GOVERNMENT OF INDIA
MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE

LOK SABHA
UNSTARRED QUESTION NO. 2146
TO BE ANSWERED ON 09.12.2024

Ground Level Ozone

2146. SHRI G M HARISH BALAYOGI:

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

(a) whether the Government has identified Ground Level Ozone as a major pollutant in urban areas, if so, the details thereof;
(b) whether the Government has identified the various sources of Ground Level Ozone, if so, the details thereof, if not, the reasons therefor;
(c) whether the Government has undertaken any surveys regarding various health ailments caused by exposure to Ground Level Ozone, if so, the details thereof, if not, the reasons therefor;
(d) whether the Government has undertaken any steps to monitor Ground Level Ozone, if so, the details thereof, if not, the reasons therefor; and
(e) whether the Government has any schemes/initiatives to tackle and regulate Ground Level Ozone, if so, the details thereof, if not, the reasons therefor?

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

(a) to (e):

The ambient air quality standards for Ozone (O_3) has been notified by Central Pollution Control Board (CPCB) among one of the twelve (12) pollutants under National Ambient Air Quality Standard (NAAQS), 2009. The ambient air quality standards for Ozone (O_3) is prescribed as 100 $\mu g/m^3$ for 8-hourly monitored value and 180 $\mu g/m^3$ for 1-hourly monitored value for industrial, residential, rural and ecological sensitive area. As per the NAAQS, the method of measurement of Ozone (O_3) in ambient air is UV photometric, Chemiluminescence, and Chemical method.
Ozone is a secondary pollutant which is formed in the ground level through atmospheric reactions (Troposphere) in the presence of sunlight and responsible factors are high temperature and emissions of Oxides of Nitrogen (NO_x) & Volatile Organic Compounds (VOCs). Major sources for NO_x include vehicles, power plants and burning of fuel/waste and VOCs are emitted from vehicles, petrol pumps, use of solvents and burning of waste.
The septs taken to control the precursors of ozone, i.e. NOx and VOC emissions are as follow:

- The introduction of BS VI-compliant vehicles across the country since April, 2020 have reduced NOx emissions as compared to erstwhile BS IV-compliant vehicles, with 70-85%

reduction in the case of 2-wheelers, 25%-68% in the case of 4-wheelers, and 87% in the case of heavy-duty vehicles.

- Leapfrogging from BS-IV to BS-VI fuel standards in the country to reduce NO_x emissions of heavy vehicles.
- The government is also promoting electric mobility, resulting in zero vehicular emissions, under PM Electric Drive Revolution in Innovative Vehicle Enhancement (PM-E Drive).
- Industrial emission Standards for NOx and VOC have been revised / introduced for various sectors such as Man-made Fiber industry, Fertilizer Industry, Pharmaceutical industry, Paint industry etc.
- NOx emission standards have also been prescribed for coal/lignite-based thermal power plants, industrial boilers, furnaces, Cement Plant (without co-processing of wastes) and Standalone Clinker Grinding Plants.
- Vapour Recovery System (VRS) has been installed at all Delhi-NCR petrol pumps, in compliance with the orders of the Hon'ble NGT and Hon'ble Supreme Court. Installation of VRS minimizes the release of Benzene and other VOC emissions during petroleum refuelling and unloading operations.
- Introduction of cleaner / alternate fuels like gaseous fuel (CNG, LPG etc.), ethanol blending.
- Promotion of public transport and improvements in roads and building of more bridges to ease congestion on roads.
- Streamlining the issuance of Pollution Under Control (PUC) Certificate.
- Banning of burning of biomass and garbage.
- Implementation of waste management rules w.r.t solid waste, bio-medical waste, and hazardous wastes etc.
- Notification of stricter emission norms for Thermal power plants.

Also, Government has launched National Clean Air Programme (NCAP) in 2019 as a national level strategy to reduce air pollution levels across the country. CPCB has identified 130 million plus/non-attainment cities (cities exceeding NAAQS, consecutively for five years). City Specific Clean Air Action Plans have been prepared and rolled out for implementation in all these 130 non-attainment/million plus cities to improve the air quality. These city specific clean air action plans target city specific air polluting sources like Soil & Road Dust, Vehicles, Domestic Fuel, MSW Burning, Construction Material and Industries with short-term priority action as well as those to be implemented in a medium to longer time frame along with the responsible agencies which improves the ambient air quality. Under NCAP, annual action planning for approved city action plans need to be submitted by concerned Urban Local Bodies (ULBs), which comprise the following actions to control NOx emissions:

- Use of off-peak passenger travel time to move freight and restrict entry of heavy vehicles into cities during the day.
- Clean Fuel & Fuel Quality in vehicles
- Introduction of new electric buses (with proper infrastructure facilities such as charging stations) and CNG buses for public transport which will reduce plying of private vehicles on road and help to curb tail-pipe emissions.
- CNG infrastructure for auto gas supply in the city and transition of public transport vehicles to CNG mode.
- Charging infrastructure for E-vehicles
- Phase out old vehicles and introduce vehicle scrappage policy.
- Intensify monitoring of industries to reduce emission by the industries.

- Shifting of polluting industries.
- Conversion to CNG/PNG from pet coke / wood / coal / Furnace oil.
- Regular check and control of burning of municipal solid wastes.

Air pollution is one of the factors affecting respiratory ailments and associated diseases. Health is impacted by several factors, including food habits, occupational habits, socio- economic status, medical history, immunity, heredity, etc., of the individuals apart from the environment. CPCB has not conducted any surveys regarding various health ailments caused by exposure to Ground Level Ozone. However, the health effects of O_3 are:

- Inhaling O_3 triggers a variety of health problems including chest pain, coughing, nausea, throat irritation and congestion.
- O_3 exposure worsens bronchitis, heart disease, emphysema, asthma and reduces lung capacity.
- Repeated exposure to O_3 pollution may cause permanent damage to lungs.
- It makes people more sensitive to allergen.

The CPCB in association with State Pollution Control Boards (SPCBs), Pollution Control Committees (PCCs), and the National Environmental Engineering Research Institute (NEERI) monitors ozone and other pollutants under the National Air Quality Monitoring Programme (NAMP).

In order to control Ozone Depleting Substances (ODS), Ministry of Environment, Forest and Climate Change (MoEF&CC) has notified the Ozone Depleting Substances (Regulation and Control) Rules, 2000, that control the use, import, and export of ODSs in India.

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