GENERAL STUDIES II

Delhi Air Pollution 2026: Why the Supreme Court Wants Action Beyond Firecrackers | UPSC GS-III

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The Supreme Court's 6 November 2026 order placed renewed emphasis on vehicular emissions as a major concern in Delhi-NCR's air-pollution crisis. While fireworks and crop-residue burning can worsen seasonal pollution, the problem also involves road dust, construction, industry, waste burning, transport emissions and unfavourable winter meteorology. The Court sought enforcement details and time-bound action plans from Delhi and neighbouring states. This Civil Service Gurukul analysis explains the National Air Quality Index, PM2.5 and PM10, the Commission for Air Quality Management (CAQM), the Graded Response Action Plan (GRAP), the National Clean Air Programme (NCAP), constitutional environmental principles and year-round strategies. Includes UPSC Prelims revision, original MCQs and a GS-III Mains model answer.

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Delhi Air Pollution Crisis 2026: Why the Supreme Court Wants Action Beyond Firecrackers and Stubble Burning

A fresh Supreme Court order highlights vehicular emissions and the need for sustained, coordinated action across Delhi-NCR. Understand the science, regulatory institutions, air-quality standards and policy solutions for UPSC.

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23 November
Next Vehicle-Pollution Hearing

PM2.5
Fine Particulate Matter

CAQM
NCR Air-Quality Coordination

Executive Summary / Brief Overview

The Supreme Court of India, through an order dated **6 November 2026**, called for urgent attention to vehicular emissions in Delhi and the National Capital Region.

The Court observed that the data presented by the amici curiae indicated declining incidents of stubble burning during the period under review, alongside growing concerns associated with vehicular emissions.

It directed the Municipal Corporation of Delhi, the Government of NCT of Delhi, Delhi Police's Traffic Department, and the governments of Haryana, Rajasthan and Uttar Pradesh to provide details of vehicle regulation, emissions enforcement and proposed remedial action.

The Court also separated the larger pollution issue into hearings concerning vehicles, green cover, construction and industrial activity, and solid waste, crop burning and firecrackers.

Delhi's air-quality crisis cannot be explained by one source alone. Fireworks can generate substantial short-term pollution, but vehicles, dust, industry, waste burning, regional emissions and adverse meteorological conditions contribute to repeated episodes of unhealthy air.

For UPSC aspirants, the issue connects environmental governance, urban transport, public health, cooperative federalism, judicial intervention and constitutional environmental responsibilities.

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Central UPSC Concept

Air pollution is both an emissions problem and an atmospheric-dispersion problem.

Weather conditions can temporarily improve or worsen AQI without corresponding changes in underlying emission rates.

Therefore, one day of improved AQI does not prove sustainable pollution reduction.

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1. Why Is Delhi Air Pollution in the News?

In its 6 November 2026 order in the matter concerning air pollution in the National Capital Region, the Supreme Court examined the status of implementation of previous environmental directions.

The Court noted a decline in recorded crop-residue-burning incidents in the material presented before it, but also drew attention to increased pollution concerns attributable to vehicles.

Authorities Directed to Respond

- Municipal Corporation of Delhi (MCD).
- Government of NCT of Delhi.
- Delhi Police, Traffic Department.
- Government of Haryana.
- Government of Uttar Pradesh.
- Government of Rajasthan.

The Court sought details of measures to identify polluting vehicles, regulate commercial and non-commercial traffic and strengthen emissions enforcement.

Scheduled Supreme Court Hearings

Pollution Issue	Hearing Date
Vehicular emissions and pollution	23 November 2026
Solid waste, crop-residue burning and firecrackers	25 November 2026
Construction, power plants and industrial emissions	26 November 2026
Conservation and enhancement of green cover	30 November 2026

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These are scheduled hearings as of 12 November 2026, not final decisions on the respective issues.

2. Major Sources of Air Pollution in Delhi-NCR

Delhi-NCR air pollution originates from a combination of local and regional emission sources.

A. Vehicular Emissions

Cars, buses, trucks, two-wheelers and other vehicles emit pollutants through fuel combustion. Important pollutants include nitrogen oxides, carbon monoxide and particulate matter.

Vehicles also contribute to non-exhaust particulate pollution through tyre wear, brake wear and the resuspension of road dust.

B. Road and Construction Dust

Construction work, unpaved surfaces, demolition and vehicle movement can release coarse and fine dust particles.

C. Industrial Emissions

Industries and power generation facilities can emit particulate matter, sulphur dioxide, nitrogen oxides and other pollutants depending on fuel and technology.

D. Crop-Residue Burning

Agricultural residue burning can generate smoke that is transported across state boundaries under favourable wind conditions.

E. Firecrackers

Fireworks release particulate matter, gases and other substances. Their impact can be particularly noticeable during concentrated periods of use.

F. Waste Burning

Open burning of waste produces harmful emissions and can be worsened by inadequate collection and enforcement systems.

G. Secondary Particulate Formation

Gases such as nitrogen oxides, sulphur dioxide and ammonia can participate in atmospheric reactions that form secondary particulate matter.

Important Analytical Point

The relative contribution of different sources changes with season, location, meteorology and the method used for source apportionment.

A court observation concerning increased vehicular pollution should not be interpreted as a scientifically established percentage contribution for every day or location in Delhi.

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3. PM2.5, PM10 and the Science of Air Pollution

What Is PM2.5?

PM2.5 means particulate matter with an aerodynamic diameter of **2.5 micrometres or less**.

These fine particles can penetrate deep into the respiratory system and contribute to harmful cardiovascular and respiratory effects.

What Is PM10?

PM10 includes inhalable particles with an aerodynamic diameter of 10 micrometres or less.

PM10 contains both fine and coarser particulate matter.

Other Important Air Pollutants

Pollutant	Important Sources or Formation	Relevance
PM2.5	Combustion, secondary aerosols and other sources	Fine-particle health risks
PM10	Road dust, construction and combustion	Inhalable particulate pollution
NO2	Combustion, particularly vehicle engines and industrial sources	Respiratory effects and ozone formation
SO2	Burning sulphur-containing fuels	Respiratory effects and secondary particles
Ground-Level Ozone	Photochemical reactions involving precursor pollutants	Respiratory effects
CO	Incomplete combustion	Reduces oxygen transport in the body

PM2.5: Indian Standard vs WHO Guideline

India's National Ambient Air Quality Standards prescribe an annual PM2.5 concentration standard of **40 micrograms per cubic metre**.

The World Health Organization's 2021 global air-quality guideline recommends an annual PM2.5 level of **5 micrograms per cubic metre**.

The WHO figure is a health-based guideline. It is not identical to India's domestic ambient air-quality standard.

4. What Is the National Air Quality Index?

The Air Quality Index, or AQI, is a simplified numerical indicator that communicates the condition of ambient air.

India's National AQI uses pollutant-specific concentration data to generate sub-indices. The highest relevant sub-index determines the overall AQI.

National AQI Categories

AQI Range	Category	General Interpretation
0–50	Good	Minimal impact
51–100	Satisfactory	Possible minor discomfort for sensitive persons

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AQI Range	Category	General Interpretation
101–200	Moderate	Potential breathing discomfort for vulnerable groups
201–300	Poor	Breathing discomfort on prolonged exposure
301–400	Very Poor	Respiratory illness risk on prolonged exposure
401–500	Severe	Serious health risks, including for healthy persons

Eight Pollutants Used in India's AQI Framework

PM10, PM2.5, NO2, SO2, CO, O3, NH3 and Pb.

Important Limitation

AQI is not the same as the direct measurement of each person's pollution exposure. Personal exposure also depends on location, time spent outdoors, indoor pollution and activity patterns.

An improvement in a single day's AQI may reflect favourable weather rather than a permanent decrease in emissions.

5. Why Does Delhi's Air Quality Worsen in Winter?

Delhi's winter air pollution is influenced by both emission sources and atmospheric conditions.

Temperature Inversion

A temperature inversion can restrict vertical mixing and help trap pollutants near the ground.

Low Wind Speed

Weak winds reduce pollutant dispersion, allowing concentrations to accumulate.

Shallow Mixing Layer

A lower atmospheric mixing height means pollutants are distributed within a smaller volume of air.

Regional Transport

Air masses can carry pollutants into Delhi from other parts of the Indo-Gangetic Plain.

Seasonal Activities

Crop burning and festivals may add episodic pollution to an already stressed atmospheric environment.

This combination explains why eliminating one visible source cannot, by itself, guarantee clean air throughout winter.

6. Major Institutions Responsible for Air-Quality Management

A. Commission for Air Quality Management (CAQM)

CAQM is a statutory body established under the Commission for Air Quality Management in National Capital Region and Adjoining Areas Act, 2021.

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Its responsibilities include coordination and management of air-pollution prevention and control in the NCR and adjoining areas.

B. Central Pollution Control Board (CPCB)

CPCB is a statutory pollution-control institution with responsibilities under India's environmental laws, including functions related to monitoring and standard-setting.

C. Delhi Pollution Control Committee (DPCC)

DPCC performs relevant pollution-control and monitoring functions in the National Capital Territory of Delhi.

D. State Pollution Control Boards

Neighbouring states' pollution control boards have important roles in monitoring and enforcement within their jurisdictions.

E. Local Governments

Municipal bodies are responsible for several functions that influence air quality, including waste management, road maintenance and certain local pollution-control operations.

F. Traffic and Transport Authorities

These authorities regulate vehicles, traffic circulation and compliance with applicable transport and emissions requirements.

7. Graded Response Action Plan (GRAP): Complete UPSC Notes

GRAP provides a framework of progressively stronger air-pollution control measures for Delhi-NCR based on air-quality conditions and forecasts.

CAQM may invoke stages after considering monitoring data and meteorological forecasts.

GRAP Stage	Associated Delhi AQI Band	Focus
Stage I	201–300: Poor	Basic control and enforcement measures
Stage II	301–400: Very Poor	Stronger preventive and mitigation measures
Stage III	401–450: Severe	Additional restrictions on selected pollution-generating activities
Stage IV	Above 450: Severe Plus	Most stringent emergency measures

These bands reflect the established GRAP framework, which should not be confused with the six general National AQI categories.

GRAP stages may also be invoked or revised in anticipation of forecast deterioration. The exact restrictions must be checked against the CAQM orders in force on the relevant date.

Why GRAP Alone Is Insufficient

GRAP is particularly important during acute air-pollution episodes. However, temporary emergency restrictions do not replace long-term action on transport infrastructure, industrial fuel use, road dust, waste management and regional emissions.

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8. National Clean Air Programme (NCAP)

The National Clean Air Programme was launched by the Government of India in **2019**.

It provides a framework for reducing air pollution through coordinated action by central, state and local authorities.

Important Features

- City-level clean-air action plans.
- Pollution monitoring and data improvement.
- Action against identified emission sources.
- Coordination across departments and institutions.
- Capacity building and public awareness.
- Monitoring of implementation progress.

Unlike GRAP's short-term emergency focus, NCAP is directed towards systematic and longer-term air-quality improvement.

UPSC Comparison

NCAP: Long-term, multi-sectoral clean air improvement programme.

GRAP: Staged response to adverse or forecast air-quality conditions in Delhi-NCR.

CAQM: Statutory coordination institution for NCR and adjoining areas.

9. Constitutional and Legal Framework for Clean Air

Article 21: Right to Life

Judicial interpretation of Article 21 includes protection of life, health and environmental quality.

Article 48A: Directive Principle

The State shall endeavour to protect and improve the environment and safeguard forests and wildlife.

Article 51A(g): Fundamental Duty

Citizens have a fundamental duty to protect and improve the natural environment and have compassion for living creatures.

Environment (Protection) Act, 1986

This Act provides significant legal authority for environmental protection, including standards and regulatory directions.

Air (Prevention and Control of Pollution) Act, 1981

The Act establishes an important legal framework for preventing, controlling and abating air pollution.

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CAQM Act, 2021

The Act provides the statutory basis for the Commission for Air Quality Management in NCR and adjoining areas.

Environmental Principles

- Polluter Pays Principle.
- Precautionary Principle.
- Sustainable Development.
- Intergenerational Equity.
- Environmental Justice.

These principles provide useful analytical tools when evaluating pollution-control policies.

10. A Year-Round Clean-Air Strategy for Delhi-NCR

1. Strengthen Public Transport

Reliable buses, integrated metro connections, affordable fares and safe last-mile connectivity can reduce dependence on private vehicles.

2. Improve Vehicle Emission Compliance

Stronger inspection, maintenance, emission testing and action against grossly polluting vehicles can reduce transport-related emissions.

3. Reduce Traffic Congestion and Idling

Traffic-flow management, freight planning and reduced idling at entry points can address avoidable fuel consumption and emissions.

4. Accelerate Cleaner Vehicle Fleets

Electrification of suitable public transport and commercial fleets, along with reliable charging infrastructure and cleaner electricity, can support emission reductions.

5. Control Road and Construction Dust

Paved road shoulders, effective site enclosures, covered material transport, mechanical road sweeping and compliance inspections are important.

6. Address Industrial and Generator Emissions

Cleaner fuels, effective pollution-control equipment, better monitoring and reliable electricity supply can reduce combustion emissions.

7. Prevent Open Waste Burning

Improved waste collection, segregation, enforcement and disposal systems can reduce local emissions.

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8. Support Alternatives to Crop Burning

Residue-management equipment, viable biomass markets, farmer assistance and coordinated enforcement may reduce seasonal burning.

9. Adopt an Airshed Approach

Since pollution travels across borders, Delhi, Haryana, Uttar Pradesh, Rajasthan and other relevant regions require coordinated planning.

10. Publish Transparent Results

Monitoring networks, source-apportionment studies and independent performance audits should be used to judge whether policies reduce long-term pollutant exposure.

11. Implementation Challenges and Environmental Justice

Fragmented Administration

Multiple state governments, municipalities, regulatory and transport bodies share responsibility for different pollution sources.

Weak Enforcement

Formal restrictions may have limited impact without consistent inspections and penalties where legally appropriate.

Economic Constraints

Cleaner technologies can require upfront investment from small enterprises, transport operators and households.

Public Transport Gaps

Restrictions on private vehicles may be inequitable if reliable and affordable alternatives are unavailable.

Monitoring Limitations

Incomplete or uneven monitoring makes it harder to compare neighbourhoods or evaluate long-term progress.

Vulnerable Groups

Children, older adults, people with existing illnesses and outdoor workers can face disproportionate health burdens.

Ethical Way Forward

A just clean-air policy must reduce exposure while protecting livelihoods, ensuring accessible public transport and avoiding unfair burdens on low-income communities.

12. UPSC Prelims 2027: Quick Revision

- **Supreme Court order:** 6 November 2026.
- **Vehicular-emissions hearing:** Scheduled for 23 November 2026.

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- **PM2.5:** Fine particles of aerodynamic diameter 2.5 micrometres or less.
- **PM10:** Inhalable particles of aerodynamic diameter 10 micrometres or less.
- **National AQI:** Six categories, from Good to Severe.
- **India's annual PM2.5 standard:** 40 µg/m³.
- **WHO 2021 annual PM2.5 guideline:** 5 µg/m³.
- **CAQM Act:** 2021.
- **NCAP launch:** 2019.
- **GRAP:** Graded Response Action Plan.
- **Constitution:** Articles 21, 48A and 51A(g).
- **Important concept:** Meteorology affects pollution concentration and AQI.

13. UPSC Prelims Practice MCQs

Q1. Consider the following statements about particulate matter:

1. PM2.5 refers to particles with aerodynamic diameter up to 2.5 micrometres.
2. PM10 includes particles with aerodynamic diameter up to 10 micrometres.
3. PM2.5 is necessarily larger than PM10.

Which statements are correct?

A. 1 only

B. 1 and 2 only

C. 2 and 3 only

D. 1, 2 and 3

> **Correct Answer: B. 1 and 2 only.**
>
> PM2.5 is a finer particle-size category within the broader PM10 range. Statement 3 is incorrect.

Q2. Which organisation is responsible for coordinating air-quality management in the National Capital Region and adjoining areas under its establishing law?

A. Finance Commission

B. CAQM

C. National Human Rights Commission

D. Election Commission of India

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Correct Answer: B. CAQM.

The Commission for Air Quality Management is the relevant statutory institution for NCR and adjoining areas.

Q3. Consider the following statements:

1. India's National AQI has six categories.
2. GRAP is a staged response mechanism used in Delhi-NCR.
3. One day of improved AQI necessarily proves permanent emission reductions.

Choose the correct answer.

A. 1 and 2 only

B. 2 and 3 only

C. 1 and 3 only

D. 1, 2 and 3

Correct Answer: A. 1 and 2 only.

AQI can vary with meteorology, so a short-term improvement is not sufficient evidence of a permanent emission reduction.

Q4. Which constitutional provisions are associated with environmental protection?

A. Articles 21, 48A and 51A(g)

B. Articles 72, 110 and 123 only

C. Articles 148, 149 and 150 only

D. Articles 324, 325 and 326 only

Correct Answer: A.

Article 21 has been interpreted to protect environmental aspects of life, Article 48A places a duty on the State, and Article 51A(g) sets out a fundamental duty of citizens.

Q5. Why is an airshed approach useful for Delhi's air-pollution management?

A. Air pollutants cannot cross state boundaries.

B. Air quality depends only on municipal boundaries.

C. Pollutants can move across administrative borders, requiring coordinated regional action.

D. Meteorological conditions do not influence pollutant concentrations.

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Correct Answer: C.

Pollution transport and atmospheric mixing extend beyond administrative boundaries, making regional coordination necessary.

14. UPSC Mains GS-III Practice Question

Question (15 Marks | 250 Words)

"Delhi's air-pollution problem cannot be solved through episodic measures against fireworks and stubble burning alone." Examine the role of vehicular emissions, institutional coordination and year-round regulatory reforms.

Model Answer

Introduction: Delhi-NCR's recurring air-pollution crisis arises from multiple sources, including transport, dust, industry, waste burning and seasonal agricultural emissions. Adverse meteorology intensifies exposure, particularly during winter.

Why episodic measures are insufficient: Restrictions on fireworks and crop burning can address specific pollution events. However, continuous vehicular emissions, construction dust and industrial activity also contribute to poor air quality. A temporary AQI improvement may reflect changing weather rather than sustained emission reductions.

Vehicular emissions: The Supreme Court's November 2026 order highlighted the need to strengthen vehicle regulation and emissions enforcement. Polluting vehicles, congestion and cross-border traffic require systematic attention.

Institutional challenges: Delhi-NCR involves multiple state governments, municipalities and regulatory agencies. Fragmented responsibilities, weak enforcement and insufficient monitoring can reduce policy effectiveness.

Way forward: Governments should expand affordable public transport, enforce emission standards, reduce congestion, electrify suitable fleets, control construction dust and prevent open waste burning. CAQM-led airshed coordination, transparent source-apportionment data and measurable targets are essential.

Social justice: Policies should protect low-income commuters, outdoor workers, children and vulnerable communities while providing viable alternatives to polluting activities.

Conclusion: Sustainable clean air requires a year-round, science-based and regionally coordinated approach that combines emissions reduction, effective institutions and public accountability.

15. UPSC GS-IV: Ethics and Environmental Governance

Public Accountability

Government agencies should disclose measurable pollution-control progress instead of relying only on announcements.

Intergenerational Justice

Environmental decisions today influence the health and well-being of future generations.

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Equity

Pollution-control measures should consider the disproportionate burdens faced by low-income households and vulnerable groups.

Responsible Citizenship

Article 51A(g) encourages citizens to contribute to environmental protection.

Ethical Administration

Public authorities should prioritise credible evidence, transparent enforcement and cooperation over short-term symbolic measures.

16. Frequently Asked Questions

Why did the Supreme Court highlight vehicular emissions?

The Court noted information indicating declining incidents of stubble burning while vehicular-emission concerns had increased. It sought detailed regulatory and enforcement responses from Delhi and neighbouring states.

What is PM2.5?

PM2.5 means particulate matter with aerodynamic diameter of 2.5 micrometres or less. It is a significant public-health concern.

What is the National Air Quality Index?

It is an index used to communicate ambient air quality through pollutant-specific measurements and six categories ranging from Good to Severe.

What is the difference between GRAP and NCAP?

GRAP provides staged responses to deteriorating air quality in Delhi-NCR, while NCAP supports longer-term, multi-sectoral air-quality improvement across participating cities.

Why are fireworks bans alone insufficient?

Fireworks contribute to particular pollution episodes, but continuous sources such as transport, road dust, construction, industry and waste burning need permanent controls.

Why does Delhi require interstate cooperation?

Air pollutants travel across state boundaries, and the NCR's transport, economic and environmental systems are interconnected.

Which constitutional provisions are relevant?

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Articles 21, 48A and 51A(g) provide important constitutional foundations for environmental protection.

17. Conclusion: From Emergency Restrictions to Permanent Clean Air

The Supreme Court's November 2026 intervention highlights the need to address vehicular emissions alongside other major sources of Delhi-NCR air pollution.

The problem cannot be solved through restrictions on fireworks or crop-residue burning alone. Permanent progress requires cleaner transport, stronger emissions enforcement, construction-dust control, regional cooperation and transparent data.

Civil Service Gurukul Key Takeaway: For UPSC, link Delhi air pollution with environmental science, governance, cooperative federalism, public health and constitutional responsibility. The strongest policy response combines immediate protection during severe episodes with sustained year-round emission reductions.

18. Civil Service Gurukul — UPSC Preparation

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