

Incorporating Sustainability Agenda and Implementing Green Port Initiatives



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Navigating Sustainability & Green Initiatives in Ports

Beyond handling cargo



Global & Regional Context

Sustainability in Ports

Challenges for Small Regional
Ports

Green Port Initiatives

Technology & Innovation

Importance of Collective Action for
the future

Conclusion

Delving into the intricate realms of Port Management

- **Global Cargo Trade:**

Maritime Transport Dominates 80% of Global Cargo Trade

- **Climate Changes' Impact on Sea Levels:**

Anticipated Sea Level Rise of 1.1 to 2 meters by 2100, threatening Multiple Ports

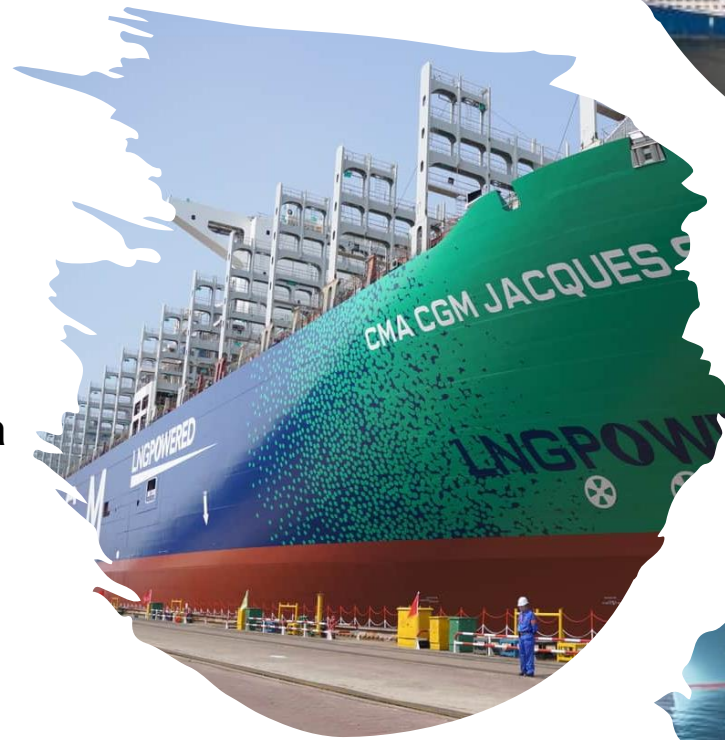
- **Maritime Transport's Carbon Footprint:**

Maritime Transport's Environmental Impact:
3% of Global CO2 Emissions, an Alarming 32% Increase over the Last Two Decades.
Projected to Constitute 17% by 2050



Managing Transition to Decarbonization Amidst Industry Dynamics

- A dynamic industry despite trade trend: unstable freight rates after a sharp decrease in 2023
- Record 7,54 mteus on order book: 57% of the new orders should involve clean energy (LNG, Methanol...). Forecast for teu ships emissions is a peak in 2025, then a swift drop to 19.6 mt by 2050, aligning with the IMO's goal of net-zero emissions by around 2050
- 80 new cruise ships have been and are being delivered between 2022 and 2028: The industry aims for zero-emission vessels and fuels by 2030 and 'net-zero carbon' cruising by 2050



Sustainability in Ports

No longer an option:

Vital for ports:

Contribute significantly to emissions due to ship traffic, port machinery, logistics activities...

Increasing awareness of impacts of maritime trade & port activities

Adopting Sustainability:

Resilience to Climate Change → protect from future climate-related disruptions, safeguard infrastructures...

Protection of local marine ecosystems

Economic Efficiency → long term cost savings, attract green business, new skills in management & create opportunities for workforce development

Industry Leadership → create new industry standards

Social Benefits → urban ports = social responsibility

Enhance image → source of national pride & contributes social fabric of surrounding community



Global & Regional Contexts

Global Trends & Regulatory Pressure:

- **International Maritime Organization (IMO):** ambitious targets to reduce GHG emissions from international shipping by at least 50% by 2050.
- **European Union's Green Deal:** carbon neutrality by 2050. European ports are expected to lead the way by becoming emission-free hubs that champion renewable energy and circular economy principles.
- **UN:** zero carbon by 2050 + 2 major SDGs → **SDG 9:** Industry, Innovation, and Infrastructure & **SDG 13** → Climate Action

Regional Context (Indian Ocean & Small Island Ports):

- Exploring solar energy installations and pollution control measures to protect the surrounding marine environment
- Green port technologies to support maritime industry
- Adopting sustainable port practices to (environmental protection, marine biodiversity)

Challenges for Small Regional Ports in their Journey to Sustainability

Limited Financial and Technical Resources

Budget Constraints, Access to Funding, Technical Expertise

Infrastructure constraints

Aging Infrastructure, Limited Capacity for Expansion, Adaptation to New Requirements

Dependence on traditional energy sources

Fossil fuels, Grid Limitations, Fuel for Shipping

Limited influence on global shipping regulation

Dependence on International Shipping Companies, Complex Regulatory Environment, Limited Role in Global Supply Chains

Green Port Initiatives



Waste Management:

Reducing plastic and hazardous waste
Sustainable waste processing systems



Water Conservation:

Efficient use of water resources
Pollution control mechanisms



Green Infrastructure:

Sustainable building designs
Shore power for ships (cold ironing) when possible



Low-Cost, High-Impact Solutions:

Solar panels for energy
Green waste management systems

Green Port Initiatives

Ports as Clean Energy Hubs are key battle-fields, essential in the process of energy transition towards cleaner transport



Green Port Initiatives

Energy Efficiency

Onshore Power for Ships:

Use of Electricity as OPS

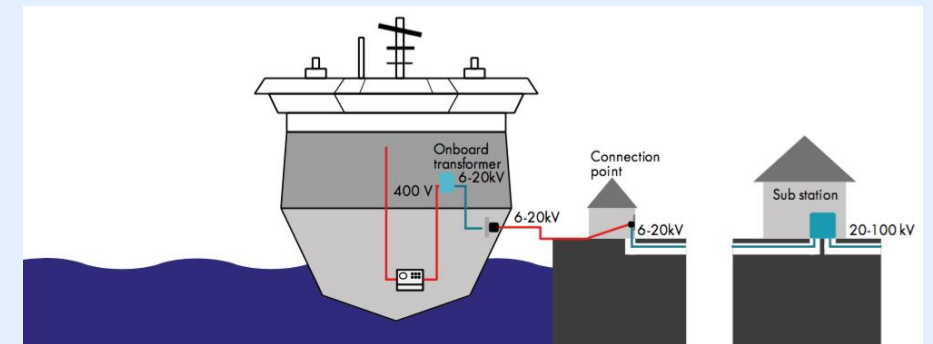
Industrial electricity grid if renewably powered:

Solar
Tidal
Wind



The [European Alternative Fuels Observatory](#) defines OPS as:

Ships can shut down their engines while berthed and plug into an onshore power source, the ship's power load is transferred to the onshore power supply without disruption to onboard services. Emissions to the local surroundings are eliminated.



Role of Onshore Companies in Green Port Initiatives



Stevedores (Dock Workers):

Efficiency in Cargo Handling & Adoption of Electric Equipment
Training and Capacity Building



Trucking and Logistics Companies:

Electrification of Truck Fleets
Route Optimization and Smart Technology
Adoption of Sustainable Logistics Practices



Warehousing and Storage Facilities:

Energy Efficiency
Sustainable Building Practices
Integration with Port Sustainability Goals for holistic green supply chains



Collaboration Across the Supply Chain:

To adopt unified sustainability standards and share best practices
Meet & set measurable sustainability targets

Technology & Innovation

Smart Ports:

Digital transformation to optimize operations

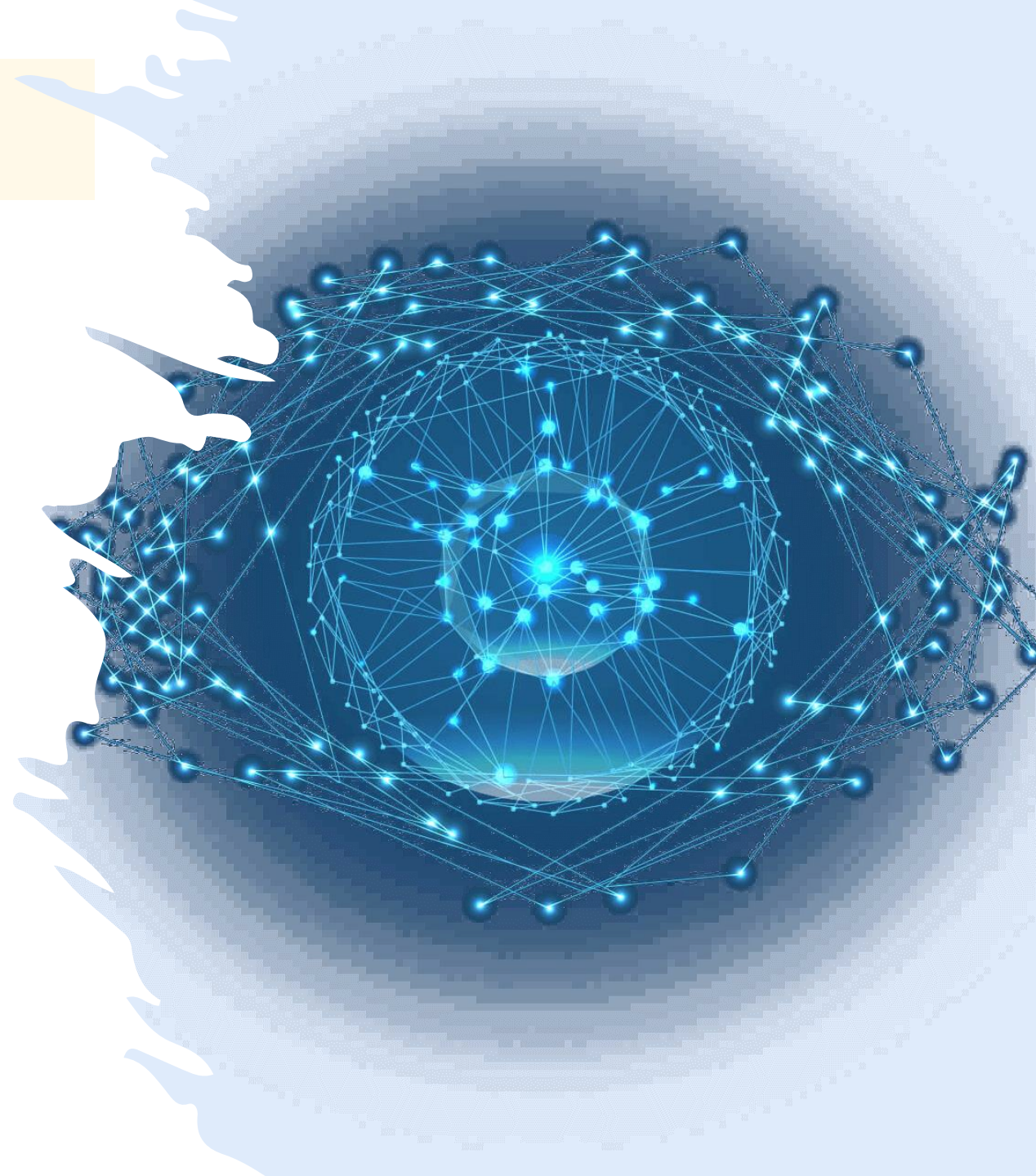
Energy management systems

Monitoring Systems

Real-time pollution tracking and monitoring

KPIs:

Measure Progress...



Green Port Initiatives Require Financing



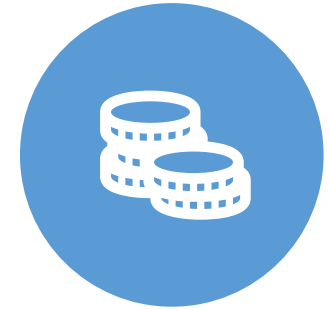
**INTERNATIONAL AND
REGIONAL FUNDING**



**PUBLIC-PRIVATE
PARTNERSHIPS (PPP)**



GREEN BONDS



**CARBON CREDIT
TRADING**

Collaboration with Shipping Lines

Quoting “Intl Chamber of Shipping Chairman, E. Grimaldi” in an IAPH newsletter:

“Shipping along with its stakeholders recognize that to decarbonize, we cannot work in silos anymore. Decarbonization is a global challenge bigger than any one industry or government, so achieving our goals requires joined up thinking on a global scale”

Quoting P. Verhoeven of IAPH joined by IMO:

“A strong signal to the global business community and regulators is that shipping and ports stand together. Not just when it comes to decarbonizing the maritime sector, but also in facilitating the transport and distribution of zero-carbon fuels”



Collaboration between Ports

Despite « friendly competition »

→ Partnerships and Collaboration with Neighboring Ports to share best practices, resources, technology

→ Joint initiatives can enhance sustainability efforts and lead to cost-sharing opportunities.



Conclusion

Understanding Green Ports:

→ Importance of sustainability in port operations and its alignment with global sustainability goals

Challenges and Opportunities:

→ Small regional ports face unique challenges, yet they also stand to benefit significantly from green initiatives through improved environmental performance, economic advantages and enhanced community relations.

→ Practical, low-cost solutions that can lead to substantial impact, underscoring the importance of phased implementation

Conclusion

The Indian Ocean Region poses a wide range of Challenges

A spectrum of Diverse Avenues for Collaborative Endeavors & Cooperation Opportunities:

→ Necessity of collaboration among stakeholders, government, port authorities, shipping companies, and local businesses to drive effective green practices.

→ Collective efforts: Amplify impact and facilitate development of regional sustainability goals, foster healthier ecosystems, enhance resilience and competitiveness of small regional ports in the future.

→ Learning from peers and sharing best practices



**Thank you for
sharing your
valuable time!**



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