



# Harit Sagar Samachar

May 2025 | Issue 3

## Welcome Note

Welcome to the third issue of Harit Sagar Samachar.

We are pleased to present the latest edition of **Harit Sagar Samachar**, your go-to source for innovations, updates, and best practices in sustainable maritime operations. This publication is designed to inform, inspire, and connect professionals dedicated to reducing the environmental footprint of ports and shipping activities.

## In This Issue

1. Decarbonization Strategies for Indian Ports and Shipping: Paving the Green Path Ahead ..... 2
2. Mormugao Port becomes 100% Solar-powered Port ..... 3
3. News Highlights..... 4
4. Green Initiatives ..... 6
5. Blogs..... 7
6. Stakeholder Workshop on the National Centre of Excellence in Green Ports and Shipping (NCoEGPS) Portal..... 8
7. Upcoming Events..... 9
8. Latest Announcements..... 10



# Decarbonization Strategies for Indian Ports and Shipping: Paving the Green Path Ahead



With its vast coastline and pivotal maritime role, India stands at the forefront of a global shift towards sustainability in the shipping and port industries. Decarbonizing the maritime sector isn't merely a technical challenge; it's a chance for India to lead the world in green innovation and sustainable practices.

## 1. Green Shipping Corridors: India's Sustainable Maritime Network

The concept of 'Green Shipping Corridors' could redefine India's maritime future. These corridors are more than just routes—they represent interconnected ecosystems that integrate renewable energy sources such as solar, wind, and marine power. Ports could be equipped with energy-efficient

terminals, and vessels would run on alternative fuels like liquefied natural gas (LNG), hydrogen, or ammonia. With the right investments, these corridors could connect India's ports in a way that makes sustainable shipping not just an ideal, but a reality.

## 2. Collaborative Innovation for a Green Future

Decarbonization can't be achieved by isolated efforts. India's maritime stakeholders—port authorities, shipping companies, and technology providers—must collaborate to drive change. Ports should evolve into dynamic smart ecosystems where artificial intelligence (AI) and Internet of Things (IoT) optimize traffic and reduce energy use. By embracing digital twins, which simulate port operations, we can predict maintenance needs

and reduce fuel consumption, making operations more efficient and sustainable.

## 3. Digitalization: Unlocking Efficiency

While alternative fuels are crucial, digital technologies will be the unsung heroes of decarbonization. AI can optimize ship routes and port schedules in real-time, reducing time spent in transit and minimizing emissions. IoT-enabled devices can track emissions and energy use, ensuring that every operation is as efficient as possible. Digital innovation will drive the maritime sector's sustainability by enhancing efficiency and reducing carbon footprints.

## 4. Financing the Green Revolution

Decarbonizing India's maritime sector requires substantial investment. Green





bonds and public-private partnerships (PPP) can serve as innovative financing models for sustainable infrastructure. These projects won't just meet India's environmental goals—they will also boost economic growth by making Indian ports more competitive and attractive to international trade. Financing green infrastructure is not just an environmental obligation but a smart business investment.

#### **5. Building Green Talent: Training the Leaders of Tomorrow**

None of this transformation is possible without a skilled workforce. India must prioritize green human capital development by integrating sustainability into maritime education and training. India can ensure long-term leadership in the green shipping revolution by equipping future maritime professionals with the tools to innovate and operate sustainably.

#### **6. A Global Ripple: Leading the Green Maritime Movement**

India's decarbonization efforts won't just impact domestic ports and shipping. India can set a global example by becoming a leader in green maritime innovation. Our efforts can inspire other nations to follow suit, accelerating the world's transition to sustainable shipping and port operations.

**Capt. Yogesh Shah,  
Indian Maritime University**

## Mormugao Port becomes 100% Solar-powered Port



In a landmark move towards sustainability, the Mormugao Port Authority (MPA) is set to operate entirely on renewable energy by 2025—five years ahead of the target outlined in the Maritime India Vision (MIV) 2030.

India has committed to sourcing 40% of its national energy requirements from renewable sources by 2030. Indian ports are also required to align with the International Maritime Organization's (IMO) framework, which promotes nine United Nations Sustainable Development Goals (UN SDGs), emphasizing the importance of safe, efficient, and environmentally sustainable port operations.

In line with this commitment, the Maritime India Vision (MIV) 2030 has been formulated to guide the transformation of Indian ports into safe, efficient, and environmentally sustainable hubs. Among the key targets is ensuring over 60% of energy at all major ports comes from renewable sources by the end of 2030.

Mormugao Port Authority (MPA), one of India's 12 major ports and the smallest among them, currently receives approximately 2.9 MW from the Goa Electricity Department and consumes around 4.5 million units of electricity annually. However, less than 6% of this is currently sourced from a small 200 kW rooftop solar plant.

To bridge this gap, MPA embarked on a transformative project to install a 3 MW solar power plant, which will fully meet the port's energy needs. The energy generated will be supplied to the state grid and utilized by the port through a virtual net-metering arrangement. The plant is expected to produce 4.5 million units annually, completely offsetting the port's consumption and eliminating its dependence on non-renewable sources. In support of this initiative and as part of its commitment to achieving carbon neutrality, MPA, constrained by limited land availability, repurposed



approximately 7 acres of land made available through the demolition of obsolete and unused residential quarters.

With an estimated CO<sub>2</sub> savings of 3,807 tonnes per year, the project positions Mormugao Port as a frontrunner in India's green energy transition. The project is expected to achieve a return on investment (ROI) within 6–7 years. The 3MWp solar power plant installation was dedicated to the nation by the Hon'ble Vice President of India, Shri Jagdeep Dhankhar, on May 21, 2025.

This solar power plant is Goa's second-largest standalone solar installation, following the 5-MWp plant at Manohar International Airport in Mopa. As Goa currently has no dedicated power generation facilities and relies heavily on centrally allocated power—around 518 MW from national grids from central government plants such as NTPC and NPICL—this project marks a significant boost to the state's solar capacity, which stood at just 46.2 MW as of March 2023 including 33.74 MW from residential and small-scale rooftop systems. Therefore, MPA's solar initiative significantly boosts the state's green energy portfolio.

This bold move aligns with global sustainability goals and sets a benchmark for other ports and infrastructure hubs across the country. Mormugao Port is poised to lead India's Green Port revolution.

**Mormugao Port Authority**

### Green Shipping Corridors

A green shipping corridor is a maritime trade route focused on using zero-emission fuels and technologies to cut greenhouse gas emissions. It serves as a pilot path to showcase and speed up the shift to cleaner, sustainable shipping practices. Green shipping corridors emphasize the adoption of zero-emission vessels powered by clean fuels like green hydrogen, ammonia, and biofuels.

- Domestic Green Shipping Corridor: India is set to launch its first domestic green shipping corridor between Kandla and Thoothukudi within 3–6 months, aiming to cut maritime carbon emissions. [Read More...](#)
- International Green Shipping Corridor: India and Singapore have signed a Letter of Intent to collaborate on a Green and Digital Shipping Corridor in March 2025. The initiative aims to boost innovation, speed up low-emission tech adoption, and enhance digital integration, supporting PM Modi's vision of 'Viksit Bharat'. [Read More...](#)



## News Highlights

### India aiming for net zero emissions at major ports by 2047

June 08, 2025 |  
Economic Times Infra

Union Minister Sarbananda Sonowal has announced that India is setting an ambitious target to achieve net-zero emissions at all major ports by 2047. This initiative is a key component of the government's Maritime Amrit Kaal Vision 2047, aimed at transforming Indian ports into sustainable, world-class facilities. The strategy includes deploying renewable energy systems, electrifying port operations, and introducing

green fuels to significantly cut carbon emissions, reinforcing India's commitment to environmental stewardship in maritime logistics. [Read more](#)

### NYK presents Japan's 'first' battery-powered work vessel

May 26, 2025 | Source:  
Offshore Energy

Japan's NYK has launched the country's first fully battery-powered work vessel, e-Crea, as part of its push for decarbonized maritime transport. NYK sees electric vessels as a key step towards sustainable shipping, alongside exploring next-gen fuels like ammonia. [Read More...](#)



### **Port of Rotterdam and EDGE looking into future-proof liquid hydrogen infrastructure**

May 22, 2025 | Source: Offshore Energy

The Port of Rotterdam and Norway's EDGE Navigation have signed a letter of intent to develop liquid hydrogen (LH2) infrastructure for maritime use, focusing on ship-to-shore and ship-to-ship delivery and related policies and regulations. [Read More...](#)

### **Govt. to Boost Production of Made-In-India Merchant Vessels, Cut Reliance on Foreign Ships**

May 21, 2025 | Source: The Indian Express

The Indian government is ramping up domestic

merchant shipbuilding to reduce reliance on foreign vessels and strengthen trade resilience. A self-reliant fleet is seen as key to energy security, especially in emergencies, and is central to India's goal of becoming a maritime power and a developed nation by 2027. [Read More...](#)

### **Streamline the global supply chain with modern digital port solutions**

May 12, 2025 | Source: Seatrade Maritime

The IMO's 2024 Maritime Single Window mandate requires all member states to adopt a centralized digital platform for port-vessel data exchange. Aimed at streamlining ship procedures and boosting efficiency, it also accelerates

port modernization, especially for small- and mid-sized ports, to meet future global shipping demands. [Read More...](#)

### **Wärtsilä Launches Onboard Carbon Capture System, Key to Cutting CO2**

May 7, 2025 | Source: Wartsila

Wärtsilä has unveiled a carbon capture system for ships, cutting CO<sub>2</sub> emissions by up to 70%. Installed on Solvang ASA's Clipper Eris, it captures emissions from all exhaust sources and has been operational since February 2025. The technology supports the IMO's 2050 emission targets and advances sustainable maritime operations. [Read More...](#)

## **DID YOU KNOW?**

In April 2025, the Jawaharlal Nehru Port Authority (JNPA) processed 667,922 TEUs (Twenty-foot Equivalent Units) of containers. This represents a substantial 21.28% increase compared to its container traffic in April 2024. [Read More...](#)





# Green Initiatives

## National Initiatives

In a significant step towards sustainable maritime practices, India and Denmark have agreed to set up a Centre of Excellence (CoE) in Green Shipping. This decision followed a bilateral meeting between Union Minister Sarbananda Sonowal and Denmark's Minister Morten Bodskov. A Memorandum of Understanding (MoU) was signed to formalize the collaboration, which aims to enhance the quality and efficiency of maritime operations while accelerating India's transition to a greener shipping sector. [Read More...](#)

The Ministry of Ports, Shipping & Waterways has set a goal to finish 150 projects by September 2025. This

ambitious plan includes several major undertakings: establishing the Bharat Container Shipping Line, creating a Green Shipping Corridor, allocating ₹100 crore for the development of inland waterways, modernizing operations through digital initiatives, and fostering growth in maritime start-ups. Source: [PIB India](#)

In order to combat marine pollution via oil spill, the Indian Coast Guard (ICG), in partnership with the Haldia Dock Complex (HDC), organized a Marine Pollution Response Seminar and Workshop to strengthen preparedness, coordination, and swift response among key stakeholders for handling oil spill incidents along the West Bengal coast in May 2025. Source: [India Shipping News](#)

Bharat Ports Global, a consortium of India Ports Global (IPGL), Sagarmala Development Corporation (SDCL), and Indian Port Rail and Ropeway Corp (IPRCL), aims to boost India's global maritime presence. By developing strong port infrastructure, it will enhance logistics, support 'Make in India', and position India as a major player in global trade. Source: [Business Standard](#)

In February 2025, JNPA signed an MoU with NMDC Group PJSC for a proposed ₹210 billion investment in dredging, reclamation, and shore protection for the Vadhvan port project. This marks a major step towards developing the all-weather deep-draught port into a world-class maritime hub, aiming to rank among the global top 10. Source: [Indian Infrastructure](#)

## International Initiatives

The Santos Port Authority (APS) of Brazil and the Dutch-Belgian North Sea Port have signed an MoU to jointly pursue initiatives aimed at decarbonization. The two port authorities will collaborate on green shipping corridors, clean energy (solar, wind, hydrogen), technology, innovation, and circular and blue economy initiatives.

Source: [Seatrade Maritime News](#)

South Korea's Ministry of Oceans and Fisheries (MOF) has announced plans to establish

a green shipping corridor connecting the United States and South Korea across the Pacific Ocean by 2027. Vessels powered by carbon-free energy sources will operate along the route. Source: [Safety4Sea](#)

JCE Energy supplied a modular solar system to Aquaterra Energy for a major oil firm's unmanned platform off Angola, featuring more than 100 offshore-grade solar panels, especially designed to capture maximum energy in marine environments and to endure harsh offshore conditions. Source: [Offshore Energy](#)

The Estonian government has launched a €25 million grant programme to aid

in the modernization and environmental enhancement of passenger and cargo ships, tugboats, and other port and support vessels within the country's ports. Source: [Offshore Energy](#)

The European Commission and the UK have established a Common Understanding that sets out a refreshed framework for collaboration, emphasizing maritime safety and security, along with emerging energy technologies like hydrogen and carbon capture, utilization, and storage (CCUS), among other key areas. Source: [Offshore Energy](#)





## Read our new blogs at [NCoEGPS Website](#)

### Power Shipping's Future with Clean Fuels or Pay the Tax

**T**he blog explores the growing climate impact of global shipping, which emits nearly 1 billion tonnes of CO<sub>2</sub> annually, i.e., about 3% of global greenhouse gases. In a landmark decision taken during the 83rd session of the IMO's Marine Environment Protection Committee (MEPC) in April 2025, the International Maritime Organization (IMO)

introduced the world's first global carbon tax on shipping emissions, set at \$100 per tonne starting in 2028. Supported by major economies like India, China, and Brazil but opposed by oil-rich nations, this tax aims to reduce emissions, fund green fuel development, and help decarbonize the sector, particularly in developing countries. While the move is

expected to raise \$40 billion by 2030 and cut emissions by 10%, it falls short of more ambitious climate goals. Challenges remain around implementation, fairness, and enforcement, but the decision marks a critical step towards a greener, more sustainable future for maritime trade.

[Read More...](#)

**Rambhatla VSSL Revathi,  
Parul and Ashish**

### Plugging into Green Future: Electric Cargo Handling at Ports

**T**he global logistics sector is rapidly transforming to meet demands for efficiency, sustainability, and cost reduction. A key strategy is electrifying port cargo handling equipment (CHE), which currently relies on high-emission diesel engines. This shift, crucial for achieving IMO's net-zero 2050 goals, offers significant environmental benefits (reduced GHG, air/water

pollution), cost savings (fuel, operations, maintenance), technological advancement (IoT, AI, battery storage, fuel cells), and improved energy resilience.

However, challenges include high initial costs, limited availability of mature technology (low TRL), and the need for extensive infrastructure upgrades. Despite these hurdles, major players like APM Terminals are investing heavily in electrification, with pilot

programmes and retrofitting initiatives aiming for significant emission reductions. Ports such as Los Angeles and Long Beach are also aggressively pursuing electrification, with large-scale deployment of battery-electric and hydrogen fuel cell CHE demonstrating strong commercial viability and progress towards zero-emission operations. [Read More...](#)

**Dr Atul Meshram  
Research Associate,  
TERI**





# Stakeholder Workshop on the National Centre of Excellence in Green Ports and Shipping (NCoEGPS) Portal

To raise awareness among stakeholders and further enhance the NCoEGPS portal, TERI organized the first stakeholder workshop on 4th June 2025 for officials of VO Chidambaranar Port Authority (VoCPA).

The National Centre of Excellence in Green Ports and Shipping (NCoEGPS) Portal — <https://green-port-shipping.org> — was officially launched by the Hon'ble Union Cabinet Minister, Shri Sarbananda Sonowal, in February 2025 during the event *"Powering the Blue Economy – Viksit Bharat with Budget 2025"* held in Mumbai. This landmark initiative, a collaborative effort between the Ministry of Ports, Shipping, and Waterways (MoPSW) and The Energy and Resources Institute (TERI), represents a significant step forward in promoting sustainability within India's maritime sector.



Shri Rajesh Soundararajan, IAS, Deputy Chairperson, inaugurated the Stakeholders workshop to familiarize on the National Centre of Excellence on Green Ports and Shipping Portal, organised by TERI, at the Port. The event was attended by the senior officers from the port.

The workshop aimed to engage key stakeholders in enriching the portal's content by contributing

case studies, research, policy documents, and best practices. It also focused on identifying the data and tool needs of ports to support energy-efficient operations and effective documentation of green initiatives through Data Management Systems (DMS). Current portal features, including the energy efficiency tool, were showcased, and stakeholder feedback was gathered to enhance usability and sectoral relevance.

## DID YOU KNOW?

V.O. Chidambaranar Port in Tamil Nadu has become India's first plastic-free port! This green milestone was officially declared on World Environment Day 2025. [Read More...](#)







## Upcoming Events

### Electric & Hybrid Marine Expo Europe

June 24–26, 2025, Amsterdam, The Netherlands

[Read More...](#)

### International Conference on Port and Maritime Security (ICPMS)

July 3–4, 2025, Prague, Czech Republic

[Read More...](#)

### Digitalisation in Shipping: Europe 2025

September 10–11, 2025, Rotterdam, The Netherlands

[Read More...](#)

### INMEX SMM India

September 10–12, 2025, Bombay Exhibition Centre, Mumbai, India

[Read More...](#)

### Digitalised Smart Ports Conference

October 15–16, 2025, Valencia, Spain

[Read More...](#)

## Maritime Policies & Guidelines

### International Convention for the Safety of Life at Sea (SOLAS), 1974

The SOLAS Convention (1974) is the most significant international treaty concerning the safety of merchant ships. It was developed under the IMO to protect lives at sea by setting minimum safety standards for ships involved in international voyages.

Source: [IMO](#)

### Draft revised MARPOL Annex VI

The "Draft revised MARPOL Annex VI" refers to proposed updates to the MARPOL Annex VI regulations, which are part of the International Convention for the Prevention of Pollution from Ships (MARPOL), administered by the IMO. Its purpose is to minimize air pollution from ships in the marine environment.

Source: [IMO](#)



## DID YOU KNOW?

The Vadhavan Port, Maharashtra, is projected to be three times larger than JNPA, positioning it among the world's top 10 ports. This massive development is anticipated to spark substantial economic growth over the next two decades, potentially boosting Mumbai's economy to an impressive \$1.5 trillion. [Read More...](#)



## Unlock New Insights

- Tasmanian-based shipbuilder 'Incat' has launched the world's largest battery-powered vessel, hailing it as a groundbreaking achievement in sustainable maritime transport. The 130-metre ship, named Hull 096, is the most ambitious and significant project the company has undertaken, representing a major advancement in eco-friendly shipping technology. [Read More...](#)
- In February 2025, Canadian Transport Minister Anita Anand announced up to \$25 million for the Halifax Port Authority to support green shipping and improve supply chain efficiency. The funding includes \$22.5 million to develop a Halifax-Hamburg green corridor, featuring alternative fuel readiness, hydrogen production, port electrification, and rail upgrades and \$2.5 million to expand crane infrastructure, easing congestion and boosting terminal capacity. [Read More...](#)

## Latest Announcements

- In a significant step towards green port operations, Shri Shantanu Thakur, Hon'ble Minister of State for Ports, Shipping and Waterways, laid the foundation stone for a 2 MW (AC) Solar PV Grid Power Plant at the Haldia Dock Complex on 10th June 2025.  
Over the past 11 years, India has been steadily steering towards a greener, cleaner, and more efficient future. This initiative is a strong step forward in aligning with India's clean energy goals and in advancing an energy-efficient maritime ecosystem under the vision of Viksit Bharat 2047.  
Source: <https://shipmin.gov.in/>
- Prime Minister Shri Narendra Modi virtually inaugurated and laid the foundation stone for several transformational projects of Deendayal Port Authority (DPA), Kandla, worth over ₹1,100 crore, during a grand event held at Bhuj, Kutch on May 27, 2025. This investment highlights the government's commitment to boosting maritime trade, green port operations, and India's role as a global logistics hub. [Read More...](#)
- Union Minister Shri Sarbananda Sonowal, addressing at JNPA's 36th anniversary in Mumbai, highlighted the vital role of private sector participation in building strong ports to achieve the Amrit Kaal 2047 vision. He praised JNPA's record of handling 10 million TEUs, crediting private players for their key contribution to this success. [Read More...](#)



## Call for Contributions

Be a participant in the Next Issue of

### Harit Sagar Samachar

Send in your:

- Short articles • Case studies • Opinions
- Photos & infographics

**On themes such as** Port decarbonization strategies; Green shipping corridors; Alternative fuels (LNG, hydrogen, etc.); Digital tools for sustainability; and Gender leadership in green shipping

**Submit by:** May 30, 2025

**Send to:** [ncoegps@green-port-shipping.org](mailto:ncoegps@green-port-shipping.org)/[reetas@teri.res.in](mailto:reetas@teri.res.in)

## Together Towards a Greener Future

For feedback and contributions email us at: [ncoegps@green-port-shipping.org](mailto:ncoegps@green-port-shipping.org)