



INTERNATIONAL
CENTRE FOR
**SUSTAINABLE
CARBON**

Technology Collaboration Programme
by **iea**



Madhya Pradesh Pollution
Control Board

Environment Surveillance Centre, MPPCB

TRAINING WORKSHOP ON

BEST PRACTICES AND HANDLING OF CEMS IN EMISSION MONITORING

19 – 22 JULY 2022

Venue: LCA Auditorium

Paryavaran Parisar, E-5, Arera Colony, Bhopal, M.P. 462 016



DAY 1 – 19 July 2022

Topics	Speakers	Time
Registration	MPPCB, ICSC	09:00-10:00
Inauguration		
Welcome address	Shri Rajendra Chaturvedi Scientist, MPPCB	10:00-10:10
Opening remarks	Shri A A Mishra Member Secretary, MPPCB	10:10-10:15
Keynote address	Shri Aniruddhe Mukherjee, IAS Principal Secretary-Environment (Govt of Madhya Pradesh) Chairman- MPPCB	10:15-10:25
Address by chief guest	Shri Sanjay Dubey Principal Secretary- Energy (Govt of Madhya Pradesh)	10:25-10:40
Vote of thanks	Dr Lesley Sloss, International Project Manager, ICSC	10:40-10:45
Tea break		
About the programme CEMS in the coal-fired power plants - report and findings	Dr Lesley Sloss, International Project Manager, ICSC	11:15-11:45
Overview of CEMS and programme structure Basics of CEMS, experiences in India and challenges	Sanjeev K Kanchan, Principal Consultant, ICSC	11:45-12:15
CEMS guidelines in India Takeaway for equipment selection, suitability, correct implementation	J S Kamyotra, Ex-MS CPCB	12:15-13:00
Lunch break		
Quality assurance and control for CEMS - USA system Performance test requirements, tests procedures, test for quality assurance, quality control - USA	R Sean Warden, QSTI Trainer, USA	14:00-14:45
Quality assurance and control for CEMS - European system QAL system, AST Laboratory-based and field test procedures, infrastructure requirements	Roland Zepeck, IBD, Germany	14:45-15:30
Tea break		
Role of laboratories in CEMS Laboratory jobs in CEMS, CEMS empanelment/accreditation	J S Kamyotra, Ex-MS CPCB	16:00-16:30
CEMS implementation in EU Experience of CEMS, regulation and implementation, new trends	David Graham (online), Tech Consultant, Uniper	16:30-17:00
CEMS implementation in USA Experience of CEMS, regulation and implementation	Jeff Ryan (online), Sr Scientist, USPEA	17:00-17:30
Tea break and end of day		
Workshop dinner	7:30 pm onwards	

DAY 2 – 20 July 2022 9:30 am onwards

Topics	Speakers	Time
CEMS selection, PM and gaseous - reference to thermal power plant Guidance for specification, tendering, selection, after sales support	Sankar Kannan, SICK	09:30-10:15
PM CEMS fundamentals - reference to thermal power plant suitability and limitations Maintenance - alignment, cleaning, calibration factor etc	R Sean Warden, QSTI Trainer, USA Roland Zepeck, IBD, Germany Sanjeev K Kanchan, Principal Consultant, ICSC	10:15-11:00
Tea break		11:00-11:30
Gaseous CEMS fundamentals - reference to thermal power suitability and limitations - PM, SO ₂ , NO _x , O ₂ , CO ₂ Maintenance - span, drift, alignment, cleaning etc and solutions	Roland Zepeck, IBD, Germany	11:30-12:15
CEMS installation and setting - reference to thermal power plant Correct installations - PM, SO ₂ , NO _x , O ₂ , CO ₂ , Hg, correct setting, data connectivity and standardisation	R Sean Warden, QSTI Trainer, USA	12:15-13:00
Lunch break		13:00-14:00
PM CEMS calibration SRMs - BSEN 13284-1, IS: 11255 part 1 or EPA method 17 or EPA method 5 or BS ISO 9096:2003, calibration process	Ashish Gupta, Director, Envirotech	14:00-15:30
Tea break		15:30-16:00
Gaseous CEMS calibration - reference to thermal power plant Calibration system setup - tubing and cylinder set-up, calibration check, remote calibration	R Sean Warden, QSTI Trainer, USA	16:00-16:45
Mercury monitoring - reference to thermal power plant Suitability, limitations, CEMS, sorbent-trap, maintenance issues and solutions	Roland Zepeck, IBD, Germany	16:45-17:30
Tea break and end of day		

DAY 3 – 21 July 2022

(Board bus from 7:30 am)

Topics	Speakers	Time
Bus departs to plant site	MPPCB	08:00-11:00
Programme at plant Tea and refreshments Brief introduction and safety instructions	Plant/MPPCB	11:00-12:00
Demonstration of PM and gaseous monitoring Guide 1 - two groups (each for 20 mins) - PM monitoring Guide 2- two groups (each for 20 mins) - Gaseous monitoring	Ashish Gupta Sankar Kannan R Sean Warden Roland Zepeck	12:00-14:00
Lunch break		13:00-14:00
Demonstration continues		14:00-16:00
End of site visit Closing meeting, vote of thanks	MPPCB, ICSC	16:00-16:30
Bus returns from plant to accommodation	MPPCB, ICSC	16:30-17:30
End of day		

DAY 4 – 22 July 2022 9:30 am onwards

(Individuals to carry laptops/iPads (for assessment))

Topics	Speakers	Time
Data acquisition, handling and analysis DAS architecture, regulatory requirement, data analysis	Aditya Sharma, (tbc) Scientist E, CPCB	09:30-10:30
MPPCB data handling system System, experiences and lessons	Pracheer Dixit, MPPCB	10:30-11:00
Tea break		11:00-11:30
Feedback, assessment, certificates and closing		11:30-12:30
Summary, assessment and certificates	ICSC	
Closing of event	MPPCB	
Vote of thanks	MPPCB, ICSC	12:30-13:00
Lunch Break and end of programme		13:00-14:00