

A CSE Factsheet: The Delhi Smog of 2012

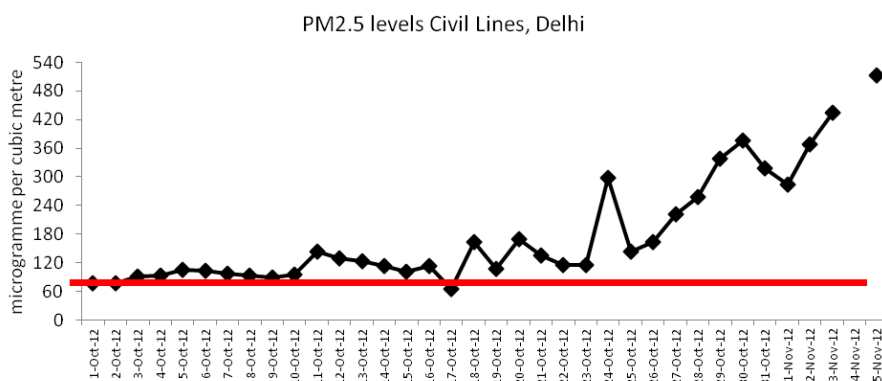
Urgent action is needed so that the city does not negate gains of first generation reforms for combating air pollution



Photo credit: Anurag Agnihotri

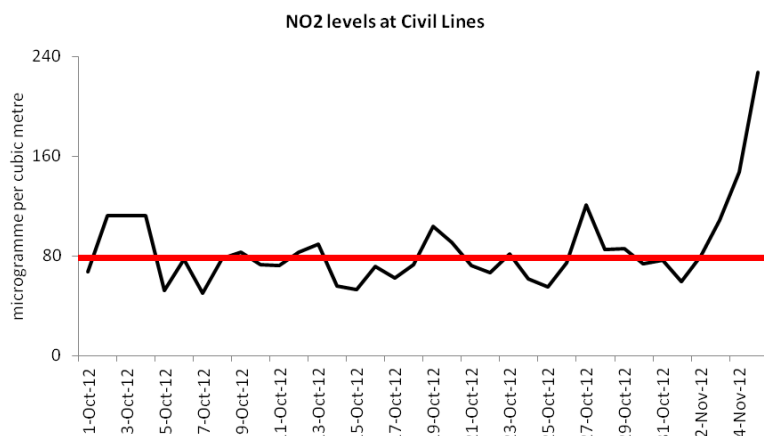
- Current levels of air pollution are high and extremely toxic: This early winter pollution levels have spiked to very unhealthy levels. Data from the Delhi Pollution Control Committee shows that in the last week, since the cold has settled in and fog conditions have been created, air pollutants have peaked – in Civil Lines, PM 2.5 levels are up to 539 microgramme per cubic metre on November 5 -- eight times higher than standard. NO₂ has jumped to 230 microgramme per cubic metre, which is 2.8 times the standard. These levels are unacceptable, because they are a clear health hazard. Already there is evidence of severe respiratory ailments afflicting people. The air is toxic. NO₂ is a trigger for serious respiratory conditions and sudden death syndrome among infants.

Graph1: Levels of PM2.5 (October 01 to November 05, 2012)



Source: Based on air quality data of Delhi Pollution Control Committee

Graph2: Levels of nitrogen dioxide (October 01 to November 05, 2012)

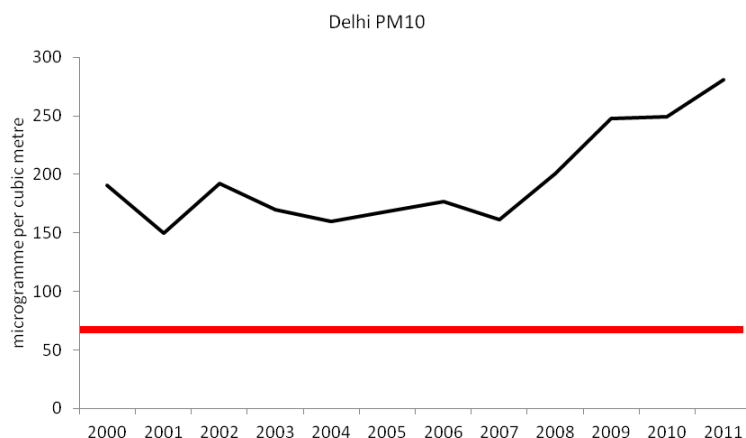


Source: Based on air quality data of Delhi Pollution Control Committee

- The prevailing calm weather conditions, which stills the air and does not allow circulation or dispersal exacerbates smog.
- In addition, there is evidence that farm fires in Punjab are leading to pollution plumes spreading across the region. NASA has released its [latest satellite imagery](#) showing the extent of this particulate cloud. It has to be noted that burning biomass on fields is illegal in Punjab and therefore, these fires, clearly visible from the satellite are illegal and a serious healthy hazard.
- Pollution levels are increasing each year in Delhi so that each winter is more toxic and unhealthy to breathe (Graph 3a&b). After the introduction of CNG the city's air pollution levels leveled off for four years. This was the enormous success of the CNG transition. But since then every year has since a steady increase.

Graph3a: PM₁₀ levels, Delhi (2000-2011)

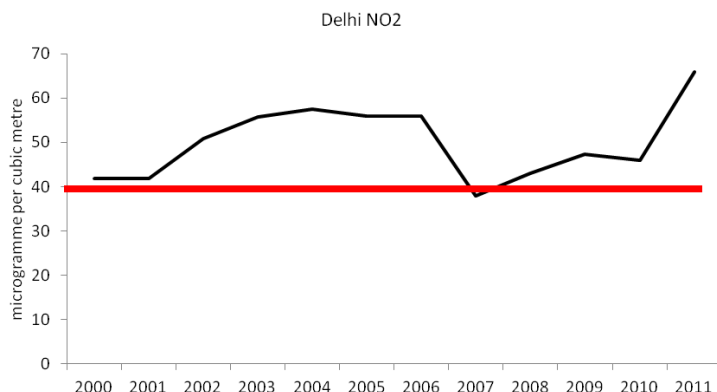
The levels of respirable particulate matter (PM₁₀) have surged 47 per cent – between 2000 and 2011



Source: Based on air quality data of Central Pollution Control Board

Graph3b: NO₂ levels, Delhi (2000-2011)

The NO₂ levels have increased in the city between 2000 and 2011 by 57 per cent



Source: Based on air quality data of Central Pollution Control Board

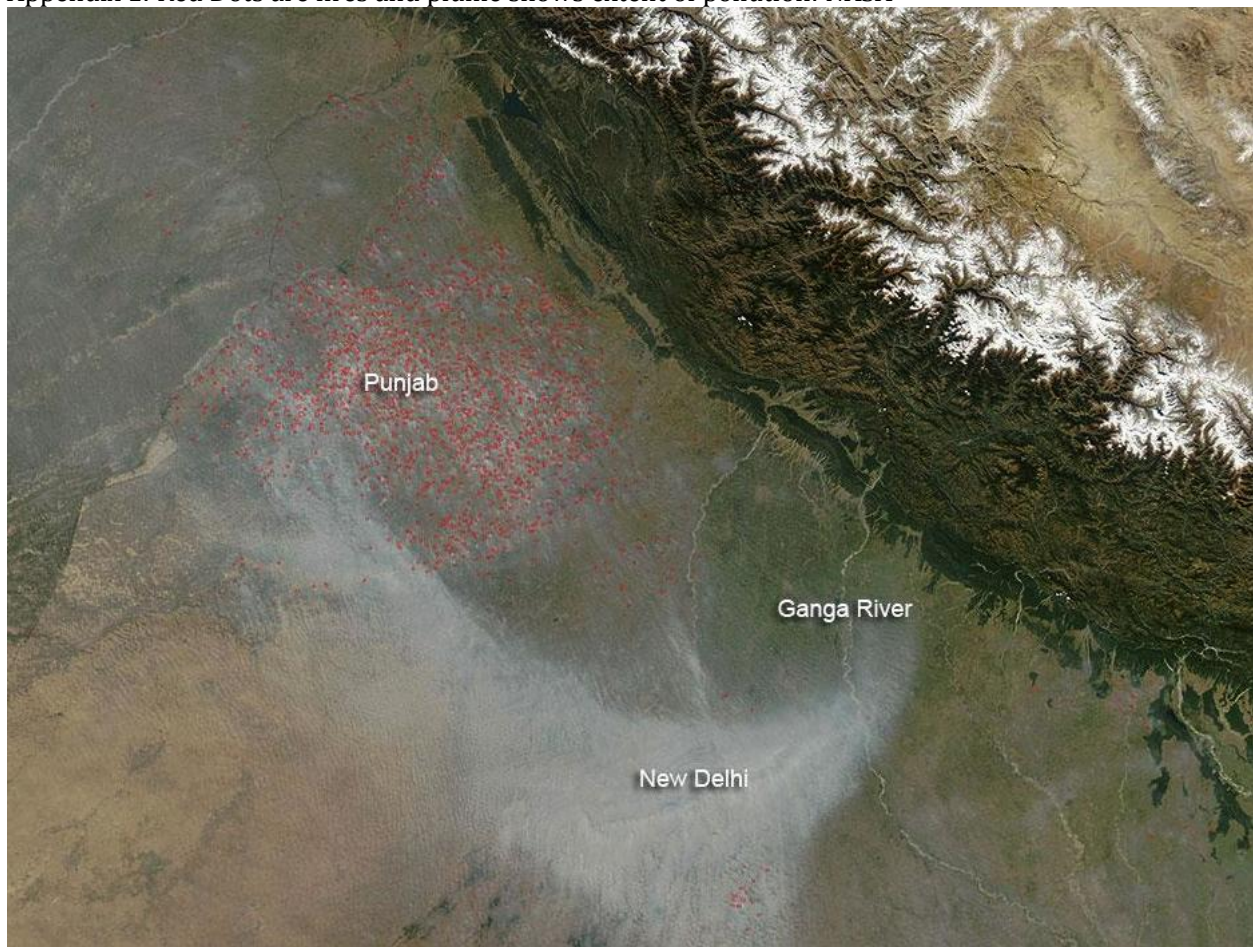
- The key reason for increasing air pollution in the city and this year's smog are as follows:
- The growing numbers of vehicles in the city. Today Delhi alone adds 1,100 new personal vehicles a day – double of what was added in the city in the pre-CNG period. Therefore, even as each new generation of vehicles and fuel has become cleaner, the gain is lost because of the numbers of vehicles that are being added on the road.
- The growing numbers of diesel vehicles in the city. The market share of diesel cars is more than 50 per cent of sales – unlike pre-CNG days. This is because of the growing differential between petrol and diesel. The diesel emission norms legally allow higher limits for NO_x and particulate emissions as compared to a petrol car.
- The explosion of inter-state trips in the NCR region. By 2010, there were 1.2 million vehicles entering and leaving Delhi every day and over 70 per cent of these vehicles were cars. The NCR region – city of Gurgaon, Faridabad and others have grown to be important commercial hubs but have completely inadequate public transport connectivity. This is a phenomenal growth and has greatly contributed to the congestion and pollution in the city and the NCR region.
- Delhi has already exhausted all soft options – the first generation solutions for air pollution control. The attached table (appendix 2) lists all steps being taken to combat air pollution. But this is clearly not enough. The solution must be to restrain the growth of personal vehicle usage, particularly diesel vehicles and this is only possible through a highly augmented public transport system in Delhi and the region. EPCA has been working with government of Delhi and in the NCR to implement the public transport agenda and to enforce numerous measures to reduce air pollution. But implementation of these steps is extremely slow. The city needs emergency level action to reduce the growing load of pollution in its air.

Urgent actions needed to combat current and future air pollution:

- Scale up and integrate public transport systems: Delhi is taking a long time to scale up its public transport system. Government had proposed that Delhi would require 15,000 buses to cater to the peak passenger traffic. In 1998, the Supreme Court had directed that the city should expand its bus service to 11,000 buses. But currently there are only 5000-6000 buses in the city. This is completely inadequate. In addition to this, we need to improve access and augment walking and cycling facilities for green commuting and integrate the public transport modes.

- Introduction of higher parking charges for cars and high penalties and enforcement against unauthorized parking across the city: Parking devours close to 8-10 per cent of urban land in Delhi; daily addition of new cars creates additional demand for land bigger than 300 football fields every year. But cars pay nothing or a pittance for using the valuable land. Car parking is choking roads, walkways, green spaces, when cars carry only 14 per cent of travel trips in the city.
- Accelerate emissions standards roadmap for clean vehicles and fuels to cut emissions are source. Stop dieselization and its toxic effects. The increasing use of diesel personal vehicles must be taxed higher to discourage its use.
- Introduction of large numbers of inter-city buses on CNG for commuting people between NCR cities. This service is completely inadequate and needs to be augmented to provide alternative options for people to private vehicles.
- Speedy completion of western peripheral expressway to provide alternatives to commercial vehicles. Present progress is tardy and in the last one year, this critical expressway has seen only 1 per cent progress.
- Data from the Pollution Control board shows that pollution levels go up significantly during peak traffic hours compared to off-peak hours. The levels also peak during nighttime when key roads witness freight traffic. Therefore strict enforcement of the Supreme Court directive against allowing non-destined vehicles to enter Delhi must be implemented. It has found that implementation of this directive is difficult because of the problems in checking vehicles on entry. Therefore, check posts have to be organized up to 5 km before entry into Delhi so that non-destined vehicles are turned around and not allowed entry.

Appendix 1: Red Dots are fires and plume shows extent of pollution: NASA



Appendix 2: First generation reforms for combating air pollution in Delhi

	Measures to combat air pollution	Steps being taken to enforce and implement action
	Fuel and vehicle emission quality	
1.	Only Bharat Stage IV vehicles registered	
2.	Three-wheeler numbers have been capped	Regular checks by transport department to ensure old vehicles phased out
3.	Plugging loophole in Euro III vehicles for NCR	EPCA has directed the government to notify that only Euro III vehicles will be allowed in NCR and to change the provision for inter-state vehicles
	In-use vehicles	
4.	In-use vehicle (PUC) upgraded to new standards and equipment: currently 500 centres in city	Third-party audit introduced to ensure centres are working
5.	Special drives on road to check gross-polluters by increased inspection	The transport department is conducting special drives. The directive is to increase activity in winter months.
6.	In-use vehicle inspection system for commercial vehicles set up in Burari with upgraded facilities	Third-party contract given to ensure fitness and emission tests
7.	To check pollution from transit traffic directions to allow only-city destined vehicles	To better enforce system, system has been computerised and contractor terms now include heavy penalties for lack of enforcement of this direction
8.	Construction of expressway to provide alternatives to heavy vehicles to bypass city	The work is being monitored by committee set up by the Hon'ble Supreme Court
9.	Registration of only-CNG light and medium duty vehicles to reduce diesel pollution	A notification by the government has mandated this transition and currently all light duty commercial vehicles have been moved to CNG. Efforts are on to provide special incentives to convert medium vehicles to CNG.
	Diesel vehicles	
10.	Cess charged on the sale of diesel to discourage use	Delhi government has introduced a cess and created an air ambient fund so that money collected can be used to subsidy conversion to battery and other non-polluting vehicles. This has lead to small drop in sale of diesel in Delhi but this is negated by increased use in the NCR region where diesel is cheaper.
11.	Special pollution under control drives	Transport department has been asked to intensify drives against polluting diesel vehicles. It has also introduced conditions for quarterly PUC to be submitted at the time of annual fitness.
	Other sources of air pollution	
12.	Industrial air pollution control	The state pollution board is reviewing

		action. EPCA has noted that the worst pollution is from Mayapuri and has asked for action to be taken
13.	Power station related emissions	CPCB has been asked to notify standards for Sox and Nox. Time-bound programme for control of pollution from unit no 5 of IP given.
14.	Construction related emissions	DPCC has been asked to see what actions are feasible to be taken and to direct for these to be done
15.	Generator related emissions	DPCC is enforcing standards for cell phone towers and dealing with current complaints; CPCB is to notify new standards for DG sets.
16.	Leaf burning and areas for composting	Government has issued directions to MCD/NDMC making officials responsible for checking burning of leaves during winter. Public notices have been issued in newspapers.
	Ensuring clean fuel (CNG)	
17.	Ensuring that supply of CNG keeps up with demand	IGL has been directed to ensure that it will upgrade its dispensing capacities to meet the demand
18.	Ensure safety of buses through development of protocols and checks	Transport department has been directed to set up the system of quarterly checks and annual fitness checks for buses and manufacturers have been directed to rectify problems

Source: Environment Pollution (Prevention and Control) Authority [EPCA] for Delhi and NCR