Environment & Ecology · GS - III

Evaluate the effectiveness of vehicle-emission standards as an instrument for controlling urban air pollution in India. Examine the regulatory, technological and governance measures required to improve air quality in the National Capital Region.

EXAM YEAR	PAPER	SUBJECT
DAILY PRACTICE 23/11/2026	GS - III	Environment & Ecology

MARKS	WORD LIMIT
15	~250 words

Answer Hint

Vehicular emissions, BS-VI standards, particulate matter, nitrogen oxides, fuel quality, vehicle inspection, public transport, inter-state coordination, airshed management, clean mobility

Model Answer

Introduction

Vehicular emissions are an important contributor to urban air pollution, particularly in densely populated regions such as Delhi-NCR. India's transition to BS-VI standards represents a significant regulatory intervention to reduce pollution from road transport.

Effectiveness of Vehicle-Emission Standards

1. **Stricter emission limits:** BS-VI standards impose tighter limits on pollutants such as nitrogen oxides, particulate matter and hydrocarbons compared with earlier standards.

2. **Cleaner fuel:** The transition to BS-VI also involved the nationwide introduction of fuel with a substantially lower sulphur content, supporting cleaner vehicle technology.

3. **Technological improvement:** Advanced emission-control systems, improved engine management and onboard diagnostics can reduce vehicular pollution.

4. **Regulatory consistency:** Uniform national standards help manufacturers adopt cleaner technologies and improve the environmental performance of new vehicles.

Limitations and Challenges

1. **Existing vehicle fleet:** Older vehicles continue to contribute to emissions, even after stricter standards are introduced for new vehicles.

2. **Enforcement gaps:** Weak pollution-under-control testing, poor maintenance and non-compliance can undermine regulatory effectiveness.

3. **Multiple pollution sources:** Construction dust, industrial emissions, waste burning and seasonal agricultural fires also contribute to NCR pollution.

4. **Regional coordination:** Pollution travels across administrative boundaries, making isolated city-level interventions insufficient.

Way Forward

1. Strengthen vehicle inspection, maintenance and real-world emission monitoring.
2. Expand reliable public transport, electric mobility and non-motorised transport infrastructure.
3. Improve freight management and promote cleaner commercial vehicles.
4. Coordinate state governments and pollution-control authorities through an airshed-based approach.
5. Ensure that restrictions on older or non-compliant vehicles are supported by affordable mobility alternatives and uninterrupted essential-goods movement.

Conclusion

BS-VI standards are an important step towards cleaner transport, but emission standards alone cannot resolve urban air pollution. A coordinated

BECOME IAS
AI POWERED UPSC PREP

strategy combining enforcement, public transport, clean technology and regional pollution management is essential for sustainable improvement in Delhi-NCR's air quality.

BECOME IAS
AI POWERED UPSC PREP