

Delhi's air pollution is both a challenge and an opportunity

Air pollution in Delhi has dominated the headlines over the past few weeks and rightly so. The problem is especially urgent because Delhi is not the only polluted city in the country. Eleven of the 20 most polluted cities in the world are in India. Given the massive expansion we expect in the urban population over the next 20 years, and the need to attract investment to create quality jobs, we need to make our cities liveable and attractive to tourists. Success in Delhi could provide a much needed template for the other cities.

Awareness of the problem

Recognizing the problem is the first step towards corrective action and there is progress in this area. A few years ago, an American journalist stationed in Delhi wrote a farewell piece saying that he was leaving Delhi because the air pollution monitors in the US embassy showed that staying in the Capital would put his children's health at risk. There was an outburst of nationalistic outrage that the embassy was probably exaggerating the problem. Since then, a number of government monitoring stations have been established in Delhi and they confirm that the problem is indeed serious.

The figure above reports the level of air pollution by PM 2.5 particles at the Siri Fort station in New Delhi for the 12 months from mid-November 2016 to mid-November 2017. The sharp spikes when readings go off the chart are frightening and attract headlines but the real problem is not these emergency situations. It is that the average for the year, at 142, is far too high. It is more than three times the national standard of 40, and 14 times the stricter WHO (World Health Organization) standard of 10. If the monsoon months are excluded, most of the readings are consistently in the unhealthy range.

Medical experts in India have warned that children exposed to this level of pollution will develop asthmatic problems much earlier than normal. Pregnant women exposed to high levels of air pollution are more likely to deliver low birth weight babies, with all the permanent health problems that it causes. Senior citizens are also at risk.

Many activists have been working hard at raising consciousness and even pushing the judiciary to act. But judicial pushing can only go so far. It is useful in cases where prohibition of activities is all that is needed. It cannot devise a carefully crafted strategy operating on many fronts. This is for the government to do and then implement.

Can pollution be controlled?

Until a few years ago, Beijing was more polluted than Delhi. There were many stories in the international press about the very high levels of pollution in the run up to the prestigious 2008 Olympic Games in Beijing. The Chinese government took firm action to control local industrial pollution, reduce the use of coal in power plants, and also restrain the sale of cars in Beijing. National Aeronautics and Space Administration's (Nasa) satellite data show a 17% decline in the concentration of fine particulate matter over China between 2010 and 2015. The same data show an increase of 13% over India in the same period. Pollution in China is still bad, but it is seen to be slowly coming under control whereas it is rising in India.

An action plan for Delhi

If we want to bring pollution down from the average of 142 to the national standard of 40, we need to (a) reduce pollution by as much as 72% and (b) ensure that it stays at that level notwithstanding

growth of population and economic activity. This will require action on a massive scale by many central ministries and Delhi state government bodies acting on different areas.

The Environmental (Prevention and Control of) Pollution Authority (EPCA), established by the Supreme Court, has prepared a comprehensive multi-dimensional action plan for control of pollution in Delhi. It includes proposals for shifting to cleaner vehicles and fuels, restraining the growth in cars and expanding public transport as an alternative, stopping pollution from coal-based power plants, controlling pollution from industry, putting a stop to burning garbage, preventing pollution from construction activities and controlling burning of crop residues in neighbouring states. Some of the actions have to be taken by the central government and others by the Delhi state government and local bodies. Actions that have to be taken by the central government are also spread across different ministries.

Road dust contributes about 38% of the pollution. This component is particularly difficult to control since it reflects both poor road conditions with unpaved footpaths, and the use of traditional technology—hand-held brooms—for sweeping the streets. Such sweeping can shift litter to one side, to be collected separately. It does little to control road dust. It only throws it up in clouds and shifts it to the side, from where it is disturbed again by traffic through the day. Vacuum cleaning devices attached to mechanical sweepers will help, but that would require massive investment in equipment, which may be beyond the funding budget of the municipality. Similarly, proposals for sprinkling water over all the roads in the city would run into water-availability constraints.

Vehicle emissions account for 20% of the pollution and this component is likely to increase as the number of cars multiplies. There is much that could be done in this area. The decision to advance BS VI fuel to 2018 for Delhi, and 2020 for the whole country, is a welcome move. It needs to be accompanied by action to ensure that new cars are all equipped with engines designed for BS VI fuel. The two together will reduce particulate pollution by 70% to 80%. However, since the large stock of older cars will remain for many years, and the total number of cars is also expected to expand, the total pollution load from automobiles may not come down sufficiently over the near future. There is no alternative to actively discouraging car ownership and plan a massive shift to public transport in the capital.

Discouraging car ownership calls for many tough decisions. We need to increase the taxation of cars by introducing an annual or biannual licence fee, as we have for buses. We also need to introduce higher parking charges in the areas of the city that are congested and the charges should be high enough to discourage car usage. We need to eliminate the current favourable tax treatment of diesel compared with petrol to discourage the trend to use diesel vehicles, especially SUVs. The WHO has classified diesel as a No.1 carcinogenic, along with tobacco. Diesel need not be banned since its use in sparsely populated areas will not create excessive pollution, but it should definitely be discouraged in urban locations. A higher licence fee could be prescribed for diesel vehicles.

In the longer run, electrification of cars and scooters will solve the problem, but even if all cars sold from 2030 onwards are electric, it will be a long time before a substantial portion of the stock of cars becomes electric. To accelerate adoption of electric vehicles (EVs) we should announce that all taxis and three wheelers must compulsorily be made electric in Delhi, as soon as such vehicles become available.

Discouragement of cars needs to be accompanied by a parallel effort to expand bus and Metro services. This is widely supported, but it runs into financial constraints. The EPCA has recommended the creation of an urban transport fund to upgrade public transport. All receipts from parking charges, and also the licence fee on cars and buses should be paid into this fund. Those who support public transport often baulk at measures to raise funds to finance it. The Central

government could offer to provide matching funds equal to what is raised by the cities.

We should definitely consider ending the use of coal in power plants located close to Delhi. There are gas-based power plants which are under-utilized partly because the utility prefers to buy lower priced coal-based electricity, and partly because gas is not available. Gas could be imported, but this will make gas-based power even more expensive. A regulatory intervention forcing coal-based plants to shut down, ensuring adequate supply of gas, and most importantly, allowing the price of electricity to rise, is needed. Higher energy prices will be resented but they are essential if we want to shift to more energy- efficient outcomes. The present cess on coal needs to be increased steadily over time.

Tough action is also needed to control of industrial pollution. Sunita Narain of the Centre for Science and Environment has been conducting a one-woman battle to ban the import of Pet coke, an exceptionally dirty fuel which is banned in the US, but which is freely imported by us (from the US) and used by many smaller industries. The use of Pet coke is banned in Delhi, and we can monitor domestic refineries to ensure that they don't sell the Pet coke they produce in Delhi. However, if large quantities are allowed to be imported, the ban on its use can only be enforced in Delhi by policing the consumers, which is near impossible. An outright ban on the import of this dirty fuel is a low-hanging fruit

Burning mixed municipal waste in Delhi is highly polluting. We need to shift within the next three years to an effective system of separating municipal waste into biodegradable waste which can be converted into compost and energy, recyclable waste including plastic which can be recycled, inert waste which can be converted into refuse-derived fuel for power generation, and residual non-combustible waste which has to go to scientific landfills. This is a challenge for the Delhi government which it should take on.

Since many ministries are involved, the ministry of environment should be tasked with (a) identifying the actions planned by different ministries, (b) estimating the effect of these actions on the trajectory of pollution, (c) determining whether the resulting trajectory is acceptable as a national commitment towards reaching the national target, and if not pushing for stronger action, and finally (d) monitoring progress on an agreed trajectory to see if pollution is indeed being reduced as projected. If progress is unsatisfactory, then the ministries have to go back to the drawing board.

Something along these lines would put us on a credible path to reducing pollution over time. It will take time, but at least we will know when we can start breathing easy. Anyone who doubts whether the costs are worth it should consider that researchers have concluded that if Delhi's air pollution could be lowered to the national standard, it would increase the life expectancy of Delhi's citizens by six years.

Montek Singh Ahluwalia was the deputy chairman of the erstwhile Planning Commission.

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