Harit Sagar Samachar

June 2025 | Issue 4

In This Issue

Welcome Note

Welcome to the Fourth 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.

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VO Chidambaranar Port Authority – Paving the Way for Sustainability

Indian ports will play an important role in contributing towards de-carbonization efforts of the country. Ports are, therefore, required to undertake green and sustainability initiatives in line with the broad vision of the country and contribute to the efforts being made by the country in moving towards achieving India's long-term goal of reaching net-zero emission by 2070. This will also help in contributing towards moving closer to the UN Sustainable Developmental Goals (SDGs) which includes obligations on developing resilient infrastructure for safe, efficient, and sustainable ports.

In this context, the VO Chidambaranar Port Authority (VOCPA), located in Tamil Nadu's Tuticorin, is leading by example in transforming India's maritime infrastructure through environmentally responsible practices. As a gateway to global trade and regional development, the VOCPA has embraced a series of sustainable initiatives aligned Harit Sagar guidelines, MIV 2030 & MAKV 2047 formulated by the Ministry of Ports, Shipping and Waterways, which aims at building a low-carbon, climate-resilient maritime ecosystem.

Green Initiatives at VOCPA

The VOCPA has adopted a proactive approach towards sustainability by introducing and implementing a series of initiatives from integrating renewable energy solutions to promoting eco-friendly infrastructure, which shows the commitment of the VOCPA towards reducing its carbon footprint and enhancing environmental resilience. Through initiatives such as renewable power installations, adoption of e-mobility, green hydrogen demonstration plant and pilot bunkering and refuelling facility for green hydrogen and derivatives, various pollution control measures and afforestation drives, the Port is steadily progressing towards becoming a model for **Sustainable Port in** India.

- **Renewable Energy Integration**

The VOCPA has aggressively moved towards renewable energy by expanding its energy infrastructure by installing a **5-MW ground-mounted solar power plant**, a **2-MW wind power plant**, and a **1.04-MW rooftop solar installation** within the port premises and is actively working towards fully electrifying its operations through renewable sources marking a decisive shift away from fossil fuel dependence. This move not only contributes to a reduction in the port's overall carbon footprint but also aligns with its commitment to provide renewable power for its operation thereby supporting sustainable growth.

As of June 2025, the VOCPA has generated **35.62 lakh units** of renewable energy during the first quarter of FY 2025–26, marking a **30% increase** from the **27.36 lakh units** generated during the same period in the previous financial year.

- **Shore-to-Ship Power Supply**

The VOCPA is the first port to introduce shore-to-ship power supply in 2016 and later implemented for port harbour crafts and small crafts. Presently, the VOCPA is in the process of implementing shore power supply systems

for coastal vessels and at later stage for EXIM vessels to minimize emissions from vessels while they are at port. This initiative will allow berthed vessels to switch off their diesel generators and plug into land-based power, significantly lowering greenhouse gas (GHG) emissions and improving local air quality.

Unfolding Future towards Sustainability

- **Electrification of Cargo Handling Equipment**

The VOCPA is steadily transitioning to electric and hybrid cargo handling equipment, phasing out conventional diesel-powered systems. This initiative contributes not only to emissions reduction but also ensures compliance with international environmental norms and standards.

- **Green Cover at VOCPA**

The port actively promotes mangrove afforestation along its coastal stretches, serving as a vital component of VOCPA's climate adaptation strategy.

These initiatives help preserve marine biodiversity while providing a natural defence against storm surges and coastal erosion.

Enforcement of Sustainable Policies for a Greener Future

The VOCPA is advancing its commitment to environmental stewardship by enforcing sustainable policies that foster a cleaner and greener future.

- **Green Policy**

A comprehensive Green Port Policy is formulated and adopted that emphasizes sustainable growth while minimizing the environmental footprint of port operations. This policy outlines actionable commitments across the following focus areas:

- Energy Efficiency and Renewable Energy Use
- Air and Water Quality Management
- Waste Minimization and Management
- Shoreline and Marine Ecosystem Protection

- Sustainable Infrastructure and Smart Technologies
- Stakeholder and Employee Awareness

The policy serves as the foundation for VOCPA's green journey and is reviewed periodically to ensure continuous improvement and progress towards sustainability.

Through its dedicated Green Policy and category-aligned efforts under the Harit Sagar framework, the VOCPA is setting a benchmark for green port governance. These efforts reaffirm the port's resolve to be environmentally progressive, economically productive, and socially responsible embodying the true spirit of a sustainable maritime gateway.

- **Plastics Elimination at VOCPA**

In alignment with the 'Swachh Sagar' mission, the VOCPA has enforced a strict **'No Plastic'** Policy that prohibits the use of single-use plastics (SUPs) such as plastic carry bags, cups, straws, packaging films (below 50 microns), and decorative flex items. The port actively promotes the use of cloth, jute, and paper bags, along with

steel, glass, ceramic, bamboo utensils, and biodegradable alternatives.

To encourage a broader behavioural shift, every employee was gifted a **reusable jute bag**, inspiring them to make environmentally responsible choices even in their personal routines, like grocery shopping. This holistic approach engaging employees, vendors, contractors, and visitors reinforces VOCPA's leadership in creating a plastic-free and sustainable port environment.

- **No Smoking Policy at VOCPA**

As part of its commitment to health, safety, and a clean working environment, the VOCPA has implemented a strict **No Smoking Policy** across its premises. This policy aims to protect employees, visitors, and stakeholders from the harmful effects of tobacco smoke, promote wellness, and ensure compliance with national health regulations. Signage has been prominently displayed throughout the port area, and awareness campaigns are regularly conducted to reinforce the importance of maintaining a smoke-free environment.

Future Energy Security

The VOCPA, blessed with abundant solar and wind resources, is establishing itself as a hub for offshore wind and green hydrogen.

- **Offshore Wind Hub**

The port is set to play a key role in India's clean energy future, having been designated as an Offshore Wind Energy Hub by the Ministry of Ports, Shipping and Waterways (MoPSW) and the Ministry of New and Renewable Energy (MNRE).

A recent study by the National Institute of Wind Energy (NIWE) has identified a remarkable potential of 20 to 30 GW of offshore wind energy along the southern coast of Tamil Nadu. Recognizing this opportunity, the Government of India has given its Cabinet approval for the development of offshore wind energy in the region and sanctioned a Viability Gap Funding (VGF) of ₹300 crore specifically for the VOCPA.

In line with this, the VOCPA has commenced action towards the construction of necessary berthing facilities. The port is also well-positioned to offer adequate land and berth space for industries engaged in the manufacturing and deployment of offshore wind equipment and infrastructure.

- **Green Hydrogen Hub**

The VOCPA has also been declared a Green Hydrogen Hub by the Government of India. This positions the port as a key enabler in India's green fuel roadmap, with potential infrastructure planned for production, storage, and export of green hydrogen and its derivatives, the future fuel for generations to come.

The VOCPA has established a Green Hydrogen Demonstration Plant, making it the first port in the country to produce green hydrogen. The plant features a **Proton Exchange Membrane (PEM) electrolyser with a capacity of 50 kW**, capable of producing **10 NM^3 of hydrogen**, along with a **15 kW PEM fuel cell** for energy conversion. Hydrogen is stored using a **cascade cylinder system with an 8 kg storage capacity**, enabling practical demonstration of green hydrogen applications in port operations like electrifying streetlights, deploying hydrogen bus and truck/lorries, which substantially reduces carbon emission in future.

Sustainable Maritime Leadership

Through these holistic measures, the VOCPA is striving to fully comply with green mandates and is championing **sustainability as a strategic goal.** The port's green/sustainable vision, its systematic, proactive, execution-oriented, and well-calibrated approach in mission mode demonstrates that green growth and economic progress are not mutually exclusive but mutually reinforcing.

With its long-term vision, technological adoption, and ecological stewardship, the VOCPA is well on course to become one of India's greenest and most efficient major ports.

Sustaining Coastal Ecosystems: A Study of Mangrove Plantation Efforts by DPA

Deendayal Port Authority (DPA) is one of India's major ports that handles large amounts of cargo. The port encompasses a large coastal area with extensive mangroves (193.1 km2) and mudflats (312.9 km2). The port authorities are committed to preserving and enhancing these coastal habitats. However, the construction and operation of port facilities can have a substantial impact on the local ecology. Therefore, efforts are being made to conserve and protect the DPA mangrove area to maintain its ecological services. This has led DPA to undertake a 1600-hectare mangrove plantation project from 2005-2023 in locations like Sat Saida Bet, Nakti creek, Kantiyajal among others. Evaluation of this planting endeavour for which 1600 hectares the work order has been handed over to Gujarat Institute for Desert Ecology (GUIDE), Bhuj. The conservation measures have been undertaken with the involvement of state and central government departments as well as local communities towards restoring and protecting the mangrove stands. The present study will primarily focus on assessing the current status of mangroves at Sat Saida Bet and Nakti Creek in Kandla (Kachchh/Kutch), as well as at Kantiyajal in the Bharuch district. The assessment will cover ten blocks spanning approximately 1,400 hectares, where mangrove plantation monitoring activities—covering a total of 1,600 hectares—were carried out by the Deendayal Port Authority (DPA) and the Gujarat Institute of Desert Ecology between 2005 and 2019. However, the present study (2024–2025) will also cover the additional 200 ha plantations carried out at Sat Saida bet (100 ha) and Kantiyajal (100 ha) during 2021 and 2023 with a total coverage area of 1600ha. The primary goal of this study is to assess the survival rate of mangrove plantations and the carbon sequestration potential of the planted mangroves and suggest achievable conservation measures. (Source: DPA)

Construction of Covered Shed at Berth No. 5A & 6A by PPP operator M/s SWPL

- Licence Agreement signed on 11.04.1999 with the M/s South West Port Ltd. (SWPL) (former M/s. ABG Goa Port Ltd.) by the Mormugao Port Authority (MPA) (former Mormugao Port Trust) for the Construction and operation of Berth No. 5A & 6A on BOOT basis for a period of 30 years.
- South West Port Limited (SWPL), the JSW Infrastructure Limited's vertical of JSW Group of Companies operates these berths since 1999.
- This Port Terminal has 2 berths, an export berth (Berth no. 5A) for exporting break-bulk cargo primarily consisting of hot and cold rolled steel coils, steel slabs, wire rod coils and other long products with a capacity of 2.0 MMT and import berth (Berth no. 6A) to handle all types bulk cargo, viz., coal/coke, limestone/dolomite, iron ore through a state-of-the-art fully mechanized system with a current capacity of 9.0 MMT.
- Prior to construction of the covered shed, SWPL was following best environmental practices, to control fugitive dust by providing suppression screen, covering of coal heap with tarpaulin in all seasons, mechanized sweeping, installation of vertical gardens across periphery, sprinkling of water on coal stack, etc.
- In addition to the above, SWPL has taken the initiative to construct a covered shed as an additional environmental protection measure to control fugitive dust particles from being carried away by the wind, thereby significantly reducing potential pollution in the surrounding areas.
- The covered shed, a totally brownfield project, is constructed by SWPL at a total cost of Rs. 160 crore and one-of-its-only-kind in Goa in terms of size and area covered, took 18 months to construct under challenging conditions by simultaneously continuing with its bulk cargo operations to near full capacity.
- The shed measures 320 metres in length, 135 metres in width, and 45 metres in height, covering an area of 43,200 sq. m and capable of storing over 200,000 MT of bulk cargo. The shed is constructed on 343 piles of 1,000 mm diameter, with an average depth of 30 metres, supported by 86 pile caps. The steel structure is 4000 MT with sheeting coverage of 60,000 sq. m. It is also equipped with modern water sprinkling and firefighting systems. Construction of shed was completed in April 2025. With this infrastructure in place, fugitive emissions and its impact on the environment and public is now fully mitigated.
- The covered shed accommodates all three bulk material stockpiles, two stacker-reclaimer machines and the associated yard conveyors. SWPL is now equipped to handle up to 13.0 MMT of all types of bulk cargo.
- This is a major milestone in SWPL's portfolio as well as that for MPA.

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News Highlights

World's first' LCO2/methanol carrier gets stamp of approval

June 30, 2025|
Source: Offshore Energy

Japanese shipping giant Mitsui O.S.K. Lines (MOL) and Mitsubishi Shipbuilding, a subsidiary of Mitsubishi Heavy Industries (MHI), have received approval in principle (AiP) for a jointly developed vessel designed to transport liquefied CO_2 (LCO_2) and methanol.

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VOC Port sets new milestones, reinforcing its strategic role in India's maritime growth

June 28, 2025|
Source: Offshore Energy

V.O. Chidambaranar Port in Tuticorin crossed 10 million tonnes in cargo handling for FY 2025–26, with a 5.24% rise in container cargo. It also set a new single-day cargo record of over 205,000 tonnes. These milestones underscore the port's expanding capacity and key role in India's maritime trade. Read More...

New green hydrogen facility in Norway aims to launch in 2028

June 26, 2025|
Source: Hydrogen Europe

Karmsund Hydrogen and HydePoint have teamed up to develop a green hydrogen plant at the Karmsund Group's Service Base in Norway, targeting emission cuts in local industry. The facility will supply both maritime and onshore users and aims to produce over 3,000 tonnes of hydrogen annually using 20 MW of electrolysis capacity.

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DNV awards SeaTech Solutions AiP for new ammonia bunkering vessel design

June 18, 2025| Source: DNV

DNV has granted Approval in Principle (AiP) to SeaTech Solutions for a new 10,000 m^3 ammonia bunkering vessel design.

The vessel will support ammonia refuelling for dual-fuel bulk carriers in Australia's Pilbara region.

It features advanced safety systems and smart transfer technology for efficient bunkering. This marks a key step in developing green ammonia infrastructure for maritime decarbonization.

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Port of Brisbane sets out Vision 2060 to future-proof trade and drive sustainability

June 11, 2025|
Source: Offshore Energy

Australia's Port of Brisbane (PBPL) has unveiled Vision 2060, a long-term strategy focused on boosting Queensland's economic growth, future-proofing trade infrastructure, and steering the port towards enhanced sustainability and operational efficiency.

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Alternate Fuels for Maritime Sector

Heavy fuel oil (HFO) and marine diesel oil (MDO), widely used in shipping, emit high levels of SOx, NOx, and CO_2, major contributors to air pollution and climate change. A single large EXIM ship can match the emissions of **up to 2.5 million cars**, highlighting the sector's environmental impact, which accounts for **18–30% of global GHG emissions**.

To curb this, the **IMO 2020 regulation** slashed permissible sulphur content in marine fuels from **3.5% to 0.5%**, cutting sulphur oxide emissions by **70%** and improving air quality near coasts and ports. This shift is driving the adoption of **alternative or green fuels,** aimed at decarbonizing maritime transport.

Some of the green fuels available for the maritime sector include— green ammonia, green hydrogen, green methanol, LNG, and biofuels. Below are some examples of ports that are making the use of alternate fuel for their operations.

- **V.O. Chidambaranar Port Authority (VOCPA) (Tamil Nadu):** Has initiated a green methanol bunkering pilot project in 2025, making it the first Indian port to establish such infrastructure. This initiative aims to provide green methanol for vessel propulsion and port operations, aligning with India's commitment to reducing maritime emissions. Read More...
- **Mumbai Port, Maharashtra:** In August 2024, Bharat Petroleum Corporation Limited (BPCL) launched India's first biofuel-blend High Flash High Speed Diesel (HFHSD) bunker, (hydrotreated vegetable oil) at Mumbai Port, positioning it as a leader in sustainable marine fuels and global decarbonization efforts. Read More...
- **Port of Amsterdam (Netherlands):** Completed its first ship-to-ship green methanol bunkering, refuelling the Boreas offshore vessel with ~500 metric tonnes (MT) of methanol. Read More...
- **Port of Singapore:** Hosted the world's first ammonia bunkering trial with the Fortescue Green Pioneer dual-fuel vessel. Read More...

DID YOU KNOW?

The Rotterdam-Singapore Green and Digital Shipping Corridor (GDSC) partners have conducted a successful pilot for the bunkering of mass-balanced liquefied bio-methane at the Port of Rotterdam. This initiative supports the adoption of near-zero emission fuels along one of the world's busiest shipping trade routes. Read More...

Green Initiatives

National Initiatives

To combat water scarcity and promote sustainable development in Kutch, India, the Deendayal Port Authority (DPA) has teamed up with KRIDA and Global Kutch to initiate a significant project focused on reviving the Bhukhi River. Source: PIB India

V.O. Chidambaranar Port Authority is dedicated to establishing a plastic-free and eco-friendly port environment. It has adopted the policy that focuses on systematically phasing out single-use plastics (SUPs), reducing plastic waste, promoting sustainable alternatives, and safeguarding both marine and land ecosystems, all in support of Sustainable Development Goals 12, 14, and 15. Source: V.O. Chidambaranar Port Authority

The Deendayal Port Authority (DPA), Kandla, has partnered with DNV to assess its Port Readiness Level (PRL) for bio-methanol bunkering. This initiative aims to position DPA as a green fuel bunkering hub, aligning with India's maritime decarbonization goals and global green shipping corridors. Source: India Shipping News

Demonstrating its dedication to sustainability and clean energy, the Mormugao Port Authority (MPA) commissioned a 3MWp / 2.25-MW grid-connected solar power plant to mark this year's World Environment Day. Source: Allycaral

Under the Deendayal Kaushal Vikas Programme, DPA organized a green hydrogen training course in collaboration with the Gandhidham Collegiate Board in June, 2025. Twenty-eight participants received certificates at a valedictory ceremony chaired by the DPA Chairman, enhancing technical capacity in clean energy. Source: ANI News

International Initiatives

Norway's Miros, in collaboration with Brazilian navigation and automation specialist Belga Marine, has enhanced its oil spill detection system for offshore operations in Brazil. To achieve this, a cloud-based add-on will be integrated into the existing monitoring software offshore Brazil, enabling secure real-time data sharing with multiple stakeholders.
Source: Offshore Energy

The Port of Aberdeen is delivering green shore power to vessels at eight berths in its North Harbor, marking Scotland's largest maritime decarbonization initiative. This system allows ships to connect directly to the port's renewable energy supply instead of using fossil-fuel engines while docked, cutting fuel use, carbon emissions, pollution, and noise. Source: Sea News

Fratelli Cosulich Marine Energy and IINO Lines have announced a strategic partnership to advance maritime decarbonization. They've signed a Memorandum of Understanding to jointly explore opportunities in alternative marine fuels, including methanol, LNG, and ammonia bunkering, strengthening their long-standing collaboration.
Source: Offshore Energy

Swiss engine maker WinGD, in partnership with COSCO Shipping Heavy Industry (Yangzhou) and CMD, has completed sea trials of its methanol dual-fuel engine. The trials confirmed successful integration with safety and methanol supply systems, validated engine performance using methanol with heavy fuel oil as pilot, and passed all inspections in one go.
Source: Port News

DCAS and NYC DOT have started fully converting the Staten Island Ferry fleet to renewable diesel, beginning with the delivery of 336,000 gallons of hydrogenation-derived renewable diesel. The fleet, which uses about 4.5 million gallons annually, is transitioning from traditional diesel to support New York City's goal of cutting greenhouse gas emissions by 50% by 2030. Source: NYC Gov.

Upcoming Events

INMEX SMM India

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

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17th Annual New York Maritime Forum

October 14, 2025, Metropolitan Club, New York City, USA

Read More...

Digitalised Smart Ports Conference

October 15–16, 2025, Valencia, Spain

Read More...

Zero Emissions Cruising Conference

November 17–18, 2025, Bergen, Norway

Read More...

Maritime Policies & Guidelines

2024 Guidelines for the Development of a Ship Energy Efficiency Management Plan (SEEMP)

The policy strengthens the requirements for tracking and reducing greenhouse gas emissions from ships. The guidelines require detailed fuel use reporting by equipment type, stricter carbon intensity planning, and audits every three years for large ships, thus advancing IMO's push for greener shipping. Source: IMO

National and regional policy for green shipping corridors

This policy brief provides an overview of national policies for international shipping decarbonization, outlining how countries can support the transition towards zero emissions, complementing private sector and global efforts. Source: Global Maritime Forum

DID YOU KNOW?

According to a new CCUS report by energy consultancy Xodus, the Asia-Pacific region is poised to dominate the CO_2 shipping market, with a demand for nearly 80 specialized vessels for interregional transport by 2055. Japan and Korea are identified as the main drivers of CCUS demand in the region. Read More...

Latest Announcements

- AVTL, a joint venture between Aegis Logistics and Vopak India, has announced plans to build India's first independent ammonia storage terminal. Designed as a third-party marine facility, the terminal will have a capacity of around 36,000 metric tonnes and is slated for commissioning by the end of 2026. Source: PortNews
- Union Minister Shri Sarbananda Sonowal inaugurated the first ASEAN–India Cruise Dialogue in Chennai to boost regional cruise connectivity and sustainable tourism. Delegates from all ASEAN nations and Timor Leste joined the event aboard MV Empress at Chennai Port. India plans to develop 5,000 km of navigable waterways to strengthen ties with ASEAN. Under the Sagarmala initiative, cruise traffic is targeted to reach 1 million passengers by 2029. Source: PIB India
- Chennai Port Authority is renewing efforts to develop the Outer Harbour Project after two failed attempts over 18 years. The project aims to expand capacity and accommodate larger vessels to boost the port's competitiveness. New planning is underway to overcome past challenges and advance the initiative. Source: The Hindu
- India launched its first maritime-focused Non-Banking Financial Company, Sagarmala Finance Corporation Limited (SMFCL), to address financing gaps in the sector. SMFCL will support ports, shipping, shipbuilding, renewable energy, and maritime education. This initiative aligns with India's Maritime Amrit Kaal Vision 2047 to strengthen maritime infrastructure and growth. Source: Maritime Gateway

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: July 30, 2025

Send to: ncoegps@green-port-shipping.org/reetas@teri.res.in

Together Towards a Greener Future

For feedback and contributions email us at: ncoegps@green-port-shipping.org