



INTERNATIONAL CENTRE FOR
SUSTAINABLE CARBON

Technology Collaboration Programme
by IEA

THE INTERNATIONAL CENTRE FOR SUSTAINABLE CARBON

CEMS CAPACITY BUILDING PROGRAMME FOR COAL-FIRED POWER PLANTS IN INDIA: CALL FOR CEM EXPERTS

The International Centre for Sustainable Carbon (ICSC), a technology collaboration programme, organised under the auspices of the International Energy Agency (IEA), is cooperating with the US Department of State (USDOS) to deliver training and capacity building on continuous emissions monitors (CEM) for coal-fired power plants in India. The focus is on the valid and accurate measurement of emissions of particulate matter (PM), SO₂, NO_x and mercury. This is a call for experts to identify qualified individuals to bring their expertise to the upcoming training programmes planned for four regions in India. The Indian audience will include power plant managers and operators, environmental regulators, service providers, and all other key stakeholders involved with the selection and application of CEM in India.

Background

The ICSC has recently produced a report '*Status of Continuous Emission Monitoring Systems at coal-fired power plants in India*' (accessible at <https://www.sustainable-carbon.org/download/40177/>). The report evaluates the status of CEM implementation in the coal-based power sector in India focussing on both technical challenges and reporting issues as well as regional innovations by local State Pollution Control Boards (SPCB). The report, which has the approval of organisations such as the NTPC Business School, Madhya Pradesh PCB, and the Confederation of Indian Industry (CII), concludes that a training and capacity building programme suited to the Indian situation must build on the following facts:



- The coal-based power sector has installed CEM for PM, SO₂, and NO_x on most plants. A few have installed CEM for mercury.
- India accepts both the EU type certified (MCERTS) systems and non-certified systems which pass the US Environmental Protection Agency (USEPA) performance tests.
- An indigenous certification system is still under development and there is scope for expert input.
- The accreditation and capacity of third-party laboratories to do CEM installation, calibration and performance checks are lacking and so there is a need for guidance from international experts.
- India's Data Acquisition and Handling System and its Remote calibration system are state-of-the-art. However, without valid data in these systems, their efficacy is limited.
- CEM data are currently used somewhat informally by regulators to monitor polluting sources, but India will soon apply CEM data officially for compliance monitoring.
- Most international commercial CEM systems are available in India. However, the market is still growing for both repairs/upgrades in existing large industries, as well as CEM installation across a significant fleet of medium-scale industries.
- Due to the new emission limits 'norms' for mercury, the requirement for mercury monitoring is imminent in regions such as Madhya Pradesh (where the first workshop will take place) and will eventually spread nationwide.
- Plant operators and state regulators have basic knowledge of CEM application but training on operation and maintenance, and quality assurance and control is needed. Indian stakeholders are aware of the challenge and are keen to progress.

IN SUMMARY – THE INDIAN CEM MARKET IS SIGNIFICANT AND IS GROWING. STAKEHOLDERS NEED TRAINING AND CAPACITY BUILDING IN EFFECTIVE CEM IMPLEMENTATION. INTERNATIONAL VENDORS AND CONSULTANCIES HAVE AN OPPORTUNITY TO EXTEND THEIR OPERATION INTO THE REGION BY WORKING DIRECTLY WITH THE STAKEHOLDERS TO UNDERSTAND THEIR NEEDS



Aim & Plan

Based on the ICSC investigation, a training programme has been designed to address the challenge in India. The programme will include the following:

- Brief, revisional sessions on CEM technologies and operation principles for PM, SO₂, NO_x, flow, O₂, and CO₂. Knowledge building on mercury and its monitoring will be included.
- Fundamentals of EU-type quality assurance (QAL) guidelines, covering the tests and checks involved.
- Fundamentals of the US-based performance evaluation methods (CFR Part 75, 60), covering the tests and checks involved.
- Correct installation and set-up of CEM devices on coal plants – covering issues and solutions and including problem-solving case studies.
- Correct maintenance processes, practices, challenges, and solutions – with case studies.
- Interpretation and application of CEM data for plant performance – with case studies.
- Hands-on demonstrations (at a power plant) to demonstrate practical skills and problem-solving.
- Significant Q&A, round-table discussion, and problem-solving sessions.
- The trainees will be given certificates of course completion and the training materials will be left as legacy documents for future reference.

To promote the improvement in CEM application in India, the ICSC is facilitating four regional workshops over the next 9–12 months. The workshops are being organized in collaboration with selected state pollution control boards. The training will be led by Indian and overseas experts from the USA and EU. The attendees will include regulators and ministries but, more importantly, utility staff and other end-users who are directly involved with environmental monitoring at and around coal-fired plants. These workshops, which will be free to all delegates, will take place over 3 to 4 days. At the end of each training programme, an interactive session will be led by the ICSC to engage senior government officials, ministers and stakeholders involved in policy development to encourage policy improvement.



Proposed dates and locations

| | |
|-------------------------------|--------------------------|
| Bhopal, Madhya Pradesh | 11–15 July 2022 |
| Bhubaneswar, Odisha | 18–22 July 2022 |
| New Delhi | 20–24 February 2023 |
| Visakhapatnam, Andhra Pradesh | 27 February-3 March 2023 |

Call for experts

To provide the best possible training for Indian delegates, we are looking to identify several international experts (1–3) to attend each event to deliver training. We are looking for stack testers or vendors who have either MCERTS or QSTI training and/or who have many years of experience with stack monitoring at coal-fired utilities. We would require you to be very active during the whole event, presenting as necessary but also actively engaging in question-and-answer sessions and round table discussions.

Priority will be given to experts who can attend two workshops (both events in July 2022 or both events in February/March 2023) within one trip – attending two workshops back-to-back will make planning the meeting agendas far simpler and will provide more consistent training.

We would actively encourage vendors with bases in India to send local experts to provide hands-on training and to actively engage in round table discussions and question-and-answer sessions.

Notes:

- Only qualified technical experts and credible vendors are invited to apply.
- The final training agenda will be fixed by the SPCB and ICSC, based on needs identified and skills available.
- Presentations must not be commercial and will be pre-screened by the coordinator and partner SPCB.
- Vendors are welcome to showcase equipment in round-table discussions and side-meetings.
- The experts are encouraged to actively network with participants to initiate personal and commercial discussion beyond the training session.



APPLICATION FORM – CLOSING DATE 27TH MAY 2022

(PLEASE COMPLETE THIS PAGE AND RETURN IT TO LESLEY.SLOSS@ICSCARBON.ORG BY 27TH MAY)

Name:

Company/affiliation:

Address:

Phone Number:

Email:

Which workshop are you volunteering for? (*Please **highlight** or **underline***)

(*Attending 2 workshops back-to-back is encouraged as this reduces the need for agenda adjustments.*)

2022

- Bhopal, Madhya Pradesh 11-15 July 2022
- Bhubaneswar, Odisha 18-22 July 2022

2023 (*final dates and venues TBC*)

- New Delhi 20-24 February 2023
- Visakhapatnam, Andhra Pradesh 27 February-3 March 2023

What can you bring to the event (*please **mark/tick** as appropriate*)?

- QSTI/MCERTS training
- EU-type certification system, tests, and processes
- US EPA-type performance tests and processes
- Laboratory and field tests for CEM
- Experience with emission monitoring at coal-fired utilities
- Operation and maintenance of CEM
- Case studies of CEM implementation, testing, calibration problem solving and hands-on experience
- Experience with providing training such as this elsewhere

Feel free to include a CV or additional information.

Any required funding: (*The project has a small budget available to facilitate the attendance of selected experts. Please let us know what funding might be required if you are selected to attend.*)