

GOVERNMENT OF INDIA
MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE

RAJYA SABHA
UNSTARRED QUESTION NO. 2129
TO BE ANSWERED ON 18.12.2025

Health advisory for air pollution

2129. SHRI BRIJ LAL:
SMT. KIRAN CHOUDHRY:
SHRI MITHLESH KUMAR:
SMT. RAMILABEN BECHARBHAI BARA:
SHRI MADAN RATHORE:
SHRI AMAR PAL MAURYA:
SHRI KANAD PURKAYASTHA:
SHRI BABURAM NISHAD:
SHRI ADITYA PRASAD:

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

- (a) the detailed response of Government to the petitions filed in Supreme Court on air pollution, health emergency and national health emergency protocols and the steps being taken to mitigate health risks arising from deteriorating air quality across major cities;
- (b) whether Government proposes to issue any national-level health advisory or emergency protocol in coordination with the Ministry of Health and Family Welfare; and
- (c) if so, the details thereof and if not, the reasons therefor?

ANSWER

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

(a) to (c): The Hon'ble Supreme Court vide W.P. No. 13029/1985 in M C Mehta vs Union of India & Ors review the matters related to Air Pollution in Delhi NCR and has passed directions from time to time, to concerned stakeholders. In this regard, responses have been filed before the Hon'ble Court in respect of directions pertaining to this Ministry. As directed by Hon'ble Supreme Court, Long term and Short term Action Plan has been prepared by MoEF&CC based on inputs received from State Governments of Delhi NCR. The details of the said Action Plans are enclosed as **Annexure**.

To address air pollution in Delhi-NCR, Government has established the Commission for Air Quality Management (CAQM) under the Commission for Air Quality Management in NCR and Adjoining Areas Act, 2021 for better coordination, research, identification and resolution of problems of air pollution in Delhi- NCR and adjoining areas. CAQM has been provided powers

under the Act to take measures and issue directions to the various agencies in the National Capital Region for protecting and improving air quality. So far, CAQM has issued 95 statutory Directions and 17 Advisories to concerned stakeholders for control of air pollution in Delhi NCR.

CAQM has come up with much stringent emission norms for various polluting activities in NCR, as compared to the national standards. These directions are rigorously monitored for implementation through periodic progress reviews, issuing subsequent orders and directions from time to time.

The Government has regularly reviewed and monitored the actions taken to address air pollution including stubble burning related issues in Delhi-NCR and adjoining areas. Some of the recent key meetings are as below:

- i. Regular review meetings have been held on 08.08.2025, 16.09.2025, 10.10.2025, 11.11.2025 and 03.12.2025 under the chairmanship of the Hon'ble Minister for Environment, Forest and Climate Change, on the issues relating to air pollution control in Delhi-NCR, to deliberate upon the undertaking of air pollution abatement measures and strategies for further strengthening air quality management across the region;
- ii. Minister level Inter-Ministerial meeting was held on 07.10.2025 under the Co-chairmanship of Hon'ble Minister for Environment, Forest and Climate Change and Hon'ble Minister for Agriculture & Farmers' Welfare on the issues of management of Crop Residue Burning.

A centralised air quality portal and mobile app-SAMEER are functional for tracking and dissemination of near real time air quality data and hourly Air Quality Index to the public. CPCB issues a daily bulletin at 04:00 PM comprising AQI of various cities in the country including Delhi-NCR. SAMEER app also serves as a grievance redressal mechanism which allows the citizens to report pollution related complaints for quick resolution by the concerned agencies.

Graded Response Action Plan (GRAP) has been prepared by CAQM, which provides set of emergency response actions, depending on severity of air pollution levels, and implemented by identified agencies for minimizing air pollution, a situation that generally persists in the Delhi-NCR during the peak winter months.

Based on the dynamic model and weather forecast provided by IMD (Indian Meteorological Department) / IITM (Indian Institute of Tropical Meteorology) on a day-to-day basis, actions under Stages I, II, III and IV of the GRAP are invoked in advance in anticipation of the AQI of Delhi reaching to the projected levels of that stage based on the overall meteorological conditions and anthropogenic activities.

CAQM has recently conducted comprehensive review of the contours of the existing GRAP and made the actions more stringent under the various stages of the GRAP.

Further, National Clean Air Programme (NCAP) has been launched by Ministry of Environment, Forest and Climate Change (MoEFCC) in January 2019 to improve air quality in 130 cities (non-attainment cities and Million Plus Cities) in 24 States/UTs by engaging all stakeholders.

City Specific Clean Air Action Plans have been prepared by all 130 cities under NCAP to implement air quality improvement measures in respective cities. These plans target air pollution sources like soil & road dust, vehicular emissions, waste burning, Construction & Demolition activities and industrial pollution.

Out of 130 cities under NCAP, 48 Million-Plus Cities/ Urban Agglomerations are funded under XVth Finance Commission Million Plus City Challenge Fund as an air quality performance grant, and the remaining 82 cities are funded under the Control of Pollution Scheme of MoEFCC. Accordingly, Rs 13,415Crore has been released under NCAP for 130 Cities as a critical gap funding to implement city action plans.

In addition to this, NCAP emphasizes mobilization of resources through the convergence of resources from various Central Government schemes such as Swachh Bharat Mission (Urban), AMRUT, Smart City Mission, PM e-Bus Sewa, PM E-DRIVE, SATAT, and Nagar Van Yojana, as well as resources from State Govts./ UT administration and agencies like Municipal Corporations and Urban Development authorities. Various Ministries/Departments of Govt. of India provide funding under their Schemes/ Programmes as per their budgets.

PRANA- 'Portal for Regulation of Air Pollution in Non-Attainment Cities' has been operationalised for managing and monitoring the progress of implementation of activities implemented by 130 targeted cities under NCAP.

Ministry of Health and Family Welfare has issued Health Advisory on Air Pollution to all States /UTs to support various actions for awareness generation and health system response. The details of the said advisory is available in public domain in the web site of Ministry of Health and Family Welfare. Further, States/UTs also issue public health advisory on air pollution related health matters every year and create awareness on the Do's and Don'ts to minimise, protect and prevent on the health impacts related to air pollution.

Status Note on Short term and Long term measures for control of air pollution in Delhi-NCR

MoEF&CC held a meeting on 18.11.2025 with States/UTs of Delhi-NCR, CAQM and CPCB to review the short term and long term measures to be undertaken by various agencies for control of air pollution in compliance of the directions of Hon'ble Supreme Court given on 17.11.2025.

States/UTs have furnished the short term and long term activities to be undertaken in Delhi- NCR. Accordingly, MoEF&CC has prepared the following short term and long term measures to be undertaken in Delhi-NCR for control of air pollution along with State/UT specific Short term & long term measures to be implemented for control of Air Pollution.

(1) Long term and short term measures applicable to all States/UTs

Short- term measures

Dust and Road Dust Mitigation measures

- i. CAQM to issue directions to Municipal Commissioners of Delhi-NCR to identify category of roads for Mechanized Road Sweeping Machines (MRSMs) and on that basis norm to be fixed for minimum number of MRS to be deployed in each category of road. Deployment of adequate mechanical road sweepers, water sprinklers and anti-smog guns.
- ii. Installation of mist-spray systems on electric poles in and around identified pollution hotspots.
- iii. MRSMs machines will be tagged and monitored through GPS. The route and timing of operation of MRSMs will be kept in the public domain for transparency.

Construction and Demolition (C&D) Management

- i. Mandatory registration and monitoring of all construction and demolition projects above 500 sq. m on the SPCB portal.
- ii. Inclusion of standardized dust mitigation clauses in all sanctioned building plans and mandatory display of SPCB registration certificates at project sites.
- iii. Anti-smog guns and wetting of surface along with covering of raw material to be made mandatory.
- iv. Deterrent closure, prosecution and imposition of environmental compensation against the violating projects.
- v. No construction activity shall be allowed in GRAP-3 and 4 as per CAQM directions.
- vi. Intensify actions through strict monitoring for prevention of stubble / open burning, emission from C&D activities.

Vehicular Pollution Control

- i. Strict enforcement of Pollution Under Control (PUC) certificate. Continuous and effective enforcement/ action by Transport Department and Traffic Police against vehicles operating without valid PUC certificates and emitting visible emissions.

DG Set and Backup Power Emissions

- i. Enforcement of restrictions on non-compliant DG sets and permitting only CAQM-compliant, cleaner-fuel/retrofitted DG sets.

Industrial Pollution and Enforcement

- i. Intensifying visits/inspections of polluting units in notified industrial areas and closure of non-compliant units.
- ii. Enforcement of the approved fuel list, including ban on coal.

Governance, Enforcement & GRAP Implementation

- i. Enforcement of actions under various stages of Graded Response Action Plan.
- ii. Action by Enforcement teams for dust control, Open biomass burning Control, Industrial Pollution Control and Vehicular Pollution Control.
- iii. Daily monitoring and compliance reporting during GRAP stages.
- iv. Public Grievance Platforms such as Social Media (X), Sameer App for registering public complaints and prompt resolution of complaints to be done by State Authorities.
- v. Enhancement of Teams to be deployed by the States/UTs for random supervision and monitoring.

Crop Residue Management

- i. Implementation of Annual Action Plan for complete elimination of paddy stubble burning.
- ii. In-situ management:
 - Ensure mandatory utilization records and daily machine logs for all CHCs.
 - Ensure strict compliance with after-sales service by empanelled firms for CRM machinery.
 - Deploy village-level machine calendars to maximize utilisation during the short sowing window.
 - Provide incentives to already established CHCs to strengthen the CHCs.
 - Facilitate MoUs between FPOs/cooperatives and industries for assured straw procurement before harvesting season.
 - Increase area under short duration varieties.
- iii. Arrange farmers visit (esp. farmers from hot spot blocks/villages) to demonstrations fields for seeing the in-situ and ex-situ management strategies and the results.
- iv. Run 8-week radio and TV campaigns statewide in peak harvest months.
- v. Engage district administration, KVKs, Agriculture Department, Panchayats, and NGOs in mass awareness.
- vi. Form “Zero-Burning Village Teams” involving students, youth clubs, and CHCs.
- vii. Promote on-ground demonstrations of CRM machinery.
- viii. Recognize and award best CHCs and high-utilization operators annually.

Long-term measures

Dust and Road Dust Mitigation measures

- i. Municipal Commissioners of ULBs of Delhi-NCR shall prepare a plan for road-side plantation.
- ii. Implement urban road redevelopment plans as per CAQM standard framework.
- iii. Construction of dust free roads and pot hole free roads
- iv. Widening of roads and construction of footpaths along main roads are to be undertaken by road maintaining agencies.

- v. Expand mechanised sweeping by including less than 60 feet roads.
- vi. Carry out a performance assessment study of Anti-Smog Gun (ASG) being used.
- vii. Install fixed anti-smog systems at high-traffic hotspots.
- viii. Greening of flyovers, roundabouts, and road medians with dust-trapping shrubs.
- ix. Identification of traffic congestion points and addressing / de-congesting the same

Construction and Demolition (C&D) Management

- i. Municipal Commissioners of all Districts to prepare comprehensive plan for requirement and identification of Construction & Demolition (C&D) waste collection & recycling centers based on population to be served, plan for increasing the number of existing centers, requirement of manpower based on the capacity of these centers.
- ii. Expand C&D waste processing capacity to 100%.
- iii. Achievement of full off-take of C&D recycled products.
- iv. In order to resolve the issue of pricing of recycled C&D products, schedule of rates developed by CPWD for certain recycled products will be provided by MoHUA to Delhi-NCR States so that a rate is also incorporated in concerned State's schedule of rates.

Vehicular Pollution Control

- i. Transition to EV-based public transport, including buses, feeder services, and last-mile mobility. In order to promote public transport and e-mobility, fleet of e-buses/e-vehicles are to be increased.
- ii. Complete Phase out of diesel autos from the Delhi-NCR area.
- iii. Strengthening of EV charging infrastructure.
- iv. Establish solar-powered charging hubs at depots and parking lots.
- v. Deploy AI-based Integrated Traffic Management System (ITMS) with ANPR and automated challans.
- vi. Implement city-wide parking management with smart pricing.
- vii. Installation of ANPR cameras and public display boards at border entry points for enforcement against non-compliant vehicles.
- viii. Expansion of public transport including Metro network on mission mode
- ix. Steps to be initiated for the transition of motor vehicles aggregators, delivery service providers and e-commerce entities to cleaner mobility (CNG/Electric vehicles).
- x. Adequate number of Registered Vehicles Scrapping Facilities (RVSFs) to be established to fast-track scrapping of End of Life (EoL) vehicles.

Industrial Pollution and Enforcement

- i. The report of the study for revised emissions norms for three sectors, i.e. textile, food processing and metal by IIT Kanpur has been received. CPCB to constitute an expert committee to study the report and finalize the action points in consultation with CAQM.
- ii. CPCB to review functionality of the OCEMS portal to ensure that all its features such as SMS alert system, emission data visualization are working properly.
- iii. Installation of OCEMS in the balance identified 2254 industries shall be expedited.
- iv. Installation of Air Pollution Control Devices (APCDs) in the identified air polluting industries in Delhi NCR needs to be expedited.
- v. The PNG supply in all the industrial areas of NCR need to be ensured.
- vi. Stringent emissions norms for the industries in the NCR area as per directions of CAQM

Crop Residue Management

In-situ management:

- i. Crop Diversification to be promoted to reduce paddy cultivation.
- ii. Target to achieve 'Nil' active fire locations.
- iii. Timely analysis of CRM machines gap at district level and to arrange the same well before harvesting season.
- iv. Ministry of Agriculture & Farmers Welfare (MoA&FW) to review the operational status of CRM machines provided to the Custom Hiring Centers (CHCs) from 01st December 2025 onwards continuously for the entire year. A comprehensive plan may also be prepared for the entire duration, i.e. end of current harvesting season and start of next harvesting season. Responsibility may be fixed on Deputy Commissioners and even up to Block/Tehsil level. Skill Development and provision for skill training for operation of CRM machines to be provided.
- v. CRM machines are to be GPS tracked and monitored
- vi. Teams consisting of officials from Agriculture Department and Revenue Department in each district shall take prompt action in case farm fires.

Ex-situ management:

- i. More Compressed Biogas Plants based on paddy straw are to be established.
- ii. More pellets manufacturing plants are to be established.
- iii. Co-firing of biomass in the Thermal Power plants (upto 5%) to be increased.

Solid Waste Management

- i. CAQM to review Municipal Solid Waste (MSW) management in NCR cities and progress in liquidation of legacy waste. Monthly targets need to be fixed and progress to be presented by CAQM in the next review meeting.
- ii. Waste to Energy Plants, MSW processing and C&D waste processing facilities are to be established to achieve 100% saturation.
- iii. Setup the supply chain for timely pickup of bales from the field and utilization of the same.
- iv. Implement a multi-year Behavioural Change Communication (BCC) strategy to eliminate stubble burning culture.

Green Area Development

- i. In order to achieve the tree plantation target of One Crore trees during 2025-26. All NCR States need to identify the degraded forest land in the Delhi-NCR and start preparation of plant nurseries.
- ii. Every district of NCR to prepare green area management plan.
- iii. Use treated STP water for irrigation of green belts.

IEC, Governance & Policy

- i. Institutionalize CRM Control Rooms in all districts with monthly KPI-based reviews.
- ii. Make stubble management a permanent curriculum component in DoA&FW, KVK and PAU training programs.
- iii. Introduce school-level campaigns.

(2) Long term and short term measures applicable specific to Govt. of NCT Delhi:

Short term measures:

- i. Regular lifting of C&D waste from the listed 132 sites listed by the 3 Urban Local Bodies (MCD: 106, NDMC: 25 and DCB: 1) **(Proposed)**.
- ii. Providing electric heaters to RWAs for security guards to prevent open biomass burning **(Proposed)**.
- iii. Addition of 6 new air quality monitoring locations **(Proposed)**.
- iv. 40 additional trips from 19.10.2025 and 20 more trips from 11.11.2025 increased by DMRC.
- v. Closed monitoring of Landfills to reduce incidences of fires and pollution.
- vi. Pilot for artificial rain as an air pollution mitigation strategy in collaboration with IIT Kanpur.
- vii. Intensive deployment of mechanical road sweepers (76), water sprinklers (271), anti-smog guns (386).
- viii. Delhi Traffic Police to submit the action plan and its implementation status for the resolution of 62 identified traffic congestion points in Delhi. Similarly, identification of Traffic hotspots and their resolution shall be taken up by 5 high vehicle density Districts of Gurugram, Faridabad, Ghaziabad, Gautam Budh Nagar and Sonipat by respective State Governments **(Proposed)**.

Long term measures (Proposed):

- i. Complete liquidation of 149 lakh MT legacy municipal solid waste by 2027.
- ii. Expand waste-to-energy capacity for 100% waste treatment.
- iii. 100% door-to-door waste collection and segregation.
- iv. Increase annual plantation to over 75 lakh trees using Miyawaki forests.

(3) Long term and short term measures applicable specific to Uttar Pradesh:

Short term measures:

- i. 18 Dust Control and Management Cells constituted in 08 districts of NCR-UP to control dust from road and open areas.
- ii. Average 990.38 km of road length is being swept mechanically daily by 50 MRSMs, 415 Water Sprinklers and 235 Anti-Smog Guns deployed for abatement of air pollution.
- iii. 34 teams have been constituted by UPPCB for regular monitoring of air pollution sources and enforcement of GRAP direction issued by CAQM.
- iv. 1003 Construction and Demolition projects have been registered on Dust App portal of UPPCB and the same are being monitored remotely as well as by means of physical inspection for ensuring compliance with C&D waste management rules.
- v. 2531 air polluting industries have been identified in NCR-UP which are regularly being monitored by the teams of UPPCB.
- vi. Total 277 Air Polluting Red Category (Large and Medium Scale) units have been identified out of which 206 units have already installed Online Continuous Emission Monitoring Systems (OCEMS). State Board has issued directions to the remaining units to install OCEMS by 31.12.2025.

- vii. 18 Continuous Ambient Air Quality Monitoring Stations (CAAQMS) have been installed in NCR-UP. Regular calibration and operation of all CAAQMS is being ensured by the State Board.
- viii. For Diversion and restriction of entry of prohibited vehicles in Delhi-NCR, 25 check points have been made functional in neighbouring NCR-UP districts.

Long term measures:

To strengthen the ambient air quality monitoring network, 10 additional Continuous Ambient Air Quality Monitoring Stations (CAAQMS) are being installed in NCR-UP **(Proposed)**.

(4) Long term and short term measures applicable specific to Rajasthan:

Short term measures:

- i. Strengthening of Air Quality Monitoring Network :-
 - Existing- 4 CAAQMS, 2 mobile AAQMS & 9 manual monitoring stations.
 - 4 CAAQMS & 5 manual monitoring stations **(Proposed)**.
- ii. During Oct 24 to Sept 25, total 7908 inspections carried, 140 units found non-compliant, 54 closure directions issued against gross violators and EC imposed against 38 units, 217 non-complying DG sets sealed. Besides, during GRAP period from 14.10.2025 to 16.11.2025, 1164 inspections of industrial units/DG sets/ Hotels/Mining Leases/ Stone crushers were conducted and closure directions issued against 2 non-complying industrial units and 10 non complying DG sets sealed.
- iii. 83 inspections of illegal dump sites conducted and action taken against 15 cases. 17 cases of open burning incidents reported and action taken against defaulters.
- iv. 5361 inspections of C&D sites with area 500 m² and above and 8593 inspections for area < 500 square meters have been conducted by the concerned departments during the October 2024 to September 2025. Closure directions issued against 26 non complaint sites. Besides, during GRAP period from 14.10.2025 to 16.11.2025, 2189 inspections of C&D sites were conducted and closure directions issued against 2 non-complying C&D sites and EC/penalty imposed on 22 C&D sites.
- v. Intensify frequency of water sprinkling (40 tankers), road sweeping (10 Mechanical Road Sweeping Machines), and use of anti-smog guns (18 ASG) for abatement of road dust **(Proposed)**.
- vi. Intensification of registrations and monitoring of C&D sites having plot area equal and more than 500 square meter on the State Govt. (RAJCONESS) portal. Presently, 198 C&D sites are registered on RAJCONESS **(Proposed)**.
- vii. Intensify actions for abating air pollution from sources of vehicles and transport. Actions have been taken against 17499 vehicles for invalid PUC, 6147 for visibly polluting/overloaded vehicles, 37,000 for parking violation during October 2024 to September 2025 by the Department of Transport & Traffic Police. Besides, during GRAP period from 14.10.2025 to 16.11.2025, actions have been taken against 2613 vehicles for invalid PUC, 193 for visibly polluting/overloaded vehicles.

Long term measures:

- i. Redevelopment of 47.45 KM Road length in Bhiwadi & Neemrana as per the standard framework developed by the CAQM **(Proposed)**.

- ii. PNG supply available in all industrial areas of Bhiwadi and 05 industrial areas of Alwar (Ghiloth, Neemrana, Shjahapur, Behror , Sotanala) .
- iii. Target for PNG Supply in MIA Alwar by the end of June, 2026. The work of PNG pipeline in the Brij Industrial area, Bharatpur is being carried out by GAIL **(Proposed)**.
- iv. Remediation of remaining 29797 cubic meter Legacy waste at Dumpsite of Bharatpur to be completed **(Proposed)**.
- v. Solid Waste processing plant (Composting) in Alwar: 156 TPD operational. Presently, one MRF of 10 TPD operational. Bhiwadi: Proposed (Capacity 56 TPD Under construction).Presently, one MRF of 10 TPD operational. Bharatpur: Proposed solid waste processing plant 135.4 TPD, work is in the advance stage. Presently, one MRF of 5 TPD capacity is operational **(Proposed)**.
- vi. C& D processing plant of 50 TPD capacity is under construction at Alwar. Expected completion by March, 2026 **(Proposed)**.
- vii. Action for phasing out remaining 995 diesel Auto rickshaw in NCR by the stipulated time frame of 31.12.2026 **(Proposed)**

(5) Long term and short term measures applicable specific to Haryana:

Short term measures:

- i. More than 10000 nodal officers tagged with the group of 50/100 farmers for which they are directly responsible.
- ii. FIR, environmental compensation and red entries are being made against the defaulting farmers.
- iii. Incentives of Rs.1200 per acre for not engaged in stubble burning.
- iv. Actions such as suspension, show cause, against the nodal officers in whose area AFL's are reported.
- v. Remote monitoring through continuous emission monitoring devices installed in more than 900 industries.
- vi. As per CAQM directions, the diesel autos are banned in the NCR districts of Faridabad and Gurugram w.e.f. 31.12.2024 and directions regarding not to give fuel to any diesel auto at the petrol pumps has been issued by Transport department.
- vii. As per direction no. 70 of CAQM, the registration of new diesel autos banned w.e.f. 01.01.2023.
- viii. Challans issued for invalid PUC certificates during January to October, 2025 (325989 numbers of challan issued during this period).
- ix. During the year 2025 (till October, 2025) 229 nos. visibly polluting vehicles in Gurugram and 56 nos. visibly polluting vehicles in Faridabad have been challaned.
- x. During the year 2025 (till October, 2025) 229 nos. visibly polluting vehicles in Gurugram and 56 nos. visibly polluting vehicles in Faridabad have been challaned.
- xi. 22 numbers DCMCs cells of road owning agencies has been constituted through which the progress of greening of central verges/paving of road sides/deployment of water sprinklers/MRSMs/ Anti smog guns/dust collectors are being monitored.
- xii. An action plan has been prepared and submitted to CAQM for construction of dust free roads. Out of 603 Km target for the year 2025-26, 70.18 Km has been completed and rest will be completed by 31st March, 2026.
- xiii. A State-level Project Monitoring Agency (PMA) for coordinated monitoring and reporting is under consideration at the Directorate of Urban Local Bodies, Haryana.

Long term measures:

- i. Increase the ambit of remote monitoring of industries through CEMS. Already directions issued to more than 1100 industries to install the CEMS.
- ii. Portal will be created wherein, web link will be created for each industries having stack emissions for remote monitoring of smoke emitting from the industries
- iii. State Government collaborated with World Bank and created Haryana Clean Air Project for Sustainable Development with a corpus of Rs. 3600 Crores for a significant improvement in the air quality over the next 05 years. The major interventions are as under:
 - A total of 1000 industries to be incentivized to purchase "new" boilers running on PNG/CNG/gaseous fuels.
 - 1,000 DG sets to be incentivized to run on hybrid/dual fuel mode/RECD.
 - 500 e-buses will be procured to switch to clean transport,
 - Further diesel autos will be phased out and 50,000 E-Autos will be incentivized to switch clean transport,
 - Robust monitoring infrastructure and also command control center will be established in the State.
 - 500 KMs Dust free road will be constructed to reduce the road dust emissions and as a pilot which can be extra polated for rest of the urban roads,
 - 02 numbers of common boilers will be setup in the industrial clusters,
 - 02 Numbers of Tunnel kilns will be setup on pilot basis to reduce the brick kiln emissions and which will be extra polated on success.
 - 10 numbers CAAQMs stations with real time source apportionment capability will be installed.
 - 01 CAAQM mobile van with real time source apportionment capability will be provided.

(6) Long term and short term measures applicable specific to Punjab:**Measures implemented:**

The State of Punjab has continued to make significant strides in the in situ and ex-situ management of paddy straw during the year 2025, building upon the initiatives undertaken in 2024 and lessons learnt in previous years.

- i. In situ Management
 - Large-scale distribution of Crop Residue Management (CRM) machines and establishment of custom hiring centres aid small and marginal farmers.
 - 1,48,000 CRM Machinery has been Provided from 2018-19 till date.
 - During current year 2025-26 special focus was given on promoting custom hiring centres and in the annual action plan a target of 1500 custom hiring centres was fixed for the year 2025-26 in comparison to target of only 500 CHCs in 2024.
 - 22 paddy supply chain centres have been established in the state to develop/strengthen supply chain of paddy.
 - Mapping of entire Machinery has been done.
 - Unnat Kissan App 2.0 launched in 2025 which facilitates:-
 - Mapping of CRM machines.
 - Real-time booking by farmers.

- Daily reporting of machine utilization by officers.
- Single platform for machine rental.
- In-situ management in the state of paddy straw has steadily increased from 6.45 million tonnes in 2020-21 to an estimated 11.4 million tonnes in 2025.

Sr. No.	Strategy	Paddy Straw Utilization (million tonne)				
		2020-21	2021-22	2022-23	2024	2025 (till date)
1	in-Situ management	6.45	8.13	9.44	12.7	11.4

- Taking lessons from previous years, Custom Hiring Centres (CHCs) in 2025 established through rural entrepreneurs, panchayats, cooperatives & FPOs to ensure easy access of machinery to small/ marginal farmers.
- Efforts strengthened through IEC campaigns, capacity building, and enforcement measures against stubble burning.

ii. Reducing Generation of Paddy Straw and Crop Diversification

- Promotion of short & medium duration paddy varieties to reduce residue. Out of total area under paddy this year, **around 80% was under short to medium duration varieties of paddy this year 2025 which is a significant jump from last years.**
- Use of short-duration paddy varieties (PR-126) is promoted to reduce straw load and provide more time for land preparation.
- Digital interventions include mobile apps for machine booking and monitoring (Unnat Kisan).
- An incentive of Rs. 1500/ acre for sowing of paddy through Direct Seeding method. An area of 2.93 Lakh acres has been sown using DSR method.
- In addition to above, Crop diversification efforts (maize, cotton) are increasing with incentives to reduce paddy straw generation.
 - Incentive of Rs 17500/ha to farmers for diversifying to maize.
 - Area under maize increased to 1.06 lakh ha in 2025.
 - Area under cotton increased to 1.19 lakh ha in 2025.

iii. Ex Situ Management

- Ex-situ management (including industrial boilers, pelletization, CBG plants, biomass power) has increased from **0.92 million tonnes in 2020-21** to an estimated 7.06 million tonnes in 2025

Sr. No.	Strategy	Paddy Straw Utilization (million tonne)				
		2020-21	2021-22	2022-23	2024	2025 (Estimated)
1	Ex-Situ management	0.92	1.217	1.514	5.96	7.06

- Industrial **boilers** straw consumption grew significantly from **8.8 lakh tonnes in 2022** to a projected **41 lakh tonnes in 2025.**

S.No.	Year	Quantity of paddy straw used as fuel in industrial boilers (in lac tonnes)
1	2022	8.80
2	2023	20.70
3	2024	35.00
4	2025 (estimated)	41.00

- Pelletization plants expanded from 18 in 2024 to 37 operational plants in 2025, with 34 more under setup, targeting 17 lakh tonnes annual consumption. It is noteworthy to mention that there was no palletization plant in the state in 2020
- Compressed Biogas (CBG) plants expanded from 4 operational in 2024 to 6 in 2025, with 42 more proposed, scaling capacity considerably.
- Biomass power plants increased utilization from 10 lakh tonnes in 2024 to 11.7 lakh tonnes in 2025.
- Thermal power plants increased usage from 1.85 lakh tonnes in 2024 to over 5.16 lakh tonnes upto Oct 2025 this year, with further expected upscaling to nearly 12 Lakh tonnes by March 2026.

iv. Enforcement measures

- In the current year 10500 Field Functionaries have been appointed to monitor and contain the stubble fire incidents in comparison to 9500 officers deployed in last year 2024.
 - Prali Protection Force (PPF) of 1700 personal has been constituted and deputed at Block level over and above the nodal/cluster officers for effective enforcements of measures to prevent and control stubble burning.
 - Micro management of stubble is being carried out at village level.
 - Hotspot areas have been identified.
 - Extra police force has been deployed in hotspot areas to render special assistance to the nodal and cluster officers.
 - District specific action plans have been prepared and are being implemented.
 - Regular monthly review at the Level Chief Secretary Punjab with DCs/SSPs
- As a result the Stubble Fire incidents have shown a considerable decline this year in comparison to last years

Year	2023	2024	2025
Period	15th of September to 17 th of November		
Cumulative active fire events	33082	8404	5003

Short term measures (Proposed):

- Provide 15000 additional CRM units in 2026, in addition to the 1.18 lakh machines already provided on subsidy (total 1.48 lakh provided less 40,000 which have completed their operational life).
- Especial focus will be made on hotspot districts/ villages to ensure sufficient number of CRM machines.

- iii. Achieve 100% digital mapping of CRM machines on Unnat Kisan 2.0 by April 2026 to track utilization.
- iv. Establish 500 additional Custom Hiring Centres (CHCs) in 2026 with rent-free access for all small & marginal farmers.
- v. Increase ex-situ utilization to 7.5 million tonnes in 2026.
- vi. Operationalize at least 8-10 new CBG plants by 2026 (existing: 6; pipeline: 42).
- vii. Achieve about 42-43 lakh tonnes utilization through industrial boilers in 2026. Ensure that maximum industries obtain benefit of capital subsidy scheme of the Government of Punjab.
- viii. Expand pellet manufacturing to 20-22 lakh tonnes annual capacity.
- ix. Add 50-60 decentralized storage sheds and bale aggregation points.
- x. Ensure that the Thermal Power plants achieve 7% Blending capacity utilization of coal with paddy straw pellets.
- xi. Take steps for the vacation of stay granted to Brick kilns by the Hon'ble Punjab and Haryana High Court with regard to directions issued by Government of Punjab to utilize 20% paddy straw pellets as fuel in brick kilns. The State will also notify progressive utilization of 20%, 30%, 40% and 50% paddy straw pellets as fuel in the brick kilns in 2025, 2026, 2027 and 2028 as per CAQM directions.
- xii. Conduct 4,000+ awareness camps across paddy-growing villages during the 2026 season.
- xiii. Install 3,000 mandi hoardings highlighting residue management practices and penalties for burning
- xiv. Deploy 12,000+ field staff for monitoring and hotspot verification in 2026. Additionally to increase workforce to 3000 from existing 1700 in Parali Protection Force.
- xv. Ensure 100% satellite-linked hotspot verification with PRSC (Punjab Remote Sensing Centre).

Long term measures (Proposed):

The long-term plan aims to structurally transform Punjab's stubble management ecosystem through diversified agriculture, expanded industrial utilization, and permanent supply-chain infrastructure and to ensure fulfilment of target to achieve **zero stubble burning by 2028**.

A. In-situ Management (Structural, 3–5 Years)

- i. Reach sustained availability of CRM machines by 2030 w.r.t. area under paddy.
- ii. Engage with research institutes to develop/ Introduce **next-generation low-cost CRM machinery** suited for small/fragmented fields.
- iii. Promote **crop diversification** and reduce acreage under paddy by 7 lakh hectares.

B. Ex-situ Management (Structural, 3–5 Years)

The Government of Punjab will create the following infrastructure for maximum usage of paddy straw during the next 3 to 5 years.

- i. Develop biomass industrial parks with common boilers (1–2 lakh TPA demand).
- ii. Maximum CBG plants will be made operational for the usage of 10-12 Lakh Ton of paddy straw within 3-5 years.
- iii. Pellet production capacity will be increased for the usage of 25-30 lakh ton of paddy straw in the thermal plants, Brick kilns and industries within 3-5 years.
- iv. Utilization of about 6 Million Ton of paddy straw in industrial boilers will be achieved within next 3-5 years
- v. Covered storage infrastructure for permanent bale storage depots will be increased to 250-300.
- vi. Create a long-term farmer–industry contracts to stabilize markets.
