India and Norway Explore Joint Technologies to Turn Industrial Waste into Resources for Sustainable Construction

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The Council of Scientific and Industrial Research (CSIR), India, together with SINTEF and Research Council of Norway organized the India–Norway Dialogue on *"Waste to Resource Solutions in the Cement and Construction Sector"* on 10 November 2026 at India Habitat Centre, New Delhi, bringing together representatives from CSIR Institutes, SINTEF, regulatory authorities and the cement and construction industries to explore collaborative approaches for sustainable waste management and resource recovery. The Dialogue was timely and inline with the vision set forth by the Hon'ble Prime Minister of India, Shri Narendra Modi and Hon'ble Prime Minister of Norway, Mr. Jonas Gahr Støre during the formers visit to Norway in May, where-in the India-Norway relationship was elevated to a Green Strategic Partnership, with circular economy, clean technology and research at its heart. The dialogue commenced with a welcome address by Prof. S. K. Singh, CSIR-CBRI, who welcomed the dignitaries and distinguished participants.

The inaugural session was addressed by Dr. Rama Swami Bansal, Head, ISTAD, CSIR Headquarters; Dr. Arvinn Gadgil, Royal Norwegian Embassy, New Delhi; Dr. Kåre Helge Karstensen, Chief Scientist, SINTEF, Norway; and Prof. R. Pradeep Kumar, Director, CSIR-CBRI, among other dignitaries. The discussions emphasised strengthening India–Norway cooperation through joint technology oriented proposals involving CSIR institutes, SINTEF and industry partners, with a focus on translating research outcomes into practical and scalable solutions.

Prof. R. Pradeep Kumar highlighted the transition from a linear to a circular economy and the need to transform construction and industrial waste into valuable resources. Potential applications of construction and demolition (C&D) waste, steel slag, fly ash, red mud and other industrial residues were discussed, along with challenges related to processing technologies, standardisation, economic viability and market acceptance.



The technical session on “Safe destruction of POPs and hazardous waste” was led by Dr. Kåre Helge Karstensen, Chief Scientist, SINTEF and Dr. Ramesh Kumar, Chief Scientist, CSIR-NEERI, which explored the potential of cement kiln co-processing for the environmentally sound treatment of suitable hazardous wastes, including Persistent Organic Pollutants (POPs), DDT and PCB-contaminated materials etc. While CSIR-NEERI presented India’s National Implementation Plan inline with India’s Stockholm Convention commitments, the 2025 CDW Rules and related regulations and legacy POPs inventory; the International experiences presented by SINTEF highlighted the potential of cement kilns to destroy hazardous organic contaminants under controlled high-temperature conditions while substituting conventional fossil fuels with waste-derived alternative fuels. The discussions also emphasised the need for appropriate technical protocols, controlled industrial trials, emission monitoring and regulatory compliance.

Research initiatives of CSIR-CRRI and CSIR-AMPRI showcased opportunities for utilising fly ash, copper slag, red mud, plastic waste, steel grit and other industrial by-products in road construction, geopolymer concrete, specialised aggregates and value-added construction products. CSIR-NEERI and industry representatives further discussed challenges and technological requirements for the safe management and disposal of hazardous waste.

A dedicated session on C&D waste recycling, led by Dr. Christian John Engelsen of SINTEF, highlighted international best practices, including recycled aggregate-based construction products, mobile recycling units and improved processing techniques for removing impurities. Prof. S. K. Singh, CSIR-CBRI, delivered a presentation on "Using Slags and Other By-products in Construction", highlighting their potential applications in construction materials and the importance of sustainable utilisation of industrial wastes.

The dialogue identified several priority areas for future collaboration, including the development of two to three joint India–Norway research proposals, pilot-scale demonstration projects for hazardous waste treatment, technical guidelines for DDT and PCB-contaminated waste disposal, advancement of waste-derived construction materials and strengthening industry–academia partnerships.

The programme concluded with a shared emphasis on strengthening bilateral research and technological cooperation, promoting circular construction practices and accelerating the transition towards sustainable, resource-efficient cement and construction sectors.







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