# Abstract

**Abstract Title:** Emission Regulations and Future Monitoring Challenges

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**Abstract**

According to a report published earlier in the year 2015 by the World Health Organisation, air pollution now kills approximately seven million people annually, worldwide. This accounts for as much as one in eight deaths, and is by far the single biggest environmental health risk. Thus, air pollution, emissions regulations and air quality monitoring in ambient and at source has been gaining importance in the recent past and will continue to rise in the coming days.

With the advent of Continuous Emissions Monitoring (CEM), the task of keeping an eye on the air emissions has become easy but at the same time complex too. CEM involves many activities for determining and reporting emissions from stationery sources. The major industrial units like Cement Plants, Power Plants, Steel Plants, and Incinerators etc. are required to monitor and report emissions on a regular basis. This emissions data can provide a real time continuous record which can be used for a variety of purposes.

The Environmental regulators worldwide have set and will continue to set Ambient Air Quality Standards that are incredibly low for certain air pollutants. Incredibly low ambient air standards equate to incredibly low emissions limits for emission units that may contribute regulated pollutants to the ambient air. Sometimes, sources are required to demonstrate compliance with these incredibly low emission limits, and the test methods commonly used to demonstrate compliance are not sensitive enough to do so in many cases.

Thus, vendors that provide the Continuous Emissions Monitoring System (CEMS) will be challenged with ensuring that they have ways to meet standards, and the onus will be largely on them to do so. As this evolution continues, finding ways to prove that emission rates are correspondingly low will be more and more of a challenge.

If the compliance or environmental monitoring involves less common or some specific pollutants, new methods, and smaller amounts of pollutants, CEMS vendors will have an opportunity to differentiate themselves from one another, and industries will have to be more careful with the suppliers they choose.

For example, if a source must determine mercury emissions (a much less common pollutant), using a relatively new method, on a process that involves some exotic new way of combusting biomass (which is another unknown) and the compliance line is drawn at a few parts per trillion which would be at the edge of what the existing method can do, would be a real challenge in the days to come.

**Conclusion** :

Thus, it is imminent that the emissions regulations are going to be stringent and incredibly low for certain air pollutants for better control and improved overall air quality. This in turn will pose a challenge for the existing emissions monitoring methods and systems to ensure that they have ways to monitor (which requires more precise, sensitive and accurate measurement and at times new and innovative technology and methodology for lower thresholds) and show that the industrial emissions meet the standards. And hence, these challenges will do is to render CEMS to be less of a commodity and more of a value-driven service.

**Keywords** — *Continuous Emissions Monitoring (CEM), Emissions Regulations, Environmental Regulators, Future Monitoring Challenges*

**Professional Biography**

Chirag Bhimani worked with Gujarat Pollution Control Board (GPCB) since 1996 as an Assistant Environmental Engineer and was promoted to Deputy Environmental Engineer in 2002 and was lastly working as Deputy Environmental Engineer at GPCB Head Office in Gandhinagar. He was the Head of Information Technology Division and also looked after Bhavnagar, Junagadh, Palanpur and Porbandar Area as a Unit Head and coordinator – convener for Continuous Online Monitoring System (CMS) & Emissions Trading Scheme (ETS) for Particulate Matter (PM) and for Preparation of Best Available Techniques Reference (BREF)Document at GPCB.

His last assignment at GPCB was to advise and implement strategies for the management of environmental issues impacting land, air, water and people including air pollution, water pollution, noise pollution and wastes. His work included to review, to make recommendations and to decide on the applications for statutory approvals such as Consent To Establish, Consent To Operate, Hazardous Waste Authorisation etc. and, where appropriate, to recommend conditions to be applied to the statutory approvals. He also reviewed, made recommendations and decided on the reports regarding environmental compliances and, where appropriate, recommended and initiated legal actions and/or punitive actions against the defaulters. He was responsible to evaluate, suggest solution and strategies for specific environmental problems.

His work as coordinator for CMS was to strategies, develop and implement Continuous Online Monitoring System in Gujarat including the necessary infrastructure for Water Emissions, Air Emissions & Ambient Air Quality and the usage of this data for the pilot project on ETS.

The BREF Document is being prepared in collaboration with German Federal Environment Agency (UBA) and Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH which is first of its kind of effort in India and Chirag is the coordinator-nodal officer for the

project. He has independently created and was managing the BREF Information System (BIS) which has been applauded by the German counterparts.

Chirag was the Technical Committee Member representing Gujarat State in the Pilot Project - “Emission Trading Scheme for Particulate Matter from Stationary Sources in India” initiated by Ministry of Environment, Forests and Climate Change, Government of India. The major contributions have been for the preparation and development of CEMS Guidelines and Design of Format of Baseline Survey and its implementation. His major interest in the project is Market Design of ETS.

He has changed his work profile recently and now he works as an independent Environmental Advisor and Consultant for industries in areas of Enviro-Legal matters as well as for CMS, ETS and BREF. His interest for work areas also include the National Clean Air Program (NCAP) and similar other matters related to Air Quality and Emissions which are directly and indirectly linked with CMS.

Chirag has done his Masters in Technology in Environmental Engineering and is currently pursuing a degree in law.



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