THE ENERGY AND RESOURCES INSTITUTE
Creating Innovative Solutions for a Sustainable Future

सत्यमेव जयते

पत्तन, पोत परिवहन एवं जलमार्ग मंत्रालय
MINISTRY OF PORTS, SHIPPING AND WATERWAYS

NCoEGPS

Title: Green Ports as a Gateway to Decarbonization

Date: 25th February 2026 (Wednesday)

Time: 2:00 pm to 3:30 pm (IST)

Venue: Mumtaz, Taj Palace, New Delhi

India's maritime sector is entering a decisive phase of expansion, driven by rising trade volumes, industrial corridors and coastal development. Ports sit at the intersection of shipping, logistics, industry and energy systems, and their operational footprint increasingly shapes both national emissions trajectories and local environmental outcomes. Historically, port development has focused on capacity expansion and efficiency, with environmental performance treated as a secondary consideration. As maritime trade scales up and climate constraints tighten, this separation between growth and sustainability is no longer viable. Without systematic decarbonisation at ports, emissions from cargo handling, vessel operations, hinterland connectivity and coastal industrial clusters risk becoming structurally locked in for decades.

Recognising this challenge, India is repositioning green ports as the primary gateway for decarbonising its wider maritime ecosystem. This approach is embedded in long-term maritime policy directions under the Maritime Amrit Kaal Vision 2047 and Maritime India Vision (MIV) 2030, which together outline a transition across ports, shipping and inland waterways. The Harit Sagar – Green Port Guidelines (2023) operationalise this shift through quantified, time-bound targets that align port performance with national climate objectives. These include a mandatory 30 percent reduction in carbon dioxide emissions per tonne of cargo handled by 2030, rising to 70 percent by 2047, consistent with Maritime India Vision 2030 and India's net-zero pathway towards 2070, while reinforcing the national commitment to reduce emissions intensity by 45 percent by 2030.

Implementation of this vision needs reshaping of port energy systems and operations. Major ports are required to source more than 60 percent of their electricity demand from renewable energy by 2030, increasing to over 90 percent by 2047, alongside the expansion of green cover and zero-liquid-discharge practices. Electrification of cargo-handling equipment and port vehicles is being prioritised, with more than half of such assets targeted for electrification by 2030 and over 90 percent by 2047. Shore-to-ship power supply is being rolled out in phases, while the strategic use of LNG as a transition fuel complements electrification to reduce diesel consumption and local air pollution, with emission reductions of up to 80 percent achievable in specific port operations.

Ports are simultaneously emerging as anchors of India's clean energy and fuel transition. Under the National Green Hydrogen Mission, India is targeting five million tonnes of annual green hydrogen production by 2030, with Deendayal (Kandla), Paradip and V.O. Chidambaranar (Tuticorin) ports identified as dedicated hubs for production, storage, bunkering and export. More than 12 million metric tonnes per year of green hydrogen-based e-fuel capacity has already been announced nationally, positioning ports as critical nodes linking renewable energy, industrial demand and future low-carbon shipping. By providing fuel handling and bunkering infrastructure, ports can de-risk investments in green vessels and catalyse early adoption of alternative marine fuels.

These decarbonisation efforts are reinforced by large-scale port modernisation and connectivity investments under the Sagarmala Programme. Across 839 projects valued at ₹5.79 lakh crore, over 270 projects have been completed, adding more than 528 million tonnes per annum of port capacity. At the same time, coastal shipping cargo has grown by 118 percent and inland waterways traffic by 700 percent over the past decade, creating a strong foundation for shifting freight towards more energy-efficient and lower-carbon modes. This scale of infrastructure development offers a unique opportunity to embed green standards at the planning and operational stages, avoiding future retrofit costs and carbon lock-in.

The emerging policy framework in India is likely to look at ports a hub of performance-based, environmentally integrated maritime activities rather than just compliance-driven infrastructure. Reduction of emissions, deployment of onshore power supply, electrification of port operations, renewable energy integration, digital monitoring, and circular waste and water management systems are key elements of such transformation. Alignment with international standards such as MARPOL Annex VI and ISO environmental and energy management systems, together with instruments such as Zero Emission Port Zones and fuel-readiness assessment, may enable ports to support decarbonisation across shipping, logistics and associated coastal activities while improving regulatory certainty and investment credibility.

Against this backdrop, the thematic session seeks to examine how green ports can drive system-wide decarbonisation across shipping, logistics and coastal industry. It will explore how quantified targets under the Harit Sagar Guidelines can be translated into measurable operational change, how ports can accelerate the uptake of green fuels and low-carbon vessels, and how electrification, shore power and digital optimisation can reduce emissions while improving logistics efficiency and trade competitiveness. The discussion will also consider how policy alignment, financing mechanisms and institutional coordination can help scale green port practices across India's diverse port system, ensuring that sustainability becomes integral to maritime growth rather than an adjunct to it.

The session will be guided by a set of forward-looking questions: how can green ports deliver emission reductions across entire maritime value chains rather than within port boundaries alone; what role can ports realistically play in accelerating green hydrogen-based fuels and other low-carbon marine energy solutions given current cost and infrastructure constraints; how can operational decarbonisation at ports be aligned with efficiency and competitiveness goals; and how India's experience with green ports can inform global discussions on maritime decarbonisation in emerging economies.

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 25th edition of the annual flagship event of The Energy and Resources Institute (TERI)—the World Sustainable Development Summit (WSDS)—will be held from 25-27 February 2026 in New Delhi. The deliberations of the **Silver Jubilee** edition of the Summit will focus on the umbrella theme of *Parivartan*: **Transformations: Vision, Voices and Values for Sustainable Development.**