CII-ITC Centre of Excellence for Sustainable Development

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Metal & Metallurgy

Confederation of Indian Industry

Sustainable and Green Solutions for Climate Change

3 March 2021

Proceedings

Agenda

Time	Sessions
1400-1500 hrs	**Transition to Low Carbon Pathway for Hard to Abate Sectors** **Moderator** • Mr Damandeep Singh, Director, CDP India **Key Speakers** • Mr Shubhashis Dey, Director, Climate Policy Program, Shakti Sustainable Energy Foundation • Mr Sanjiv Paul, Vice President, Safety Health & Sustainability, Tata Steel Limited • Mr Ashwani Pahuja, Chief Sustainability Officer and Executive Director, Dalmia Cement (Bharat) Limited • Ms Alka Talwar, Chief CSR & Sustainability Officer, Tata Chemicals Limited
1500-1600 hrs	**Manufacturing for a Sustainable Tomorrow** **Moderator** • Mr Anirban Ghosh, Chief Sustainability Officer, Mahindra Group **Key Speakers** • Mr Eisenhower Swaminathan, Managing Director- Glass Solutions & Strategic Projects, Saint-Gobain India Limited • Mr Rajinder Singh Ahuja, Chief HSE and Sustainability, Hindustan Zinc Limited • Mr Pankaj Satija, Chief Regulatory Affairs, Tata Steel Limited
1600-1630 hrs	**Setting a Way Forward for Sustainable & Green Solutions for Climate Change** • Mr Edwin Koekkoek, Counsellor, Energy and Climate Action, European Union Delegation to India • Mr Shikhar Jain, Principal Counsellor, CII-ITC Centre of Excellence for Sustainable Development

About the Conference

Climate change is the grave issue that people across the globe are dealing with over last few decades as it has deep impact on our planet's ecosystem and ecology. Five years ago,196 countries signed The Paris Agreement, and collectively pledged to set out a global framework to avoid dangerous climate change by limiting global warming to well below 2°C and pursuing efforts to limit it to 1.5°C.

India being one of the signatories to the agreement has committed for a decarbonised future, adopt carbon reduction methodologies and practices. Different initiatives are taken to achieve zero emission targets. Technological innovations and solutions are also critical to get the desired results.

One such solution is sustainable manufacturing, where fewer natural resources are utilized and efforts are focused to reduce pollution and waste, recycle and reuse materials, and moderate emissions in their processes.

The conference brought together speaker representation from companies and institutions like- Mahindra Group, Hindustan Zinc Limited, Dalmia Cement, Tata Chemicals, Tata Steel, Saint Gobain, Shakti Sustainable foundation, European Union & CDP India. There were 1 global and 10 national speakers and the number of delegates at this virtual conference was 53. The conference also had an exhibitor.

The two sessions focused on the solutions for reducing carbon emissions and understanding the best practices of Indian Industry in designing and manufacturing products from sustainable materials.

Transition to Low Carbon Pathway for Hard to Abate Sectors

Moderator

- Mr Damandeep Singh, Director, CDP India

Key Speakers

- Mr Shubhashis Dey, Director, Climate Policy Program, Shakti Sustainable Energy Foundation
- Mr Sanjiv Paul, Vice President, Safety Health & Sustainability, Tata Steel Limited
- Mr Ashwani Pahuja, Chief Sustainability Officer and Executive Director, Dalmia Cement (Bharat) Limited
- Ms Alka Talwar, Chief CSR & Sustainability Officer, Tata Chemicals Limited

Introduction

Sectoral difficulties of the hard to abate industries were discussed in this session, including sectors such as steel, cement, and chemicals. The need for technological, R&D, market and financial solutions were discussed briefly. The hard to abate sectors are striving to achieve their commitments using tools, methods and strategies including Science based target setting, internal carbon pricing, Net-zero commitments, RE100 and similar

Challenges

- There is an increase in disclosures from India companies, last year 16 companies submitted their information whereas this year 22 companies submitted data. An estimate of $100 billion will be required for climate change activities in the next five years, of which the hard-to abate sectors will contribute $7 billion. Emerging regulations are the highest form of risk that companies globally anticipate.
- GHG intensive steel sector have their own set of challenges, approximately 7% of global GHG emissions come from the steel sector, due to their reliance on fossil fuels in operations. China's current hold of steel manufacturing and recycling of steel of 50% is expected to drop to 25% by 2050 and India is expected to be the fastest growing in the steel sector in the next 30 years.
- In the future, the cost of steel will increase, as also will the cost of processing steel
- With regards to technological solutions for the hard to abate sectors, there are innovative technological solutions possibly in the iron and steel but currently available at very high costs. Other hard to abate sectors including petrochemicals, aluminum, cement have no proven technologies. Available solutions with green hydrogen are very expensive. However, waiting for the solutions will delay carbon neutrality commitments.

- R&D requirements in the cement sector as 55 to 60% of GHG emissions result from process emissions from limestone, along with high fuel requirements and heat temperatures of approximately 1500 degrees. Electricity consumption is also high in this sector.
- The diversity of the chemical sector. Being one of the pioneer companies to set neutrality targets in 2008, measures to reduce GHGs included big decisions, one being divesting their fertilizer plant. However, it is a challenge to undertake carbon neutrality targets, while staying competitive in the market and growing in production.

Present or Proposed Solutions

- Steel, as a material has infinite recyclability, which newer materials cannot replicate. Hence, steel remains a preferred option for users. The battle to decarbonize power has been won technically, however deployment of this will require time, enabling policies and finances.
- Carbon capture and storage holds answers to some sectors and has potential. Products made of saved carbon are also being researched and developed.
- If capex costs of technologies are $1.4trillion, the cost of newer technologies is in the range of $200 million and therefore may be considered an incremental cost.
- Indian cement has the lowest GHG emissions due to material circularity & reuse of industrial waste, waste heat recovery processes, renewable energy usage etc. Yet there is scope for improvements to achieve carbon neutrality and possible carbon negativity in the long-term future. Some possible solutions lie in carbon and hydrogen-based fuels, synthetic petrol and polyfuels.
- Innovation is a game changer. While it is easier to work on energy efficiency measures, companies find it harder to undertake fuel switch or renewable energy projects where investments are high. The chemicals sector is likely to have some residual emissions and some experiments of plantations are being considered, along with fuel switching to natural gas in the UK, renewable energy installations in Andhra Pradesh and carbon capture and storage in USA are being conducted to test the possibilities and feasibilities of low GHG options.
- In conclusion, solutions to achieve neutrality in the long-term include carbon capture and utilization / storage, renewable energy installations, relevant subsidies, technological solutions eg: bamboo plantations, higher tax for landfilling, preferential buying for low carbon products aimed at customers and learning from global examples could be explored.
- Among them all, policies for carbon markets, enabling policy frameworks for alternative fuels, global indication of a price on carbon, R&D for technologies and proactive adoption of these along with innovative and enabling financial mechanisms will support hard to abate sectors achieve neutrality.
- Finally, MOEFCC under the leadership of Mr Ravishankar Prasad is looking at setting a market mechanism for carbon pricing, along with a division on climate change which is a good indication of the government’s stand on climate change.

Manufacturing for a Sustainable Tomorrow

Moderator

- Mr Anirban Ghosh, Chief Sustainability Officer, Mahindra Group

Key Speakers

- Mr Eisenhower Swaminathan, Managing Director- Glass Solutions & Strategic Projects, Saint-Gobain India Limited
- Mr Rajinder Singh Ahuja, Chief HSE and Sustainability, Hindustan Zinc Limited
- Mr Pankaj Satija, Chief Regulatory Affairs, Tata Steel Limited

Introduction

Sustainability is a term that can mean a lot of different things to different people. In India, different sectors are working differently on their manufacturing processes to attain net carbon neutrality by 2050 and contributing efforts in making a sustainable tomorrow. Adoption of green energy, self-sustainability, reduction in carbon emission, water conservation and management and development of research and development are some of the major solutions towards it. With this Dr Ghosh set the context for the session and invited all panelists to share their strategies, that have been adopted by their businesses for making their manufacturing process more sustainable. All the panelists shared their experiences and best practices and basis the same the following challenges have been identified.

Challenges

- Finding green energy solutions.
- Becoming self-sufficient in terms of energy consumption.
- New technology adoption in manufacturing processes.
- Decreasing carbon footprints, increasing carbon capture and utilization.
- Extracting value added metals.
- Best environmental practices like Water Management, Zero Waste to Landfill, Zero Liquid Discharge and separate treatment for various waste streams etc. Infrastructure development for water conservation is a big challenge.
- Adoption of EVs in underground mining.
- Minimizing packaging waste.

Additionally, the panelists have suggested following solutions that would be required for making Indian manufacturing more sustainable.

Present or Proposed Solutions

- Adopting solar rooftops and capturing solar energy.
- Growing urban forest which will increase aesthetic value and decrease carbon footprints.
- Improving recovery from blast furnace.
- Water reuse for cooling.
- Rainwater harvesting which will decrease outside requirements of water.
- Making of water basins and other water sources with the help of government agencies and local communities.
- Waste utilisation, for example Hindustan zinc limited is fulfilling 100% gypsum requirements of cement industry from its waste.
- Setting of STPs.
- Monitor health and safety, Women education etc.
- Setting of R&D wing for finding alternatives and new technologies for not just reducing carbon footprints but also for carbon capture and sequestration.
- Government policy in making new adoptions easier and cost effective. Like minimizing Electricity tariffs, making green hydrogen energy cost effective.
- Further, Waste dumping sites can be used for recreational activities by growing trees and setting up of micro forest.
- In mining sectors backfilling of waste can be administered.
- Glass industries have worked so much on their quality that the wood required for packaging is now eliminated. Other sectors can also develop similar set of positive solutions.

Setting a Way Forward for Sustainable & Green Solutions for Climate Change

Key Speakers
• Mr Edwin Koekkoek, Counsellor, Energy and Climate Action, European Union Delegation to India
• Mr Shikhar Jain, Principal Counsellor, CII-ITC Centre of Excellence for Sustainable Development

Introduction

India is growing, and the world is looking at India and its climate change actions. The session looked at the EU's initiatives on reducing GHG emissions and how there could be synergies between India and the EU. After displaying the EU's work on sustainability and climate action, corporate India's achievements were highlighted, along with suggestions for future engagements and mutual learnings.

Challenges

- The EU is diverse with many rich and poor member states, diverse climatic zones, diverse energy sources, and varied socio-cultural factors. Bringing all these together on a common platform was an intensive engagement process.

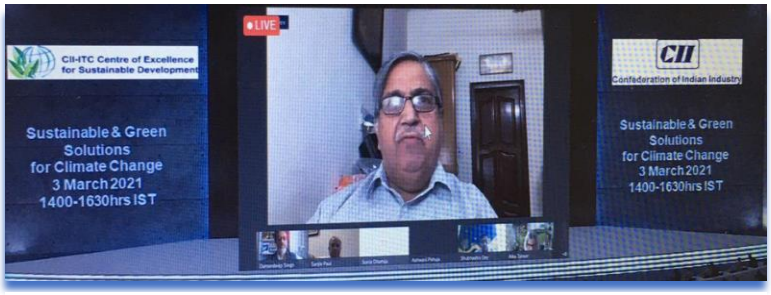
Solutions

- The EU, despite its diversity has a single market and initiatives like the EU Green Deal, EU emissions trading systems for power and industry sectors and its national targets for housing, agriculture, transport and similar sectors are expected to help the EU transit to a low carbon economy. Legislations including emission standards for vehicles, energy performance of buildings, along with raising the targets of 40% to 55% under the Paris Agreement are some noteworthy initiatives put into place by the EU.
- Switching to a more circular and efficient energy system, electrification using renewable energy and the use of renewable and low carbon fuels, including hydrogen, especially for the hard to abate sectors are prominent initiatives.
- The EU has also engaged in partnerships with corporations and agencies including The International Solar Alliance, The International Platform on Sustainable Finance, The Coalition for Disaster Infrastructure and similar.
- In India, CII has engaged with corporates for over two decades to support their sustainability journey. Many large corporates have begun this journey and are doing well and setting global examples. CII is now supporting India's large small and medium enterprises to become sustainable and carbon neutral.

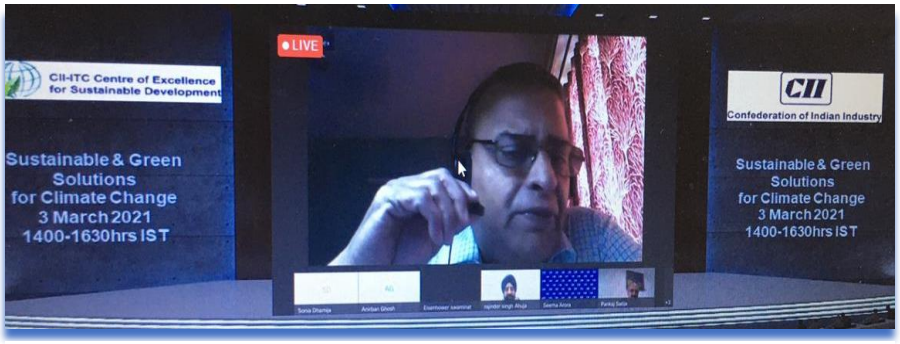
- The EU, CII and Indian companies can engage on various platforms including events on clean energy, battery storage and similar relevant issues. Further events can be jointly planned.
- Studies on offshore wind in India and support from EU companies has been undertaken.
- CII and EU are open to work together to learn from each other and share solutions to support each other for their sustainable futures.
- At the request of government, CII has events planned on 25 March, in July and September to take discussions and dialogues forward, as the world looks at the upcoming COP 26 in Glasgow in November 2021.

Pics of the conference

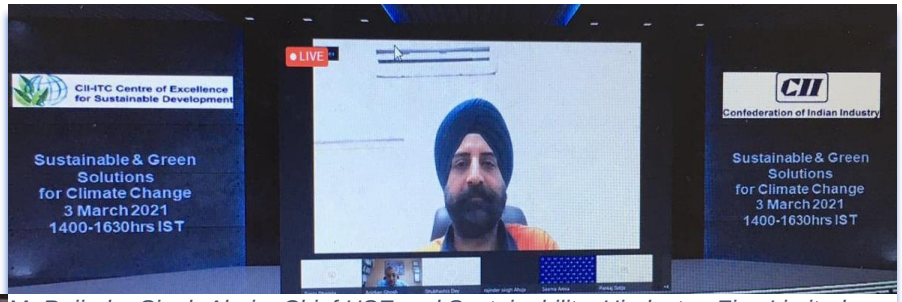
Mr Sanjiv Paul, Vice President, Safety Health & Sustainability, Tata Steel Limited



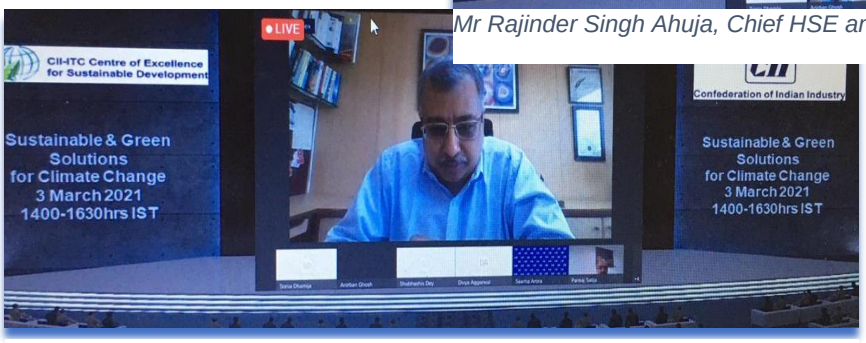
Mr Ashwani Pahuja, Chief Sustainability Officer and Executive Director, Dalmia Cement (Bharat) Limited



Mr Eisenhower Swaminathan, Managing Director- Glass Solutions & Strategic Projects, Saint-Gobain India Limited



Mr Rajinder Singh Ahuja, Chief HSE and Sustainability, Hindustan Zinc Limited



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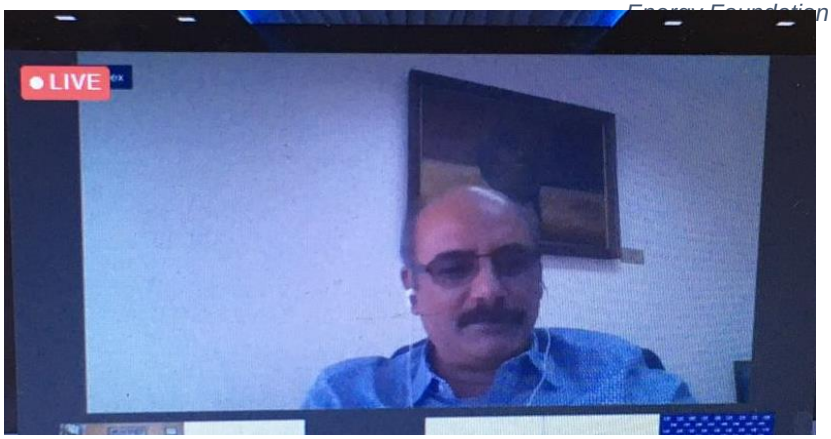

Mr Pankaj Satija, Chief Regulatory Affairs, Tata Steel Limited