

“Samudra Śuddhih Rāstrasya Vriddhih”

Sāgara Shuddhi: Powering India’s Green Maritime Renaissance

Concept Note

India’s maritime sector stands at a defining moment as it navigates the dual challenges of economic growth and environmental responsibility. With the International Maritime Organization (IMO) setting ambitious decarbonization targets, India’s vision aligns with global efforts to create a cleaner, greener, and more resilient maritime ecosystem. Under the *Maritime India Vision 2030* and *Amrit Kaal Maritime Vision 2047*, the nation is advancing towards sustainable development by embracing clean energy, digital innovation, circular economy practices, and inclusive workforce transformation.

The following four sessions aim to explore key aspects of India’s maritime transformation, bringing together policymakers, industry leaders, researchers, and innovators to shape actionable strategies for a sustainable maritime future.

Session 1: Beyond Blue – Propelling India’s Green Shipping Revolution

Theme: *Shaping the Future Wake: India’s Drive for an Emission-Free Maritime Odyssey*

Focus: Driving the transition to zero-emission shipping through clean fuel adoption, digital innovation, and sustainable port infrastructure aligned with global climate goals.

The maritime industry contributes nearly 3% of global greenhouse gas emissions, underscoring the urgency for a systemic shift toward cleaner operations. India, with its vast coastline and growing port capacity, is well-positioned to spearhead this transformation. This session will explore how the adoption of alternative fuels such as green hydrogen, methanol, ammonia, and LNG can decarbonize the shipping value chain. It will also emphasize the role of digital technologies in improving fuel efficiency, optimizing logistics, and ensuring compliance with global environmental standards.

Panellists will discuss the policy, regulatory, and financial mechanisms required to foster innovation and investment in green shipping. The conversation will further highlight India’s potential to emerge as a hub for sustainable maritime practices through climate-resilient port infrastructure and industry collaboration.

Session 2: Crew Change to Career Change – Navigating the Human Side of Maritime Transition

Theme: *A Forward-Looking Approach to Institutional and Workforce Adaptation in a Decarbonising Industry*

Focus: Examining the impact of decarbonisation, automation, and regulatory change on seafarers' rights, skills, welfare, and future employment through collaboration between governments, industry, unions, and training bodies.

As technology and sustainability reshape the maritime landscape, the human element remains central to this transformation. The decarbonization and digitalization of the shipping industry are redefining the skills required for seafarers, calling for new training frameworks, certification standards, and institutional reforms. This session will delve into how the maritime workforce can adapt to automation, green technologies, and evolving operational demands.

Panelists will address issues such as workforce upskilling, fair employment practices, seafarer welfare, and gender inclusion in the maritime sector. The discussion will also highlight the importance of coordination between governments, maritime academies, industry stakeholders, and unions to ensure a just transition that empowers workers while advancing global climate objectives.

Session 3: Ship Recycling and the Circular Economy

Theme: *"Waste to Wealth: Reinventing Ship Recycling for a Circular Economy"*

Focus: Transforming India's shipbreaking sector into a global model of sustainability by integrating environmental safeguards, worker welfare, and circular economy principles under international frameworks.

India's ship recycling industry, led by Alang, the world's largest shipbreaking yard, plays a crucial role in global end of life ship disposal and material recovery. However, as international environmental and safety standards evolve, there is a pressing need to modernize the sector in line with the Hong Kong Convention and other global frameworks. This session will explore strategies to make ship recycling safer, greener, and more economically viable through sustainable practices and technological innovation.

Panellists will discuss how circular economy principles can maximize material recovery, reduce waste, and promote responsible ship recycling. The session will also emphasize improving labour conditions, health and safety measures, and environmental management systems to position India as a global benchmark for sustainable ship recycling.

Session 4: Green Shipbuilding and Climate-Resilient Infrastructure

Theme: *Steel, Ships & Sustainability: Building India's Next-Gen Shipyards*

Focus: Harnessing India's shipbuilding heritage to drive carbon-neutral design, green materials, and indigenous innovation for climate-aligned maritime infrastructure.

India's shipbuilding sector holds immense potential to support the nation's blue economy ambitions and contribute to global sustainable maritime development. This session will highlight how the integration of advanced technologies, renewable energy use, and eco-friendly design can redefine the country's shipbuilding and port infrastructure landscape.

This session will explore how India's shipyards can integrate green design principles, efficient material recovery, and low-emission manufacturing processes to minimize waste and enhance sustainability. The discussion will focus on promoting eco-friendly materials, renewable energy integration, and digital innovation in ship design and construction. By emphasizing indigenous manufacturing and sustainable steel use, India can not only reduce its environmental footprint but also establish itself as a global leader in next-generation green shipbuilding and climate-resilient maritime infrastructure.

Conclusion

Together, these sessions aim to provide a 360-degree perspective on India's maritime decarbonization journey — from technological innovation and workforce transformation to sustainable industry practices and infrastructure resilience. The outcomes will contribute toward shaping policy directions, investment priorities, and collaborative frameworks essential for realizing India's vision of becoming a global leader in green, inclusive, and future-ready maritime development.