

Reduce exposure to toxic air in city, says US expert

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New Delhi: The Delhi government's pollution control measures should be geared towards reducing people's exposure to toxic air, said a US expert.

Speaking at a clean air conclave organised by CSE recently, Kirk R Smith of University of California at Berkeley cited latest research to indicate that health impacts from air pollution could be managed better if the focus was on minimising exposure to pollution sources. Smith, a professor of global environmental health, is adviser to the Union health ministry's steering committee on air pollution, which released its report last year.

He shared the results of a PM 2.5 exposure apportionment study conducted for Chennai, which showed that vehicles were responsible for

GREEN STUDY

45% of emissions in the city but contributed to 63% of exposure. Exposure is assessed through "intake fraction"—a measurement for the amount of pollution inhaled compared to the amount of pollution emitted from a source.

"The recommendation is to first select the various categories of sources such as vehicles, power plants, waste burning and others and then determine the intake fraction for each source. This will help prioritise the sources. For instance, sources such as power plants are far from people but vehicles are closer to them, so the exposure may be higher in case of vehicles," Smith told TOI adding that the Delhi Pollution Control Committee (DPCC) can study exposure levels by using new tools and research techniques.

Linking the odd-even strategy to the larger need to control

emissions from all vehicles, Smith said, "Vehicles have a higher intake fraction (iF). Monitors that are fixed on top of buildings or at an elevation will not be able to capture what people are really breathing. Diesel trucks and cars, for instance, can cause high exposure, emissions from gasoline are not as bad. It's logical that you will want to control emissions from vehicles because there are a large number of people near roadsides and on roads."

Anumita Roy Chowdhury of CSE shared findings from a global study, which revealed that Delhi's intake fraction from vehicles was way higher than China's, the world average and other Indian metros except Kolkata. The iF from vehicles in Delhi was 100 compared to 150 in Kolkata, 45 in China and 21 in US, the study said.

Smith stressed the need to adopt an exposure monitoring mechanism in Indian cities, like the one used in California. "Air pollution damages the immune system. So while pneumonia is caused by bacteria, air pollution makes the immune system weak and vulnerable to pneumonia. It is, of course, linked to chronic lung and heart diseases," he added.

The report released by the health ministry panel last year had laid stress on exposure monitoring as well. As of now, the Delhi government is using the information on source apportionment given by IIT Kanpur.

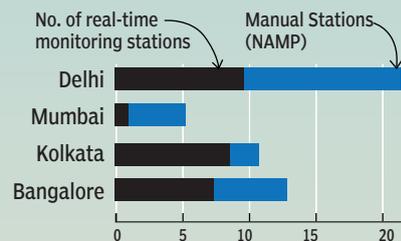
CM Arvind Kejriwal had addressed air pollution experts and NGOs at the the CSE conclave and said that the odd-even scheme was successful in Delhi. CSE, however, suggested that government focus on long-term solutions such as parking restraints. "The first thing to do is to delimit legal parking area and impose very high penalty when parking rules are flouted," Roy Chowdhury added.

INDIA'S POLLUTION IN 5 CHARTS

While Delhi is the most polluted city among the metros, it monitors air pollution most comprehensively. Also, the number of vehicles plying on the road is much higher

Monitoring capacity

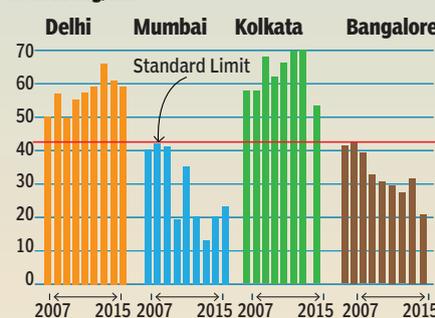
Delhi has the highest number of real-time and manual air quality monitoring stations while Mumbai has one of the lowest



Mumbai and Bangalore are doing better on NO2 as well

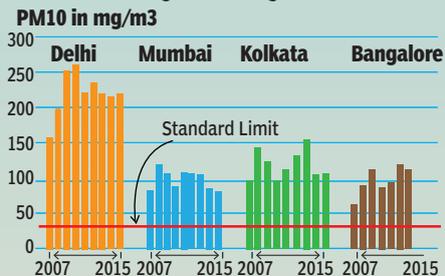
NO2 levels in Mumbai and Bangalore are declining but rising in Delhi and Kolkata

NO2 in mg/m3



PM10: Mumbai better off

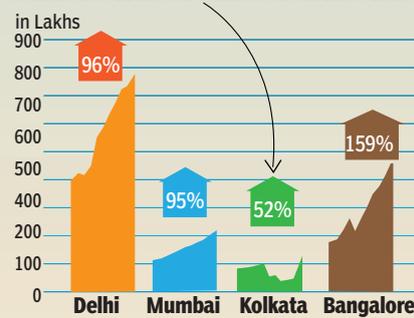
Delhi, Kolkata and Bangalore's PM levels have either stabilised or are going up but there seems to be a slight declining trend in Mumbai



Number of vehicles is exploding at an alarming rate

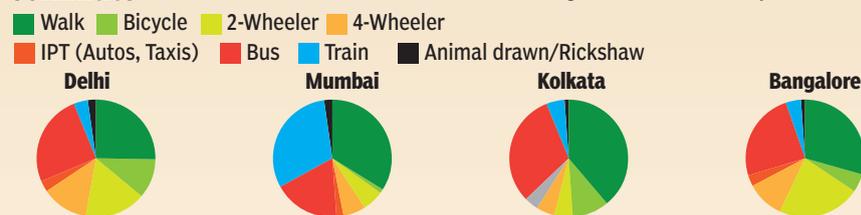
Vehicle numbers are steeply rising in all cities but the rate of increase is highest in B'lore

% Increase in motor vehicles from 2003-2013



How people commute

Kolkata has the largest share of people walking and using buses. Mumbai has the lowest number of commuters using two-wheelers and cycles



Even today, majority in our cities walks, cycles or uses public transport



Most people are too poor to even use public transport



Some cities have invested in public transport—to improve quality of service



Source: CSE