



MAKING A GREENER FUTURE

WORKSHOP

**DECARBONIZING IRON & STEEL INDUSTRY
FOR SUSTAINABLE STEEL MAKING &
MITIGATING CLIMATE CHANGE**



29 SEPT - 1 OCT 2023 (3 Days)

Friday to Sunday



**Hotel Babylon International,
VIP Airport Road, Raipur, C.G.**

ORGANIZED BY

Environment Monitoring Training & Research Centre

INDUSTRY PARTNER

Jayaswal Neco Industries Limited

ASSOCIATE PARTNERS

Chhattisgarh Sponge Iron Manufacturers Association (SIMA)

Chhattisgarh Sponge and Steel Manufactures Association



Introduction

The consequences of global warming, caused by emission of Green House Gas like CO₂, N₂O, CH₄, etc) is enormous and the world community has pledged to progressively reduce CO₂ emissions in order to achieve net zero emissions in different time frame. India has committed to achieve net zero emission by 2070. The temp rise is phenomenal in the last two decades and stood at 0.89°C in 2022.

Paris Agreement (2015) aims to bring down the global temperature levels by 1.5°C, relative to preindustrial times. It is guided by the principle of Common but Differentiated Responsibilities. It means that all nations are responsible for climate change, but not equally responsible. Paris Agreement mentions reducing CO₂ emissions by 20%, increasing the renewable energy market share by 20%, and increasing energy efficiency by 20%. In the Glasgow Climate Pact (COP 27 - 2022), the member nations reaffirmed their commitment to take action as mentioned in the Paris Agreement to limit the increase in global temperatures to well below 2°C and try to limit the increase to 1.5°C.

Decarbonization of the industrial sector is key to addressing the climate crisis and achieving economy-wide net zero emissions by 2070. Decarbonizing the steel industry will require a combination of technological and policy changes. In October 2020, the International Energy Agency (IEA) released its Iron and Steel Technology Roadmap. 7% (2.6 Gt CO₂) of total global emission is generated by the Energy sector. 8% global energy demand is consumed by Iron & Steel sector.

Govt of India is committed to phase down coal usage - India pledged to draw half its energy requirement from renewable sources by 2030. India also pledged to reduce one gigaton (10⁹ tons) GHG emissions through forest by 2025. By 2030, all steel plants will use new technologies for steel production, particularly energy efficient technologies and decarbonisation.

It has been observed that there is a growing influence of investors in driving action on climate change. Institutional investors are incorporating climate considerations into their investment strategies. Standardised transparent disclosures by an industry transforms into a resilient financial system. SEBI has introduced a standardized and transparent ESG framework named Business Responsibility and Sustainability Reporting (BRSR). BRSR is bench marked to global reporting system such as Global Reporting Initiatives (GRI). SEBI has

mandated the top 1000 listed companies (by market cap) to make filings as per the BRSR in the standardized format for year 2022-23 onwards.

Indian Iron and Steel Industry

India is the second largest producer of steel in the world (124.8 MT (Million Tons) in 2022), after China (1010 mT in 2022). Iron and steel sector is hard to decarbonize. CO₂ emissions from iron and steel sector for the year 2016 was 135.42 MT (production was 95.48 MT), that rose to 267.4 MT CO₂ in 2021 (production was 104 MT). The CO_{2e} emissions per ton of crude steel in 2020 was 2.6, 2.8 and 3.0 from BF-BOF route, DRI-EAF/IF route and DRI-IF (small ones) route respectively. The target CO_{2e} emissions per ton of crude steel in 2030 is 2.2 - 2.4 from BF-BOF route and 2.6 - 2.7 from DRI-EAF/IF route.

Ministry of Steel is committed to Net-Zero target by 2070. Towards this, in short term (FY 2030), reduction of carbon emissions in steel industry through promotion of energy and resource efficiency, renewable energy etc. is the focus. For the medium term (2030-2047), Green Hydrogen and Carbon Capture, Utilisation and Storage (CCUS) are the focus areas. For long term (2047-2070), technological innovations can help achieve the transition to net-zero. Through innovation, low carbon technology and resource efficiency, the iron and steel producers have major opportunity to reduce energy consumption, reduce GHG emission and remain competitive.

Objectives of the Workshop

This workshop will discuss and explore the technologies and strategies necessary for Iron and Steel sector to pursue pathway of Net Zero Emissions. Considering both challenges and opportunities, the workshop will analyse the key technologies and processes that would enable sustainable CO₂ emission reduction.

The Workshop will cover the following topics:

1. Commitments made by Govt of India to reduce GHG emissions.
2. Latest environmental discharge standards for Iron & Steel Plants and sustainability norms of CPCB & MOEFCC.

3. How climate risks will affect company's growth plans, physical assets, supply chains, reputation, regulatory compliance and financial performance?
4. Available technologies that will reduce the carbon emission / decarbonization in Iron & Steel sector? Case studies on decarbonisation and low carbon intensity steel making.
5. How to prepare GHG emission inventory, calculate GHG emissions, Carbon budget / balance, calculate carbon sequestration by trees, CCUS, other offsetting strategies
6. How BRSR reporting encompasses all parameters of ESG framework and benchmarked to global standards? What are the Essential indicators (mandatory) and Leadership indicators (Optional) in BRSR Reports?
7. Open house discussion on the latest Standardized Terms of Reference prescribed by the MOEFCC related to Governance/ Corporate Policy on Environment, GHG emission inventory, Carbon budget, etc

The workshop will discuss above topics in the presence of Expert Panel. (Regulatory body, Experts from Iron & Steel Industry, EIA Expert, Experts on GHG Emissions, Experts on Climate Change/ BRSR / Sustainability Reporting).

PANEL OF EXPERTS

1. **Dr. B. Sengupta**
Former Member Secretary, Central Pollution Control Board (Govt of India)
Former Expert Appraisal Committee Member – Ministry of Environment & Forests, Govt of India
Convenor of Task Force “Time-bound Reduction of GHG in Steel Industry as per Paris Agreement & Nationally Determined Contribution by India” Ministry of Steel, GOI
2. **Mr MP Singh**, Executive Director - Steel, Jayaswal Neco Industries Limited, Raipur
3. **Mr. SK Moitra**, Associate Director - Corporate Affairs & Business Development, Jayaswal Neco Industries Ltd, Raipur
4. **Mr. C D Goswami**, Former Executive Director - MECON
5. **Dr. S M R Prasad**, Former Vice President, JSW Steel
6. **Dr. Sandip Mukherjee**, GHG Expert & Head-EIA, M N Dastur, Kolkata

7. **Mr. Indra Guha**, Former Environmental Engineer, West Bengal Pollution Control Board, BRSR Expert (Partner - BDO India LLP, Gurugram)
8. **Mr. Ranjit Ghosh**, VP - Bhushan Steel & Power Ltd. Jharsuguda
9. **Mr. Sunil Singal**, CGM – Safety, Fire Services & Environment, SAIL - ISP Burnpur
10. **Mr. Sanjay Kumar**, GM – Environment Dept, SAIL - Bhilai Steel Plant
11. **Mr. Aadarsh Tiwari**, AGM-EMD, Jayaswal Neco Industries Limited, Raipur
12. **Dr. JK Moitra**
Former Scientist, Central Pollution Control Board (Govt of India)
EIA Expert & Coordinator - Metallurgy, Mining, Power, Cement, Coal Washery
(Accredited by Quality Council of India / NABET - Govt of India)

Who Should Attend This Workshop:

1. Professionals from Iron & Steel industry (Environment Management Dept involved in Environmental Permits and Compliance Reporting and Corporate Affairs Dept involved in BRSR Disclosures / Sustainability Reporting)
2. EIA Consultants / EIA Coordinators involved in EIA Studies for getting Environmental Clearance
3. Environment Auditors and Energy Auditors
4. Professionals who are interested to learn this new subject

Presentation Topics & Name of Speakers

DAY 1 (29th September 2023 - Friday)

Opening Ceremony (10.00 am to 10.30 am)

High Tea (10.30 am to 11 am)

Session 1 (11.00 AM to 1.30 PM)

1. Recap of Common Terms in Global Warming, Climate Change & Sustainability Reporting

(Following terms will be covered: United Nations Framework Convention for Climate Change (UNFCCC), Earth Summit 1992, Kyoto Protocol (1997), Corporate Responsibility on Environment Protection (CREP), Paris Agreement (2015), Sustainable Development Goals (SDG), Green House Gas (GHG), Emission Inventory, Net Zero Emission, Carbon Budget/Balance, Carbon Capture, Utilization & Storage (CCUS), Nationally Determined Contributions (NDC), Biennial Update Report (BUR), Environment, Social and Governance (ESG),

Sustainability Reporting Standards, Greenwashing, Business Responsibility and Sustainability Reporting (BRSR) by Securities Exchange Board of India (SEBI).

Dr JK Moitra, Former Scientist, Central Pollution Control Board & QCI Accredited EIA Expert – 1 hour

2. Modalities for Time-bound Reduction of GHG Emissions (Decarbonization) in Consonance with Paris Agreement and India's NDC in the Iron & Steel Sector

Dr B. Sengupta, Former Member Secretary, Central Pollution Control Board (Govt of India) & Convenor of Task Force "Time-bound Reduction of GHG in Steel Industry" Ministry of Steel, Govt of India – 1 hour

Discussions

Lunch: 1.30 pm to 2.30 pm

Session 2 (2.30 PM to 5.30 PM) Discharge Standards and Decarbonization

3. Current and Future Pollution Control Standards for Integrated Iron & Steel Plants, Furnaces, Boilers, DG sets, Coke Ovens, Coal Washery, Sponge Iron plants, Coal based Thermal Power Plants (National and International), and its implementation.

Dr B. Sengupta – 45 mins

4. Resource Efficient, Low Carbon Intensity Process of Iron & Steel Making in Jayaswal Neco Industries Limited.

Mr. M.P.Singh, Executive Director-Steel, Jayaswal Neco Industries Ltd – 45 mins

5. Decarbonization in Integrated Iron and Steel Plants: Steps to Achieve 2030 Targets / NDC

Mr. Sanjay Kumar, General Manager- Environment Dept, Bhilai Steel Plant (SAIL) – 45 mins

6. Low Carbon Intensity Process of Iron & Steel Making in Bhushan Steel Limited, Jharsuguda.

Mr. Ranjit Ghosh, Vice President, Bhushan Steel & Power Limited – 45 mins

Discussions

Day 2: 30th September – Saturday

Session 1 (10.00 am to 1.30 pm) ESG / Sustainability Reporting, BRSR Reports

7. Method of GHG inventory preparation, calculating GHG Emissions of steel plant, Carbon budgeting/ Balancing, Carbon Sequestration (by trees & others), CCUS and other Offsetting Strategies.

Dr Sandip Mukherjee (Head-EIA M N Dastur-Kolkata) & Dr JK Moitra – 1 hour

8. BRSR Reporting and Strategy

Mr. Indra Guha, Former Engineer-WBPCB, Partner – BDO India LLP – 1 hour

9. Road Map of Clean and Low Carbon Technology of Indian Steel Industry (Burden preparation, iron making, steel making and finishing)

Mr. C D Goswami, Former Executive Director, MECON Ranchi – 45 minutes

10. Challenges in Environmental Management in Integrated Iron and Steel Plants- Shifting Priorities (Case Study)

Dr SMR Prasad, Former Vice President, JSW Steel – 45 minutes

Discussions

Session 2 (2.30 PM to 5.30 PM)

Open House Discussions Guided by the Panel of Experts:

A. Environment and Governance: Standard TOR for Industry Sector Projects

Discussion will focus on following points:

1. National Ambient Air Quality Standards, Ambient and Source Noise Standard, ZLD Requirement, Critically Polluted Area, Guidelines for Environmental Compensation, Continuous Online Monitoring System for Ambient and Stack Emission, Importance of Compliance Reporting.
2. Well laid down Environment Policy approved by its Board of Directors.
3. Prescription within the Environment Policy for Standard Operating Procedures to bring into focus any infringement/ deviation/ violation of the environmental or forest norms/ conditions.
4. Hierarchical system or administrative order of the company to deal with the environmental issues and for ensuring compliance with the environmental clearance conditions.
5. System of reporting of non-compliances/ violations of environmental norms to the Board of Directors of the Company and/or Shareholders or Stakeholders.

B. Decarbonization and CCUS: Latest TOR for Industry stated to be prepared by the Project Proponent and submitted to MOEFCC)

6. The project proponent shall prepare GHG emissions inventory for the plant and shall submit the programme for reduction of the same (including carbon sequestration by trees, waterbodies, chemical conversion, etc).

7. Project proponent shall submit a study report on Decarbonisation program, which would essentially consist of i) company's carbon emissions, ii) carbon budgeting/ balancing, iii) carbon sequestration activities and iv) carbon capture, use and storage and v) offsetting strategies.

8. The above report shall also contain time bound action plan to reduce its carbon intensity of its operations and supply chains, energy transition pathway from fossil fuels to Renewable energy, etc. All these activities/ assessments should be measurable and monitorable with defined time frames.

9. Preparation of GHG Inventory of Iron & Steel Making and Action Plan for Decarbonizing and Minimizing the GHG Emissions including Carbon Sequestration by Trees, Carbon Budget, CCUS, other Offsetting Strategies.

10. Utilization of Solid Wastes and Zero Liquid Discharge from Iron and Steel Plants Leading to Reduction in CO₂ Emission.

11. How to Integrate A and B (BRSR and EIA Reports) so that future conflicts can be avoided (same Environment related data is submitted to MOEFCC and SEBI).

Conclusion

Day 3: 1st October - Sunday (10 am to 1.30 pm followed by Lunch)

Field Visit to Integrated Iron and Steel Plant of Jayaswal Neco Industries Limited, Siltara, Raipur

(The ISP has raw material preparation section, iron making section, steel making section and finishing section - Pellet Plant, Sinter Plant, Coke Oven, Sponge Iron Plant, Blast Furnace, Electric Arc Furnace, Induction Furnace, Steel Melting Shop, Rolling Mill)

For Further information about the Workshop, please contact

Mrs Mini Raj

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Er. Aadarsh Tiwari

AGM- Environment Dept

Jayaswal Neco Industries Limited

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Phone: 9111123784, Email ID: aadrsh.tiwari@necoindia.com

Participation Fee

Participation fee is 7080/- per person (Rs.6000/- + 18% GST)

GSTN: 07AABCE0945N1ZI

The fee includes lunch, tea and snacks at the venue and study materials. Transport facility to the Integrated Steel Plant shall be arranged from the Venue.

Number of Participants: The number of participants are limited, to be registered on first come basis. Visit to the Integrated Steel Plant is restricted to 50 participants.

Method of Making Payment:

Payment shall be made online using NEFT. Bank details are given below.

EMTRC Consultants Pvt Ltd

Punjab National Bank (Branch Radheypuri Delhi)

Account Number: 3058002100500026 IFSC: PUNB0305800

After making the payment, please send the UTR number, Date of payment, Name of the Company and Participant with designation and send the same by email to emtrc.info@gmail.com

Last Date to Receive Payment: 20th September 2023.

Participants may kindly send advance intimation for reserving the seat.

Resume of Lead Trainers

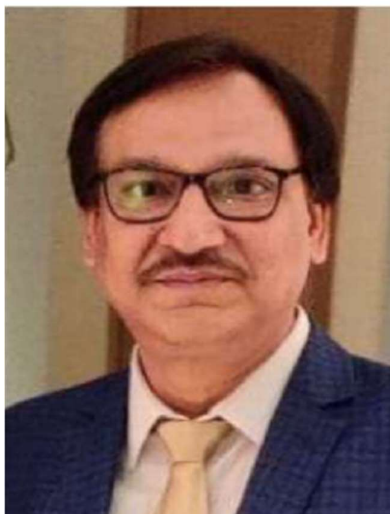
Dr. B. Sengupta (9810043771 bsg161@gmail.com)



Dr. B. Sengupta worked in Central Pollution Control Board, Ministry of Environment and Forests, Govt. of India for more than 30 years in different capacity. He was Member Secretary of CPCB for more than 10 years (1998-2008). He also worked in University of Florida, Gainesville, USA on air quality management and University of OSLO, Norway on Climate Change mitigation issues. He has vast experience in the field of Air and Water Quality Management, Industrial Pollution Control, Standard Development (Ambient and Source specific), Environmental Impact Assessment Studies, Fuel Quality improvements, Clean Technology, Waste Minimization, Pollution Prevention issues, Pollution Control in SSI units, Climate Change, Hazardous and Solid Waste Management. He represented India in many International Meetings / Seminars / Workshops organized by UNEP/USEPA/WHO/World Bank/UNIDO, etc. Dr. Sengupta has published more than 250 technical reports while working in CPCB and also presented/publish more than 50 papers in National and International peer reviewed Journals. He also guided M.Tech and Ph.D students of IIT-Delhi, JNU, DU, etc.

Presently Dr Sengupta is organizing training programs on Pollution Control and Waste Management for many State Pollution Control Boards (AP, Telangana, TN, Goa, Odisha) and Corporates like NTPC, IOCL, SAIL, ONGC, OIL, Vedanta, Tata, HZL, Bayer, E-Sustainability, etc.

Dr J.K.Moitra (9810032481 www.emtrc.in emtrcjk@gmail.com)



Dr. Jayanta Kumar Moitra (Ph.D Chemistry) started his career as Asst. Professor in St. Thomas College, Bhilai in 1986. Thereafter he joined the Central Pollution Control Board (Ministry of Environment, Forests & Climate Change, Govt of India) as Scientist and worked for almost 7 years. Thereafter he joined Larsen & Toubro Ltd. heading their Environment Division for almost 5 years. He is the founder Director of Environment Monitoring Training & Research Centre (EMTRC Consultants Pvt Ltd), where he developed the Environmental Laboratory, which was recognised by the MOEFCC under Environment (Protection) Act 1986, ISO:17025 – 2017 Accredited by the NABL. He has been designated as Government Analyst for 15 years by the Govt of India. Since 2010, He is an Accredited EIA Coordinator for Metallurgical Industry, Mining, Thermal Power Plants, Cement Plants and Coal Washery (by the NABET-Quality Council of India) and Expert in Hazard Identification & Risk Assessment.

He has in-depth understanding of environmental legislation, development of standards for various industries. He has more than 30 years of experience in Environmental Impact Assessment, Sampling & Analysis of Environmental Pollutants, Carrying Capacity, Social Impact Assessment, Human Health Risk Assessment, Source Apportionment, Meteorology, Impact Predictions, Environmental Management of Industry and GHG Emissions. He is credited with more than 75 research papers and technical documents. He has completed more than 100 EIA of large projects at various locations and obtained Environmental Clearance from MOEFCC. He worked for Asian Development Bank, Winrock International, Environment Defence Fund (USA), UNIDO, Dept of Science & Technology, Sir Ratan Tata Trust. He has organized several training programs on Impact Assessment, Risk Assessment, EIA Study, Monitoring & Analysis of Pollutants, Industrial Pollution Control Technologies, etc. He has worked closely with NTPC, L&T, GAIL, IOCL, ONGC, Indian Railways, Jayaswal Neco Industries Ltd., Jindal Steel & Power Ltd, Jindal Saw Ltd, JSW Ltd, YKK, Vedanta, Birla Corp, Tata Power, Shapoorji Pallonji, MSP Steel, Hindalco, Torrent Power, Adhunik Corp, Ltd Rashmi Metaliks Ltd, Shree Cements, ACC, JK Cement, etc.