Union Environment Minister visits CAQM's 'PAVAN-I3C' Integrated Command and Control Centre to review Air Pollution Mitigation Operations

PAVAN-I3C integrates 30+ Data Streams for Real-time Monitoring and Data-driven Compliance Management of Air Quality across Delhi-NCR

A Paradigm Shift from Reacting to Air Pollution to Anticipating and Acting on it in Real-time: Shri Bhupender Yadav

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Union Minister for Environment, Forest and Climate Change, Shri Bhupender Yadav, today visited the Commission for Air Quality Management's (CAQM) newly developed Integrated Command and Control Centre (I3C), named PAVAN (Platform for Air quality Vigilance and Analytics for NCR), in New Delhi. The Minister reviewed its technological framework and operational readiness. Developed as a single-window digital nerve centre, PAVAN-I3C integrates more than 30 APIs and data streams, including air quality, emissions, meteorological, satellite, camera, mobility, complaint and compliance data from multiple agencies. It also integrates data from 111 Continuous Ambient Air Quality Monitoring Stations (CAAQMS) operational in Delhi-NCR, over 2,300 industries, more than 3,200 active construction sites and traffic congestion hotspots.



Addressing the media during the review, Union Minister Shri Bhupender Yadav emphasized that the first priority in tackling regional air pollution is ensuring precise, hyper-local data and absolute transparency. He remarked that the launch of the PAVAN-I3C marks a definitive turning point by eliminating operational lag, dismantling data silos and enabling State Pollution Control Boards (SPCBs) to work under a single, verified source of information to hold polluters accountable in minutes. Appreciating the effort, Shri Yadav said, “Clean air cannot be secured by any one agency or any one State acting alone. The I3C brings every data stream that matters onto a single screen, so that a farm fire, a polluting stack or an uncovered construction site is seen, flagged and acted upon in real time. This is a paradigm shift from reacting to pollution to anticipating it, and every implementing agency must now act in real-time on these alerts without delay.” The Minister added that the non-conforming industries, non-compliant polluting sources and traffic congestion hotspots would be swiftly acted upon due to the PAVAN I3C platform. In this background, he further said that construction and demolition (C&D) activities across the NCR region would be halted from 5th to 20th November in a bid to control pollution.



Shri Yadav informed that operating on the principle of ***'Detect, Analyse, Act'*****,** the PAVAN-I3C brings together data from multiple agencies on a common platform for real-time and historical analysis of pollution levels, identification of pollution sources, assessment of trends and effectiveness of measures, and tracking of **field-level compliance** against prescribed standards and action plans. It marks a shift towards comprehensive, real-time air quality monitoring and data-driven cross-border enforcement. A defining capability of PAVAN-I3C is its alert-based compliance management. Shri Yadav highlighted that deviations from prescribed norms, Statutory Directions or agreed compliance requirements trigger alerts and escalation to the concerned agency for necessary action. This shifts CAQM from manual, agency-reported monitoring to proactive, digital and **data-driven compliance management**, enabling timely intervention and regulatory action. By integrating air quality data from multiple agencies, the I3C would **strengthen inter-agency coordination**, accelerate enforcement, facilitate **rapid resolution of public grievances** and enable immediate response to localized pollution spikes during critical seasonal periods ensuring a citizen-centric approach, he added.



During the visit, Shri Yadav reviewed key monitoring modules covering **air quality and pollutant concentrations** from CAAQMS installed by CPCB, IMD and SPCBs; **industrial emissions** data on PM, SO_2, NOx and CO from Online Continuous Emission Monitoring Systems (OCEMS); **satellite-based crop residue burning** data from IARI, ISRO and FIRMS, including comparison with fire events over the previous six years; live camera feeds and PM sensors at **Construction and Demolition** sites; **weather**, rainfall, wind speed and direction and humidity data; live feeds from major **landfill sites** including Okhla, Bhalswa, Ghazipur, Greater Noida and Bhandwari; **vehicular data** through VAHAN and traffic congestion hotspots; **citizen complaints** through the Green Delhi App and SAMEER App; live tracking of Mechanical Road Sweeping Machines **(MRSMs)**; and **compliance by brick kilns** in Haryana and Punjab with prescribed biomass-fuel requirements. The **State Action Plan monitoring module** provides a consolidated view of pending actions at State, sector and action-point levels for Delhi, Haryana, Punjab, Rajasthan and Uttar Pradesh, covering air quality monitoring, crop residue management, vehicular pollution, C&D activities, road dust management, municipal solid waste management, industrial pollution, DG sets and green crematoria.



Dignitaries present on the occasion included Chairperson (CAQM), Shri Rajesh Verma; Chairperson (CPCB) & Additional Secretary (MoEFCC), Dr. Amandeep Garg, besides other senior officials from the Ministry, CAQM and CPCB.

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