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More than 670 million Indians would breathe poor quality air in 2030 despite compliance with pollution control policies: CEEW-IIASA study

New Delhi (29 March 2019) – About 674 million citizens are likely to breathe air with high concentrations of PM 2.5 in 2030, even if India were to comply with its existing pollution control policies and regulations, according to an independent study released today by the Council on Energy, Environment and Water (CEEW) and the International Institute for Applied Systems Analysis (IIASA). Further, only about 833 million citizens (about half of India’s estimated population in 2030) would be living in areas meeting India’s National Ambient Air Quality Standards (NAAQS) in 2030. A failure to implement existing policies and regulations could increase these numbers significantly. However, aligning sustainable development policies with implementation of advanced emission control technologies could provide NAAQS-compliant air quality to about 85 per cent of the Indian population. The study was released at a CEEW Dialogue ‘On Air: Pathways to Achieving India’s Ambient Air Quality Standards’ held in New Delhi.

In 2015, more than half the Indian population – about 670 million citizens – were exposed to PM 2.5 concentrations that did not comply with India’s NAAQS for PM 2.5 ($40 \mu\text{g}/\text{m}^3$). Less than one per cent enjoyed air quality that met the World Health Organization (WHO) benchmark limit (of $10 \mu\text{g}/\text{m}^3$).

In January 2019, the government launched the National Clean Air Programme (NCAP), a five-year action plan to curb air pollution, build a pan-India air quality monitoring network, and improve citizen awareness. The Programme focuses on 102 polluted Indian cities and aims to reduce PM 2.5 levels by 20-30 per cent over the next five years. However, the CEEW-IIASA analysis suggests that NCAP needs to be backed by a legal mandate to ensure successful on-ground implementation of emission control measures. In the long term, NCAP also needs to be scaled up significantly to ensure that rapid economic growth and meeting the NAAQS are aligned.

Pallav Purohit, Research Scholar at IIASA and lead author of the study, said, “While current ambient PM 2.5 monitoring in India reveals high levels in urban areas, remote sensing, comprehensive air quality modelling and emission inventories suggest large-scale exceedances of the NAAQS also in rural areas. Pollution from rural areas is transported into the cities (and vice versa), where it constitutes a significant share of pollution. Therefore, coordination of urban, rural, and inter-state responses is critical.”

Hem Dholakia, Senior Research Associate, CEEW, and one of the authors of the study, added, “The health burden of air pollution is significant in India. Limited control of air pollution will aggravate this burden in future. The CEEW-IIASA study clearly shows that policy choices of today will impact air quality in future and its aftermaths. The Central and state governments must do more to align air quality, climate change, and sustainable development goals in a resource efficient manner.”

The CEEW-IIASA study also found that the Indo-Gangetic plain, covering parts of states such as Punjab, Haryana, Uttar Pradesh, Bihar, and West Bengal, has the highest population exposure to significant PM 2.5 concentrations. This is mainly due to the high density of polluting sources and reduced ventilation by the obstructing presence of the Himalayas. Citizens living in parts of Bihar, West Bengal, Chhattisgarh, and Odisha are also exposed to high levels of PM 2.5. The governments in these regions must design state-specific policies to comply with NAAQS and embrace a low-emissions growth model to ensure better air quality for its citizens.

Further, the study highlighted a stark variance in factors contributing to air pollution across the states. Solid fuel, including biomass combustion for residential cooking, is the largest contributor in major states of the Indo-Gangetic Plain. However, in Delhi and Goa, it contributes only a small amount due to enhanced access to clean fuels in these states. Instead, NO_x emissions from transportation are major contributors to air pollution in these two states. Similarly, SO₂ emissions from power plants are dominant contributors to air pollution in Haryana and Maharashtra. Every state government must commission detailed scientific studies to better understand the sources contributing to air pollution in their cities and develop action plans accordingly.

“A large share of pollution can be addressed if poor households that currently use solid fuels and cash-strapped local bodies are given a helping hand in,” says Markus Amann, Program Director of Air quality and Greenhouse Gases (AIR) at IIASA.

Another challenge for many states is that emission sources that are outside their immediate jurisdiction contribute significantly to ambient pollution levels of PM 2.5. For example, transboundary transport or crop burning are sources of secondary pollution in some states. Such states could achieve significant improvements in air quality only with a region-wide coordinated approach to reduce air pollution and strict on-ground enforcement to ensure compliance to emissions control measures.

In 2015, air pollution emission control costs accounted for about 0.7 per cent of GDP. The CEEW-IIASA study found that this share will increase to 1.4 – 1.7 per cent by 2030. By 2050, with an almost tenfold increase in GDP, air pollution controls will account for 1.1 – 1.5 per cent of the GDP, or 1.5 per cent of the 2015-to-2050 increase in economic wealth (GDP).

The CEEW-IIASA study also recommended focusing on energy efficiency, enhanced public transport, increased use of cleaner fuels, improved agricultural production practices, and replacement of coal with natural gas and renewables in the power and industrial sector to achieve better air quality and meet multiple Sustainable Development Goals (SDGs).

[Link to the study](#)

<https://www.ceew.in/publications/pathways-achieve-national-ambient-air-quality-standards-naaqs-india>

About CEEW

The Council on Energy, Environment and Water (CEEW) is one of South Asia’s leading not-for-profit policy research institutions. The Council uses data, integrated analysis, and strategic outreach to explain – and change – the use, reuse, and misuse of resources. It prides itself on the independence of its high-quality research, develops partnerships with public and private institutions, and engages with wider public. In 2019, CEEW once again featured extensively across nine categories in the ‘2018 Global Go To Think Tank Index Report’. The Council has also been consistently ranked among the world’s top climate change think tanks. Ceew.in | Twitter @CEEWIndia

About IIASA

The International Institute for Applied Systems Analysis (IIASA) is an international scientific institute that conducts research into the critical issues of global environmental, economic, technological, and social change that we face in the twenty-first century. The institute’s findings provide valuable options to policymakers to shape the future of our changing world. IIASA is independent and funded by prestigious research funding agencies in Africa, the Americas, Asia, and Europe. www.iiasa.ac.at