

FOREWORD

Most of the pollution monitoring of industries in India is done manually and once every few weeks by laboratories hired by the industries themselves. The reports are then submitted to the state pollution control boards (SPCBs) as a self-certificate of compliance. SPCBs do very little pollution monitoring themselves. This traditional system of pollution monitoring and reporting from industries is now widely considered outmoded. The pollution monitoring by industry-hired laboratories lacks credibility; and the want of capacity within SPCBs to monitor regularly fails to serve the purpose of compliance. Most industries, therefore, flout norms.

It is in this context that the decision of mandating the Continuous Emission Monitoring System (CEMS) in seventeen categories of industries was hailed as a breakthrough initiative by Ministry of Environment, Forest and Climate Change (MoEF&CC) and Central Pollution Control Board (CPCB). But over the past three years, the CEMS programme has gone through many major ups and downs. From being heralded as a grand initiative, to being labeled as an appalling failure. The reason for this was that the CEMS programme was adopted hurriedly without putting in place adequate guidelines and infrastructure required for its successful implementation.

The most crucial requirement are detailed guidelines on CEMS which can help the industries, SPCBs, laboratories, technology suppliers and other relevant stakeholders in developing basic understanding on how the government plans to implement CEMS. Until August 2017, when CPCB published a guidelines document, this gap badly affected the implementation of CEMS.

Assuring quality of CEMS through certification and performance check during installation is another important aspect needing policy attention. Unfortunately, India made a major mistake by allowing uncertified CEMS devices. Till date, there is no indigenous certification system. In addition, we have not set up a system to empanel laboratories to carry out third-party calibration and verification of CEMS installations in industries. This is extremely important to ensure the integrity of the system.

Defining SPCBs role during installation and operations clearly is equally important. For this, the manpower and infrastructure capacity of SPCBs needs to be adequately build.

Most developed nations such as UK, Germany, France, and the US have adopted CEMS decades ago. Its implementation has not only enabled these countries to drastically reduce pollution levels, but also helped them set up regulatory systems for introducing pollution charges and many other economic instruments to control pollution. China also adopted CEMS

in 2003. But these countries went through a systematic process before CEMS became an important component of their pollution monitoring and enforcement. We will have to follow a similar path.

We believe that CPCB has adopted a good strategy to get sufficient experience with CEMS before it is used for compliance and enforcement. We think that this experience can be gained in the next three years and requisite infrastructure and capacity can be put in place to make CEMS the primary tool for compliance and enforcement. Some amendments in laws, like defining 'compliance', both for the equipment's and the pollution norms, would also be required.

It is clear that the capacity of regulators, industries, and other stakeholders must be enhanced. Every stakeholder has an important and defined role to play that requires them to have sufficient knowledge and skill. They will need hand-holding and training throughout the CEMS implementation process.

This **CEMS Technical Guidance Manual** published by Centre for Science and Environment covers all the major aspects of a successful CEMS programme. It explains the available technology options, their suitability for an industry and the kind of certification, calibration and verification required. The manual also explains data acquisition, handing and compliance check mechanism that we need to put in place to ensure credibility of the system. CEMS regulations and best practices in Europe, US and those proposed in India has also been discussed in the manual. I believe the stakeholders will find this document useful and helpful for proper implementation of CEMS in India.

We cannot afford to get CEMS wrong. All the basic requirements that are missing till date need to be provided. To avoid any further delay, we need to have a time-bound implementation strategy so that the gaps are filled and the mistakes are corrected. We strongly believe that if implemented successfully, CEMS will herald a new era of environmental governance in India. CEMS is the route through which India's environmental regime can be catapulted from 20th to the 21st century.

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