

EMISSION MONITORING IN INDIA:

CEMS

ENSURING VALID DATA FOR EFFECTIVE
EMISSION REDUCTION STRATEGIES

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INTERNATIONAL CENTRE FOR
SUSTAINABLE CARBON

Presentation outline

- Who the ICSC are and what we do
- The USDOS project
- The importance of CEM data
- The challenge for India



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Technology Collaboration Programme
by **iea**

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LESLEY SLOSS
FRSC FIENVSCI CENV

International Project
Manager



WHO ARE WE ?



INTERNATIONAL CENTRE FOR
SUSTAINABLE CARBON

Technology Collaboration Programme

by **iea**

- We are dedicated to providing independent information and analysis on how coal can become a cleaner source of energy, compatible with the UN Sustainable Development Goals
- The International Centre for Sustainable Carbon (ICSC) is part of a network of autonomous collaborative partnerships focused on a wide range of energy technologies known as Technology Collaboration Programmes (TCPs)
- The TCPs are organised under the auspices of the International Energy Agency (IEA), but are functionally and legally autonomous
- We are funded by national governments (contracting parties) and by corporate industrial organisations (sponsors)

INTERNATIONAL CENTRE FOR **SUSTAINABLE CARBON**



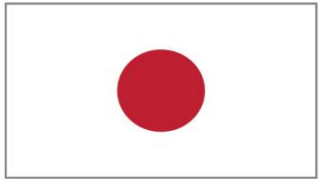
ITALY



AUSTRALIA



BEIJING RESEARCH
INSTITUTE OF COAL
CHEMISTRY



JAPAN



SOUTH AFRICA



USA



ELECTRIC POWER
PLANNING & ENGINEERING
INSTITUTE OF CHINA

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ICSC ACTIVITIES

- Independent, peer-reviewed studies, disseminated through our web-based system
- Regular webinars and blogs that support the published studies
- Outreach activities which focus on sustainable energy issues, including capacity building and training
- Major focus on support for developing countries and industrialising nations



**US STATE DEPARTMENT
FEDERAL ASSISTANCE AWARD**



***CAPACITY BUILDING IN SOUTHEAST
ASIA TO REDUCE MERCURY AND
OTHER POLLUTANT EMISSIONS FROM
THE COAL COMBUSTION SECTOR***



<https://www.sustainable-carbon.org/outreach-programme/>

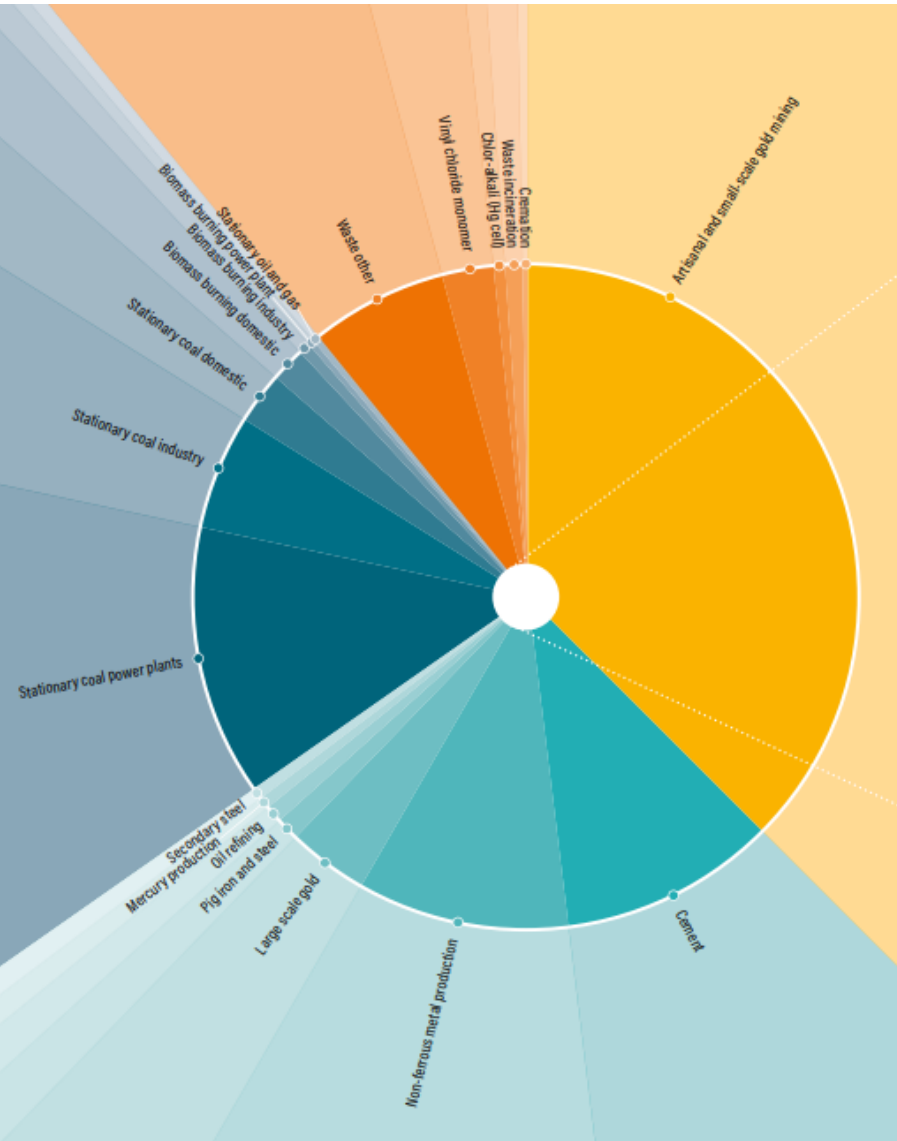


COAL IS A SIGNIFICANT SOURCE OF MERCURY EMISSIONS

Breakdown of global results by sector

As with the regional breakdown, the breakdown of 2015 anthropogenic mercury emissions by sectors is very similar to that of 2010. The predominant source sector is artisanal and small-scale gold mining (about 38%) followed by stationary combustion of coal (about 21%). These are followed by emissions from non-ferrous metal production (about 15%) and cement production (about 11%). Emissions associated with disposal of mercury-added product waste (7%), stationary combustion of other fuels including biomass (3%), ferrous-metal production (2%), and other sources (2%) make up the rest.

► Proportions of global emissions of mercury to air from different anthropogenic source sectors in 2015.





MINAMATA CONVENTION ON MERCURY

| Why mercury?

Mercury is in the top 10 of chemicals of major public health concern according to the World Health Organization. By enhancing the reduction of mercury pollution, the Convention protects the environment and the lives of millions of people around the world.



| Minamata Convention in figures



137
PARTIES



142
FOCAL POINTS



84%
REPORTING RATE

PROJECT AIM:

TO FACILITATE A TECHNOLOGY LEAP

TO EMPOWER TARGET REGIONS TO FAST-FORWARD
TOWARDS COST-EFFECTIVE MERCURY REDUCTION
STRATEGIES WITHIN EXISTING AND IMPENDING
ENERGY TRANSITION PLANS

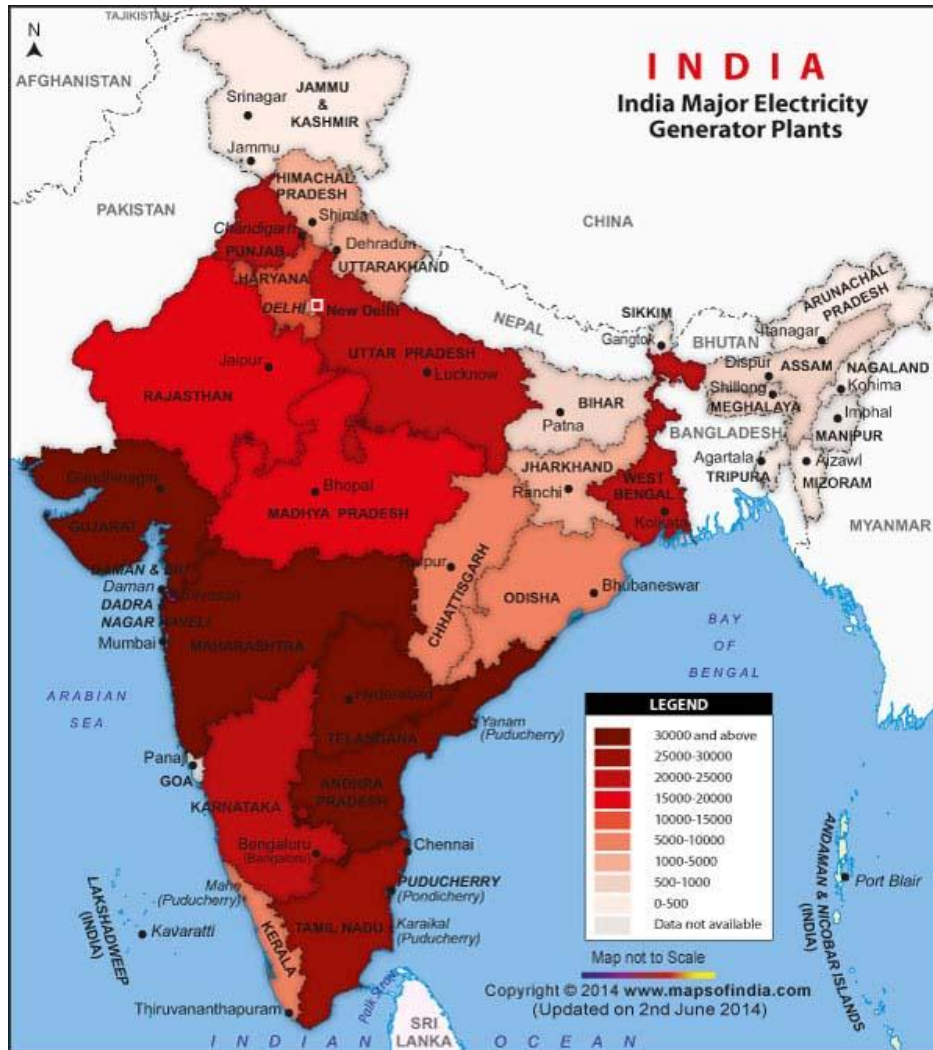




India – three pillars of focus

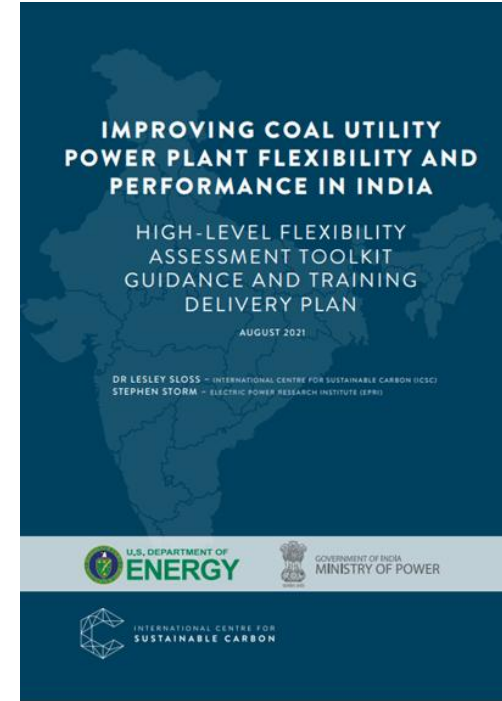
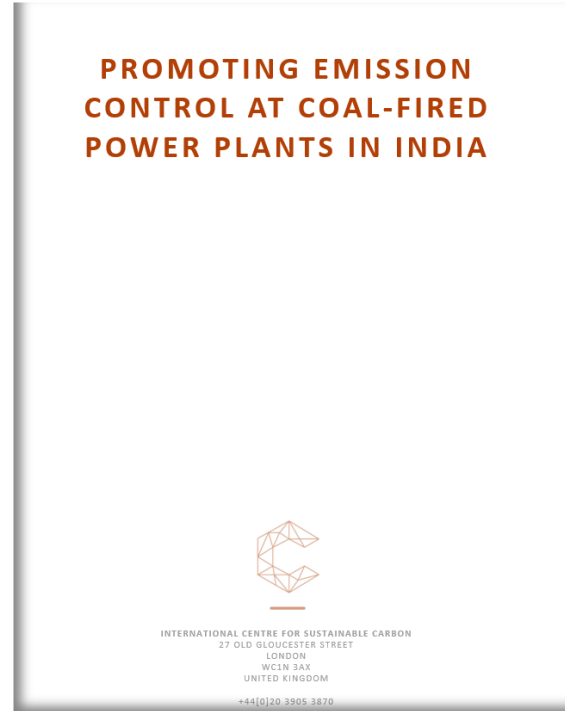
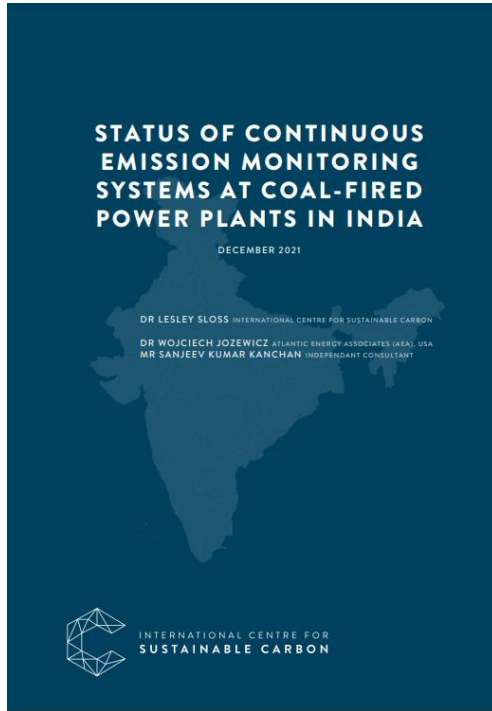
Three pillars of work in India

- Pillar 1: emissions monitoring - CEM
- Pillar 2: emission control and ash management
- Pillar 3: flexibility of plant operation





Complete set of workshops



11-14 Jul Bhubaneswar
18-21 Jul Bhopal
2022 Nov TBC
2022 Dec TBC

Locations and dates TBC

13-17 Jun Hyderabad
20-24 Jun New Delhi
2022 Oct Raipur (TBC)
2022 Nov (TBC)

PILLAR 1 – EMISSION MONITORING IN INDIA





EMISSION DATA ARE VITAL

- to determine ACTUAL emission values rather than estimates from emission factors
- to evaluate the ongoing threat to population health from coal-fired plants
- to identify plants of particular concern (such as inefficient plants in densely populated areas or areas already facing significant air quality issues)
- to allow plant operators to understand their own plant performance and to determine appropriate action to reduce emissions and to meet the emission standards

FULL DESK REPORT AVAILABLE NOW

- Review of current emission legislation in India
- Outline of national CEM requirements
- Summary of internet-based reporting system
- Assessment of status of CEM operation
- Proposal for delivery of training and capacity building

STATUS OF CONTINUOUS EMISSION MONITORING SYSTEMS AT COAL-FIRED POWER PLANTS IN INDIA



DR LESLEY SLOSS INTERNATIONAL CENTRE FOR SUSTAINABLE CARBON

DR WOJCIECH JOZEWICZ ATLANTIC ENERGY ASSOCIATES (A E A), USA
SANJEEV KUMAR KANCHAN INDEPENDENT CONSULTANT

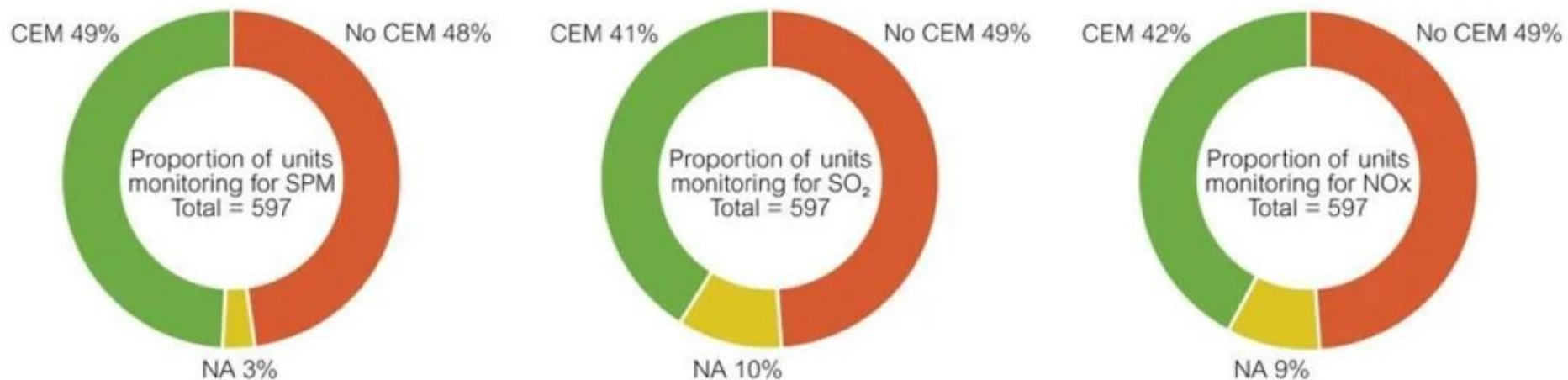


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CEM STATUS IN INDIA (2020 DATA)

	Units reporting	Units with reporting issues	Units not reporting or data not available publicly*
PM CEM	291 (49%)	7 (1%)	301 (50%)
SO ₂ CEM	248 (41%)	57 (10%)	294 (49%)
NO _x CEM	242 (40%)	50 (9%)	307 (51%)

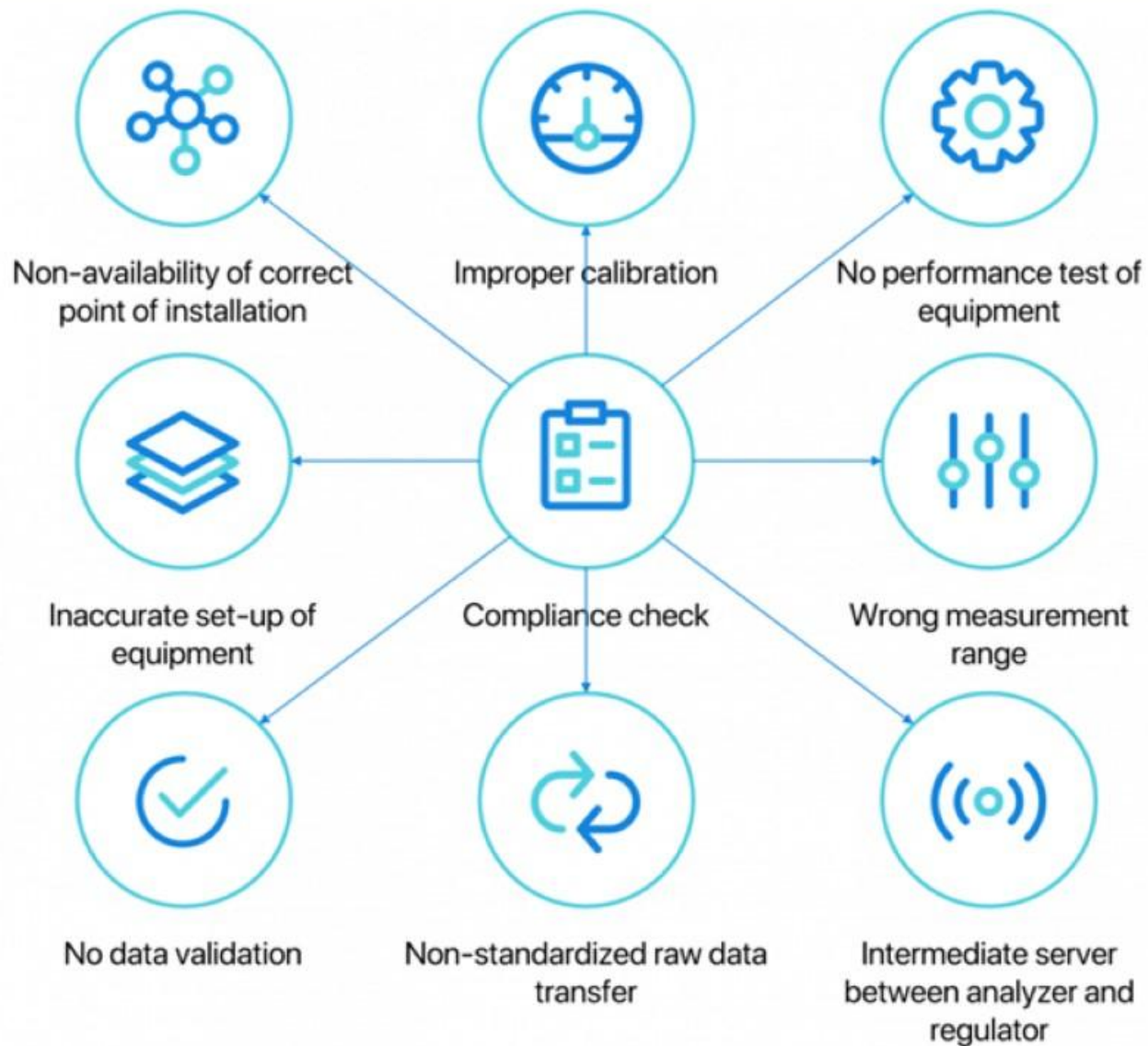


- Units reporting average annual concentrations
- Units reporting no data (due to no CEM involved or no data reporting activity)
- Units admitting issues with reporting data

CEM = continuous emission monitoring systems



ISSUES IDENTIFIED BY INDIAN STAKEHOLDERS





THE CHALLENGE FOR INDIA

India has new emission limits for SO₂, NO_x, PM and mercury and Indian sources must be able to accurately measure emissions from all stacks to confirm compliance

India currently has no national standard methods for performing emissions monitoring, there is no standardised training scheme for emission monitoring staff

This workshop brings experts from Europe and the USA to share experience in CEM operation, warning of common challenges and informing on best practice



THE TRAINING FORMAT

- Presentations from international and national experts to cover all areas of CEM installation and operation
- Hands-on experience during the site visit
- Time for questions and answers with the experts
- A final “exam” to confirm that you have received CEM training
- We need your feedback to improve our training

We MUST have you registered in order to receive your certificate



Acknowledgments

This project acknowledges that the US DOE project supported this workshop and that it has been generously co-hosted by the Odisha State Pollution Control Board in Bhubaneswar





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THANK YOU FOR LISTENING

ANY QUESTIONS?