Title: ***Driving Industry transition: Focus on Cement Sector***
Date: ***5th March 2025***
Time: ***09:30 am to 11:00 am***
Venue: ***Maple Hall, India Habitat Centre, New Delhi***

Problem statement and state of play

Indian industrial sector is a significant contributor to India's GDP and employs millions of people both in large industries as well as MSMEs. During the financial year 2022-23, industrial sector experienced a growth of 6.7% with manufacturing as a key driver for economic expansion The total final energy consumption by the industrial sector in India was 270,000 ktoe (P), making it the largest energy consumer in the country, accounting for nearly 49% of the total final energy consumption[1]. With India's rapid economic growth, demand for industrial materials like steel and cement and their related emissions are expected to rise.

Decarbonizing industry is essential to meeting global climate goals and India's net-zero target by 2070. This requires significant investment in low-carbon technologies, infrastructure, and value chains.

Cement is one of the most energy intensive industrial sectors and accounts for nearly 18 % of India's industrial sector emissions. Indian cement industry is second largest in the world with installed cement capacity of 600 million tonnes and production of 391 million tonnes of cement in 2022-23[2]. The Indian cement industry is a global leader in adopting sustainable practises and has achieved one of the lowest values of emission intensity in the world (MOEFCC, 2022)[3]. The sector has been a part of Perform, Achieve and Trade (PAT) cycles and renewable purchase obligation (RPO) of the Government of India since its inception in 2012; the industry has been able to overachieve its reduction targets. The cement sector has achieved significant improvements in energy efficiency, installation of waste heat recovery systems, clinker factor optimization and utilization of supplementary cementitious materials. However, to decouple further industrial growth from emissions, there is a need to focus on technological interventions as well as support a policy ecosystem that would help accelerate a shift to low carbon pathways.

[1] India's 4th Biennial Update Report: https://unfccc.int/sites/default/files/resource/India%20BUR-4.pdf
[2] https://pib.gov.in/PressReleasePage.aspx?PRID=2004762
[3] https://moef.gov.in/uploads/2022/11/Indias-LT-LEDS.pdf

According to TERI's conceptual framework on India's journey to net zero pathway, pilot projects need to be taken up in each industry segment including hard to abate sectors like steel and cement as the technologies for lower carbon or carbon free production emerge[4]. In the cement sector, in the near-term, it would be important to continue the focus on adopting energy efficiency and renewable energy technology options, as well as accelerate a move towards reducing the clinker factor further. BIS has recently come up the standard for Portland calcined clay limestone cement (LC3). CO2 emissions from LC3 production are expected to be 30% lower than OPC and 11% lower than PPC (based on current rates of fly ash replacement) (IIT Delhi, n.d.). In the medium to long term, for a net zero cement sector, role of new technologies like Carbon Capture Utilisation and Storage (CCUS), kiln electrification and newer type of cements and binders, etc will have to play a major role. Most of these technologies and options are not at a commercial scale and hence Research Development and Demonstration projects as well as the need to leverage technology and global partnerships will have to play a central role. The Indian cement industry, which will be growing at a fast pace in the coming decades due to high demand of materials like cement from sectors like infrastructure and housing, is ideally placed to lead the global transition by adopting innovative technologies and practices in the new capacities that are set up in the country.

This shift would require a collective effort from policymakers, industrial companies and their supply chains, along with research institutions, for fostering innovation and scaling up promising decarbonization technologies. Civil society organizations, academic institutions and philanthropies can act as enablers and facilitators for the transition process. With this context, a panel discussion with industry sector stakeholders is planned at WSDS2025 to delve into the levers for decarbonising hard-to-abate sectors, with a focus on cement sector.

Objectives of the thematic track

The thematic track would have following objectives:

1. Key decarbonisation levers and strategies for decarbonising cement sector in India.
2. Perspectives on LC3 cement production in India.
3. Perspectives on public procurement models to create demand for green products.
4. Strategies to implement pilot innovative technologies for decarbonizing the cement sector in the long term.

Discussions

After a brief background presentation, the panellists and participants would provide inputs and perspectives on the above-mentioned points. The session will be an open free flowing discussion wherein 3 or 4 panellists would initially provide their perspectives, following by inputs from the wider audience.

[4] https://teriin.org/sites/default/files/files/Net_Zero_Report_20_5_2024.pdf

About the World Sustainable Development Summit (WSDS)

The World Sustainable Development Summit (WSDS) is the annual flagship Track II initiative organized by The Energy and Resources Institute (TERI). Instituted in 2001, the Summit series has a legacy of over two decades for making 'sustainable development' a globally shared goal. The only independently convened international Summit on sustainable development and environment, based in the Global South, WSDS strives to provide long-term solutions for the benefit of global communities by assembling the world's most enlightened leaders and thinkers on a single platform. The 24th edition of the annual flagship event of The Energy and Resources Institute (TERI)—the World Sustainable Development Summit (WSDS)—will be held from 5-7 March 2025 in New Delhi. The Summit deliberations will focus on the umbrella theme: Partnerships for Accelerating Sustainable Development and Climate Solutions.