

GOVERNMENT OF INDIA
MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE

LOK SABHA
STARRED QUESTION NO. 149
TO BE ANSWERED ON 31.07.2023

Ground Level Ozone

*149. SHRI RAJIV PRATAP RUDY:
SHRI FEROZE VARUN GANDHI:

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

- (a) whether the Government has taken cognizance of the geographical distribution and exceeding frequency of the ground-level ozone during the summers and if so, the details thereof and if not, the reasons therefor;
- (b) whether the Government maintains data on deaths associated with ozone and if so, the details thereof, State/UT-wise and if not, the reasons therefor;
- (c) whether the Government monitors levels of ozone as a contributing factor to determine the nonattainment status of the cities;
- (d) if so, the details of the non-attainment cities where the level of ozone is highest and if not, the reasons therefor;
- (e) the details of the steps taken to improve monitoring mechanisms for ground-level ozone;
- (f) the details of instruments that are used at present for activities like hotspot monitoring and per baseline determination of air quality and whether any State has implemented sensor based technology for the same; and
- (g) whether the Government is facing challenges in air quality measurement due to particle density variability and if so, the measures taken in this regard?

ANSWER

MINISTER FOR ENVIRONMENT, FOREST AND CLIMATE CHANGE
(SHRI BHUPENDER YADAV)

- (a) to (g) A Statement is laid on the Table of the House.

STATEMENT REFERRED TO IN REPLY TO PARAS (a) TO (g) OF THE LOK SABHA STARRED QUESTION NO. 149 FOR 31.07.2023 REGARDING “GROUND LEVEL OZONE” RAISED BY SHRI RAJIV PRATAP RUDY AND SHRI FEROZE VARUN GANDHI, HON’BLE MEMBERS OF PARLIAMENT.

Ground level concentrations of Ozone are monitored as per the methods prescribed in the Notification regarding National Ambient Air Quality Standards (NAAQS) dated 18th November, 2009. Details of Ozone levels monitored in 167 cities during April-June, 2022 are provided at **Annexure-I**. 101 cities meet the National Ambient Air Quality Standard for Ozone during April-June, 2022.

There is no conclusive data available to establish a direct correlation of death/disease exclusively with air pollution. Air pollution is one of the many factors affecting respiratory ailments and associated diseases. Health is impacted by a number of factors which includes food habits, occupational habits, socio-economic status, medical history, immunity, heredity, etc., of the individuals apart from the environment.

Non-attainment cities (NAC) are identified based on ambient air quality data levels exceeding annual National Ambient Air Quality Standards (NAAQS 2009) with respect to any one of the notified parameters consecutively for five years. Ambient Air Quality parameters having long-term or annual national standards are considered for assessment of NAC.

Ground level concentrations of Ozone monitored in 64 Non-Attainment Cities reveal that 40 cities are within the National Standards, 3 cities have exceeded the Standard by 1% and 12 cities have exceeded the Standard by up to 10%. Details of Ozone data of 64 Non-attainment cities for the year 2022 are provided at **Annexure-II**.

Funds are provided to State Pollution Control Board/Pollution Control Committees for establishment of Ambient Air Quality Monitoring Stations (AQMS) on need basis under the component of National Air Quality Monitoring Programme (NAMPP) of Central Sector Scheme ‘Control of pollution’.

Central Pollution Control Board has prescribed various methods of measurement of concentrations of 12 ambient air quality parameters including Ozone, vide Notification dated 18th November, 2009. Central Pollution Board has not approved the sensor based technology for measurements for regulatory purpose.

Annexure - I

Annexure - I referred in reply to part (a) to (g) of the Lok Sabha Starred Question No. 149 due for answer on 31.07.2023 regarding 'Ground Level Ozone' raised by Shri Rajiv Pratap Rudy and Shri Feroze Varun Gandhi, Hon'ble Members of Parliament.

Exceedance of Ozone during Summer months (April, May & June): Year 2022					
S.No.	State / UT	City	Number of observations (8 Hourly)	Number of 8-hourly observations exceeding the National Standard	% of observations exceeding the National Standard
1.	Haryana	Kurukshetra	270	96	35.6
2.	Uttar Pradesh	Bulandshahr	266	87	32.7
3.	Bihar	Sasaram	258	84	32.6
4.	Bihar	Mitihari	266	84	31.6
5.	Uttar Pradesh	Muzaffarnagar	247	70	28.3
6.	Madhya Pradesh	Singrauli	272	63	23.2
7.	Haryana	Sirsa	266	57	21.4
8.	Chandigarh	Chandigarh	273	57	20.9
9.	Uttar Pradesh	Greater Noida	273	48	17.6
10.	Punjab	Amritsar	246	41	16.7
11.	Maharashtra	Thane	220	33	15.0
12.	Madhya Pradesh	Gwalior	249	37	14.9
13.	Uttar Pradesh	Ghaziabad	273	39	14.3
14.	Madhya Pradesh	Bhopal	271	38	14.0
15.	Maharashtra	Nagpur	267	34	12.7
16.	Uttar Pradesh	Firozabad	270	33	12.2
17.	Odisha	Brajrajnagar	219	26	11.9
18.	Uttar Pradesh	Hapur	267	29	10.9
19.	Uttar Pradesh	Baghpat	262	28	10.7
20.	Karnataka	Udupi	114	12	10.5
21.	Uttar Pradesh	Meerut	273	28	10.3
22.	Haryana	Manesar	230	23	10.0
23.	Uttarakhand	Dehradun	183	18	9.8
24.	Haryana	Fatehabad	251	22	8.8
25.	West Bengal	Asansol	273	22	8.1
26.	Madhya Pradesh	Indore	273	19	7.0
27.	Bihar	Siwan	244	13	5.3
28.	Bihar	Saharsa	151	8	5.3

29.	Bihar	Kisanganj	269	14	5.2
30.	Madhya Pradesh	Katni	272	14	5.1
31.	Punjab	Ludhiana	273	14	5.1
32.	Punjab	Patiala	273	14	5.1
33.	Haryana	Jind	269	13	4.8
34.	Bihar	Rajgir	260	11	4.2
35.	Bihar	Chhapra	260	9	3.5
36.	Karnataka	Koppal	219	7	3.2
37.	Bihar	Araria	251	8	3.2
38.	Bihar	Bhagalpur	269	8	3.0
39.	Madhya Pradesh	Jabalpur	272	8	2.9
40.	Bihar	Gaya	273	8	2.9
41.	Uttar Pradesh	Varanasi	273	7	2.6
42.	Haryana	Dharuhera	256	6	2.3
43.	Madhya Pradesh	Ujjain	268	6	2.2
44.	Andhra Pradesh	Amravati	272	6	2.2
45.	Bihar	Muzzafarpur	273	6	2.2
46.	Uttar Pradesh	Noida	273	5	1.8
47.	Sikkim	Gangtok	235	4	1.7
48.	Haryana	Ballabgarh	272	4	1.5
49.	Bihar	Manguraha	237	3	1.3
50.	Rajasthan	Jodhpur	251	3	1.2
51.	Haryana	Yamuna nagar	267	3	1.1
52.	Haryana	Panchkula	271	3	1.1
53.	Punjab	Jalandhar	273	3	1.1
54.	Bihar	Hajipur	263	2	0.8
55.	Haryana	Palwal	264	2	0.8
56.	Gujarat	Vatva	269	2	0.7
57.	Uttar Pradesh	Moradabad	273	2	0.7
58.	Bihar	Begusarai	221	1	0.5
59.	Haryana	Panipath	243	1	0.4
60.	Bihar	Purnia	244	1	0.4
61.	Haryana	Ambala	270	1	0.4
62.	Rajasthan	Udaipur	270	1	0.4
63.	Uttar Pradesh	Vridavan	270	1	0.4
64.	Bihar	Munger	272	1	0.4
65.	Rajasthan	Pali	272	1	0.4
66.	Rajasthan	Jaipur	273	1	0.4

67.	Andhra Pradesh	Rajmahendravaram	266	0	0.0
68.	Andhra Pradesh	Tirupati	256	0	0.0
69.	Arunachal Pradesh	Naharlagun	74	0	0.0
70.	Assam	Guwahati	273	0	0.0
71.	Bihar	Aurangbad	272	0	0.0
72.	Bihar	Bettiah	248	0	0.0
73.	Bihar	Sharif	262	0	0.0
74.	Bihar	Buxar	232	0	0.0
75.	Bihar	Darbhanga	243	0	0.0
76.	Bihar	Katihar	246	0	0.0
77.	Bihar	Patna	273	0	0.0
78.	Bihar	Samastipur	268	0	0.0
79.	Delhi	Delhi	273	0	0.0
80.	Gujarat	Ahmedabad	273	0	0.0
81.	Gujarat	Ankaleshwar	273	0	0.0
82.	Gujarat	Gandhinagar	273	0	0.0
83.	Gujarat	Vapi	174	0	0.0
84.	Haryana	Bahadurgarh	264	0	0.0
85.	Haryana	Bhiwani	196	0	0.0
86.	Haryana	CharkhiDadri	265	0	0.0
87.	Haryana	Faridabad	273	0	0.0
88.	Haryana	Gurugram	273	0	0.0
89.	Haryana	Hisar	263	0	0.0
90.	Haryana	Kaithal	273	0	0.0
91.	Haryana	Karnal	252	0	0.0
92.	Haryana	Mandikhera	265	0	0.0
93.	Haryana	Narnaul	273	0	0.0
94.	Haryana	Rohtak	270	0	0.0
95.	Haryana	Sonipath	150	0	0.0
96.	Himachal Pradesh	Baddi	269	0	0.0
97.	Jammu and Kashmir	Srinagar	241	0	0.0
98.	Jharkhand	Jorapokhar	21	0	0.0
99.	Karnataka	Bagalkot	270	0	0.0
100.	Karnataka	Bengaluru	273	0	0.0
101.	Karnataka	Bidar	134	0	0.0
102.	Karnataka	Chamarajanaga	262	0	0.0

103.	Karnataka	Chikkaballapur	251	0	0.0
104.	Karnataka	Chikkamagaluru	269	0	0.0
105.	Karnataka	Davanagere	215	0	0.0
106.	Karnataka	gadag	176	0	0.0
107.	Karnataka	Hassan	228	0	0.0
108.	Karnataka	Haveri	120	0	0.0
109.	Karnataka	Hubbali	232	0	0.0
110.	Karnataka	Kalaburgi	224	0	0.0
111.	Karnataka	Kolar	109	0	0.0
112.	Karnataka	Madikeri	264	0	0.0
113.	Karnataka	Manglor	242	0	0.0
114.	Karnataka	Mysuru	271	0	0.0
115.	Karnataka	Raichur	217	0	0.0
116.	Karnataka	Vijay Nagar	273	0	0.0
117.	Karnataka	Shivamogga	262	0	0.0
118.	Karnataka	Vijayapura	273	0	0.0
119.	Karnataka	Yadgir	261	0	0.0
120.	Kerala	Eloor	215	0	0.0
121.	Kerala	Kannur	259	0	0.0
122.	Kerala	Kochi	241	0	0.0
123.	Kerala	Kollam	271	0	0.0
124.	Kerala	Kozhikode	263	0	0.0
125.	Kerala	Thiruvananthapuram	273	0	0.0
126.	Kerala	Thrissur	194	0	0.0
127.	Madhya Pradesh	Dewas	268	0	0.0
128.	Madhya Pradesh	Mandideep	258	0	0.0
129.	Madhya Pradesh	Pithampur	273	0	0.0
130.	Madhya Pradesh	Satna	113	0	0.0
131.	Maharashtra	Aurangabad	272	0	0.0
132.	Maharashtra	Chandrapur	273	0	0.0
133.	Maharashtra	Kalyan	218	0	0.0
134.	Maharashtra	Nashik	262	0	0.0
135.	Maharashtra	Navi Mumbai	272	0	0.0
136.	Maharashtra	Solapur	236	0	0.0
137.	Maharashtra	Pune	273	0	0.0
138.	Maharashtra	Mumbai	273	0	0.0
139.	Meghalaya	Shillong	246	0	0.0
140.	Manipur	Imphal	219	0	0.0

141.	Mizoram	Aizwal	272	0	0.0
142.	Nagaland	Kohima	263	0	0.0
143.	Pudducherry	Pudducherry	267	0	0.0
144.	Odisha	Talcher	273	0	0.0
145.	Punjab	Khanna	273	0	0.0
146.	Punjab	Gobindagarh	262	0	0.0
147.	Rajasthan	Ajmer	273	0	0.0
148.	Rajasthan	Alwar	272	0	0.0
149.	Rajasthan	Bhiwadi	273	0	0.0
150.	Rajasthan	Kota	273	0	0.0
151.	Tamilnadu	Chennai	273	0	0.0
152.	Tamilnadu	Coimbatore	271	0	0.0
153.	Tamilnadu	Thoothukudi	268	0	0.0
154.	Telangana	Hyderabad	273	0	0.0
155.	Tripura	Agartala	273	0	0.0
156.	Uttar Pradesh	Lucknow	273	0	0.0
157.	Uttar Pradesh	Prayagraj	273	0	0.0
158.	Uttar Pradesh	Agra	273	0	0.0
159.	Uttar Pradesh	Bareilly	72	0	0.0
160.	Uttar Pradesh	Gorakhpur	272	0	0.0
161.	Uttar Pradesh	Jhansi	236	0	0.0
162.	Uttar Pradesh	Kanpur	273	0	0.0
163.	Uttar Pradesh	Khurja	79	0	0.0
164.	West Bengal	Haldia	270	0	0.0
165.	West Bengal	Howrah	273	0	0.0
166.	West Bengal	Kolkata	273	0	0.0
167.	West Bengal	Siliguri	272	0	0.0

Annexure - II

Annexure - II referred in reply to part (a) to (g) of the Lok Sabha Starred Question No. 149 due for answer on 31.07.2023 regarding 'Ground Level Ozone' raised by Shri Rajiv Pratap Rudy and Shri Feroze Varun Gandhi, Hon'ble Members of Parliament.

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9.	Uttar Pradesh	Meerut	273	28	10.3
10.	Uttarakhand	Dehradun	183	18	9.8
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12.	Madhya Pradesh	Indore	273	19	7.0
13.	Punjab	Ludhiana	273	14	5.1
14.	Punjab	Patiala	273	14	5.1
15.	Madhya Pradesh	Jabalpur	272	8	2.9
16.	Bihar	Gaya	273	8	2.9
17.	Madhya Pradesh	Ujjain	268	6	2.2
18.	Bihar	Muzzafarpur	273	6	2.2
19.	Uttar Pradesh	Noida	273	5	1.8
20.	Rajasthan	Jodhpur	251	3	1.2
21.	Punjab	Jalandhar	273	3	1.1
22.	Uttar Pradesh	Moradabad	273	2	0.7
23.	Rajasthan	Udaipur	270	1	0.4
24.	Rajasthan	Jaipur	273	1	0.4

25.	Andhra Pradesh	Rajmahendravaram	266	0	0.0
26.	Assam	Guwahati	273	0	0.0
27.	Bihar	Patna	273	0	0.0
28.	Delhi	Delhi	273	0	0.0
29.	Gujarat	Ahmedabad	273	0	0.0
30.	Haryana	Faridabad	273	0	0.0
31.	Himachal Pradesh	Baddi	269	0	0.0
32.	Jammu and Kashmir	Srinagar	241	0	0.0
33.	Karnataka	Bengaluru	273	0	0.0
34.	Karnataka	Davanagere	215	0	0.0
35.	Karnataka	Hubbali	232	0	0.0
36.	Karnataka	Kalaburgi	224	0	0.0
37.	Madhya Pradesh	Dewas	268	0	0.0
38.	Maharashtra	Aurangabad	272	0	0.0
39.	Maharashtra	Chandrapur	273	0	0.0
40.	Maharashtra	Nashik	262	0	0.0
41.	Maharashtra	Navi Mumbai	272	0	0.0
42.	Maharashtra	Solapur	236	0	0.0
43.	Maharashtra	Pune	273	0	0.0
44.	Maharashtra	Mumbai	273	0	0.0
45.	Nagaland	Kohima	263	0	0.0
46.	Odisha	Talcher	273	0	0.0
47.	Punjab	Khanna	273	0	0.0
48.	Punjab	Gobindagarh	262	0	0.0
49.	Rajasthan	Alwar	272	0	0.0
50.	Rajasthan	Kota	273	0	0.0
51.	Tamilnadu	Chennai	273	0	0.0
52.	Tamilnadu	Thoothukudi	268	0	0.0
53.	Telangana	Hyderabad	273	0	0.0
54.	Uttar Pradesh	Lucknow	273	0	0.0
55.	Uttar Pradesh	Prayagraj	273	0	0.0
56.	Uttar Pradesh	Agra	273	0	0.0
57.	Uttar Pradesh	Bareilly	72	0	0.0
58.	Uttar Pradesh	Gorakhpur	272	0	0.0
59.	Uttar Pradesh	Jhansi	236	0	0.0

60.	Uttar Pradesh	Kanpur	273	0	0.0
61.	Uttar Pradesh	Khurja	79	0	0.0
62.	West Bengal	Haldia	270	0	0.0
63.	West Bengal	Howrah	273	0	0.0
64.	West Bengal	Kolkata	273	0	0.0
