 till date and whether the Government is on track to meet the objective of reducing PM 2.5 levels to less than 50 by 2022 as per the Niti Aayog New India @75 strategy report;
- (b) if so, the details thereof and if not, the reasons therefor;
- (c) the details of measures taken to curb methane emissions from burning of solid waste;
- (d) whether the Government inviting the public to come up with innovative technological solutions for effective solid waste management;
- (e) if so, the details thereof and response received along with the number of projects taken up/completed, State-wise, and funds spent thereon; and
- (f) whether the Government finds solutions and should focus on zero dumping of garbage, plastic waste management and transparency through digital engagement and if so, the details thereof and present status thereof?

**ANSWER**

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

(a) & (b): The analysis of ambient air quality data of Particulate Matter of 132 Non-Attainment Cities (NACs) state-wise indicated that PM<sub>10</sub> concentration has decreased in 107 cities in 2020-2021 as compared to 2018-2019, whereas 22 cities showed an increase of PM<sub>10</sub> concentration and 01 city showed no change in concentration. The city-wise profiles of PM<sub>10</sub> concentration for the years 2018-2019 to 2020-2021 is given at **Annexure I**. The ambient air quality data is not available in Vasai Virar and Faridabad for comparison.

The Government has launched National Clean Air Programme (NCAP) in 2019 as a national-level strategy to reduce air pollution levels across the country. PRANA a portal for monitoring implementation of NCAP has also been launched.

(c): Burning of solid waste is prohibited under Solid Waste Management Rules, 2016. The municipal solid waste present at dump sites and landfills is a significant contributor towards landfill gas (LFG), which is mainly constituted of methane and carbon dioxide. Under Swachh Bharat Mission Urban 2.0, there is a vision of 'Garbage Free Cities' over the next

five years through remediation of legacy waste dumpsites, complete scientific management of all fractions of waste, including safe disposal in scientific landfills.

(d) to (f): The Ministry of Housing and Urban Affairs (MoHUA) has started Swachh Technology Challenge under Swachh Bharat Mission-Urban (SBM-U) 2.0 to promote innovative technological solutions in waste management sector Under the Swachh Technology Challenge, the Urban Local Bodies (ULBs) across the country had sought entries from individuals and organizations at the city level.

More than 4000 entries have been received from various cities. The solutions provided by successful applicants are proposed to be recognized at City level, State level, and National level. At the State level, awards would be given to the solutions provided by the winning applicants ranging from Rs. 75,000 to Rs. 5 lakhs, as per guidelines. A total of 54 solutions have been finalized/approved by the States. The top 10 solutions received will become eligible to participation in Swachhata Start-up Challenge. The winning solutions of Swachhata Start-up Challenge will get financial support of Rs.25 lakhs per selected project from MoHUA and one year of dedicated incubation support.

Separately, a Swachhata Management Platform “Swachhatam” along with GIS platform based App was launched under SBM-U 2.0, by MoHUA, to enable data driven decision making and to maintain transparency through digital engagement.

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**Annexure I****Cities showing decreased concentration (107 cities) of PM<sub>10</sub> - 2018-2019 to 2020-2021**

No.	States / UTs	Cities	Average concentration (F.Y.) of PM <sub>10</sub> (µg/m <sup>3</sup> )		
			2018-2019	2019-2020	2020-2021
1.	Andhra Pradesh	Anantpur	68	60	58
2.	Andhra Pradesh	Chittur	63	51	41
3.	Andhra Pradesh	Eluru	68	64	58
4.	Andhra Pradesh	Kadapa	61	48	50
5.	Andhra Pradesh	Kurnool	64	56	52
6.	Andhra Pradesh	Nellore	64	67	56
7.	Andhra Pradesh	Ongole	64	59	49
8.	Andhra Pradesh	Rajamahendravaram	77	61	69
9.	Andhra Pradesh	Srikakulam	71	66	66
10.	Andhra Pradesh	Visakhapatnam	108	68	63
11.	Andhra Pradesh	Vizhianagaram	66	57	56
12.	Assam	Nagaon	97	92	90
13.	Assam	Nalbari	91	75	57
14.	Assam	Silchar	48	45	43
15.	Assam	Sivasagar	68	55	48
16.	Bihar	Gaya	82	76	71
17.	Bihar	Patna	211	170	143
18.	Chandigarh	Chandigarh	98	92	90
19.	Chattisgarh	Durg Bhilainagar	78	75	56
20.	Chattisgarh	Korba	61	54	46
21.	Chattisgarh	Raipur	68	63	55
22.	Delhi	Delhi	226	192	193
23.	Gujarat	Ahmedabad	233	116	120
24.	Gujarat	Rajkot	182	113	94
25.	Gujarat	Surat	175	109	93
26.	Gujarat	Vadodara	199	108	95
27.	Himachal Pradesh	Baddi	179	133	123
28.	Himachal Pradesh	Kala Amb	102	95	64
29.	Himachal	Paonta Sahib	86	98	78

No.	States / UTs	Cities	Average concentration (F.Y.) of PM <sub>10</sub> ( $\mu\text{g}/\text{m}^3$ )		
			2018-2019	2019-2020	2020-2021
	Pradesh				
30.	Himachal Pradesh	Parwanoo	61	60	44
31.	Himachal Pradesh	Sunder Nagar	82	69	63
32.	Haryana	Faridabad	-	-	229
33.	Jharkhand	Dhanbad	252	211	198
34.	Jharkhand	Jamshedpur	121	138	96
35.	Jharkhand	Ranchi	116	108	105
36.	Karnataka	Bengaluru	92	73	62
37.	Karnataka	Hubli-Dharwad	85	78	69
38.	Madhya Pradesh	Bhopal	134	141	114
39.	Madhya Pradesh	Dewas	107	91	93
40.	Madhya Pradesh	Gwalior	133	136	125
41.	Madhya Pradesh	Sagar	75	71	64
42.	Madhya Pradesh	Ujjain	113	90	104
43.	Maharashtra	Akola	71	66	54
44.	Maharashtra	Amravati	106	89	58
45.	Maharashtra	Aurangabad	77	76	65
46.	Maharashtra	Badlapur	148	88	67
47.	Maharashtra	Chandrapur	107	93	100
48.	Maharashtra	Greater Mumbai	132	106	98
49.	Maharashtra	Jalgaon	70	57	53
50.	Maharashtra	Jalna	101	95	86
51.	Maharashtra	Kolhapur	89	95	83
52.	Maharashtra	Latur	90	84	54
53.	Maharashtra	Nagpur	93	80	68
54.	Maharashtra	Nashik	73	57	51
55.	Maharashtra	Navi Mumbai	80	54	52
56.	Maharashtra	Pune	103	81	69
57.	Maharashtra	Sangli	80	70	71
58.	Maharashtra	Thane	118	79	105
59.	Maharashtra	Ulhasnagar	131	83	66
60.	Maharashtra	Vasai Virar	-	99	-
61.	Meghalaya	Byrnihat	155	97	127
62.	Nagaland	Dimapur	124	84	85
63.	Nagaland	Kohima	103	81	84
64.	Odisha	Angul	101	95	88
65.	Odisha	Balasore	86	86	78
66.	Odisha	Bhubneshwar	100	103	78
67.	Odisha	Cuttack	116	104	86

No.	States / UTs	Cities	Average concentration (F.Y.) of PM <sub>10</sub> (µg/m <sup>3</sup> )		
			2018-2019	2019-2020	2020-2021
68.	Odisha	Kalinga Nagar	120	113	104
69.	Odisha	Rourkela	118	112	96
70.	Odisha	Talcher	113	122	98
71.	Punjab	Amritsar	124	109	113
72.	Punjab	Dera Baba Nanak	84	68	66
73.	Punjab	Khanna	104	113	101
74.	Rajasthan	Alwar	176	126	110
75.	Rajasthan	Jaipur	144	124	112
76.	Rajasthan	Jodhpur	218	167	155
77.	Rajasthan	Kota	144	102	100
78.	Rajasthan	Udaipur	141	136	109
79.	Tamil Nadu	Chennai	79	60	60
80.	Tamil Nadu	Madurai	85	66	57
81.	Tamil Nadu	Trichy	109	58	40
82.	Tamil Nadu	Tuticorin	98	84	84
83.	Telangana	Hyderabad	96	86	88
84.	Telangana	Patencheru	81	87	77
85.	Telangana	Sangareddy	82	87	77
86.	Uttar Pradesh	Agra	196	163	188
87.	Uttar Pradesh	Allahabad	225	219	184
88.	Uttar Pradesh	Anpara	176	169	142
89.	Uttar Pradesh	Bareilly	221	185	193
90.	Uttar Pradesh	Firozabad	211	213	186
91.	Uttar Pradesh	Gajraula	228	217	168
92.	Uttar Pradesh	Ghaziabad	256	218	218
93.	Uttar Pradesh	Gorakpur	284	278	168
94.	Uttar Pradesh	Kanpur	217	200	169
95.	Uttar Pradesh	Khurja	202	226	194
96.	Uttar Pradesh	Lucknow	210	216	209
97.	Uttar Pradesh	Moradabad	218	243	206
98.	Uttar Pradesh	Noida	252	213	197
99.	Uttar Pradesh	Raebareli	140	161	98
100.	Uttar Pradesh	Varanasi	211	180	168
101.	Uttarakhand	Dehradun	192	166	144
102.	Uttarakhand	Rishikesh	133	136	77
103.	West Bengal	Asansol	123	124	114
104.	West Bengal	Barrackpore	107	108	75
105.	West Bengal	Durgapur	144	125	103
106.	West Bengal	Haldia	95	69	93
107.	West Bengal	Howrah	145	144	117
108.	West Bengal	Kolkata	128	101	99
109.	West Bengal	Rani Ganj	161	177	107

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