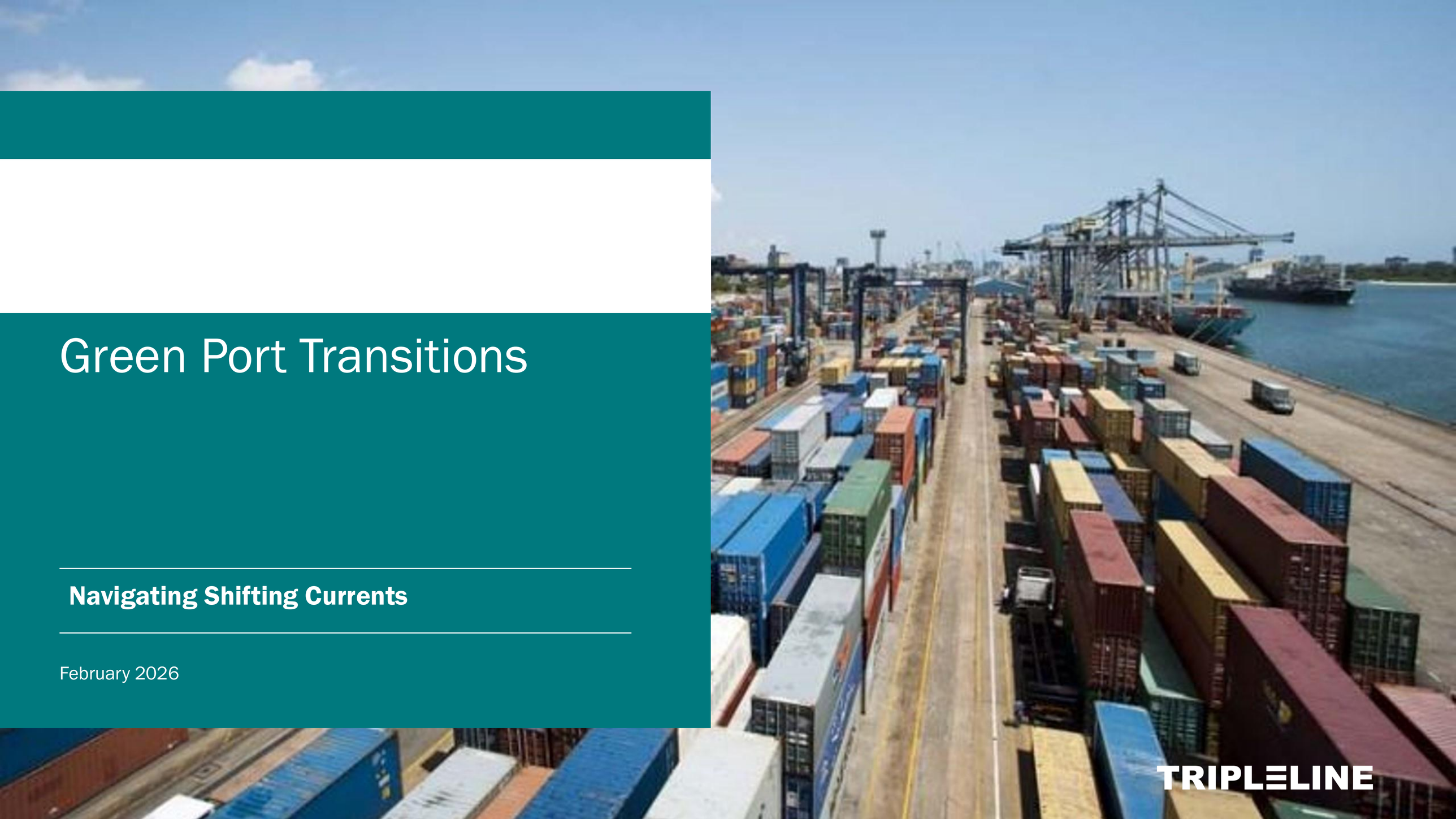
Green Port Transitions

Navigating Shifting Currents

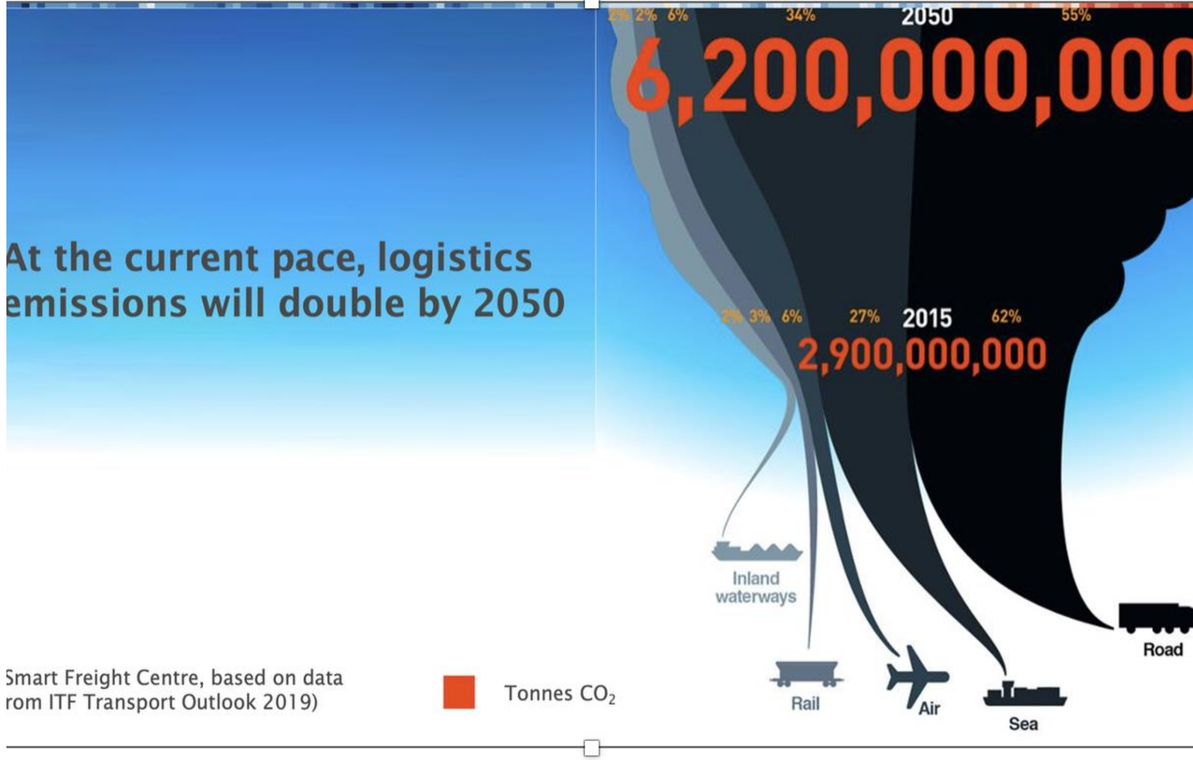
February 2026



TRIPLELINE

Navigating Shifting Currents

1. Drivers of change: Policy, markets & incentives
2. Responses: Port Authorities and Terminal Operators
3. Navigation Aids I: Ports are parts of multimodal logistics systems / communities
4. Navigation Aids II: Technology Solutions – RE, Automation, Digital, GHG mitigation
5. Making the Connections: Green transition initiatives are integral to risk management and access to finance



Signposts

- Green Port Transition is part of a wider decarbonisation of economic activities
- Managing climate / environmental risks are increasingly part of business as usual
- Improving port efficiency is a primary response – strong alignment between profitability, productivity and green transition
- Technology solutions are evolving, depend on logistic chain interdependencies and need to be market driven to sustain uptake

Drivers of Change

- *Policy Drivers* are operating at three levels:
  - International Agreements: Net Zero
  - National Policy Priorities / Investment
  - Local Plans/Regulations

- *Leading to … changes in*

- Markets and Incentives
  - Competition: How ports and terminals compete – pricing and services
  - Port Regulation: Greater attention to climate risk management

IAPH Managing Director Patrick Verhoeven *said, "The Global Port Sustainability-Linked Loan initiative marks an important step forward for further collaboration between ports, loan providers, and regulators. These land-based investments can fund long-term infrastructure and support offtake agreements for low and zero-carbon shipping fuels and liquid bulk transport.* This initiative complements IAPH's work on the Clean Energy Marine Hubs (CEM HUBS) initiative, which aims to import, export, bunker, and where feasible, produce clean energy sources and zero and near-zero emission fuels.

Responses to Change

- **Scale of Response:** $1-2 trillion investment by 2050 shore power electrification, zero-emission cargo-handling equipment. alternative fuel bunkering infrastructure.

- **Port Authorities**
  - New CAPEX requirements to accommodate decarbonization transition
  - New procurement / concession requirements
  - New KPIs

- **Terminal Operators**
  - Concession bid strategies
  - New investment strategies
  - New competitive offers to clients

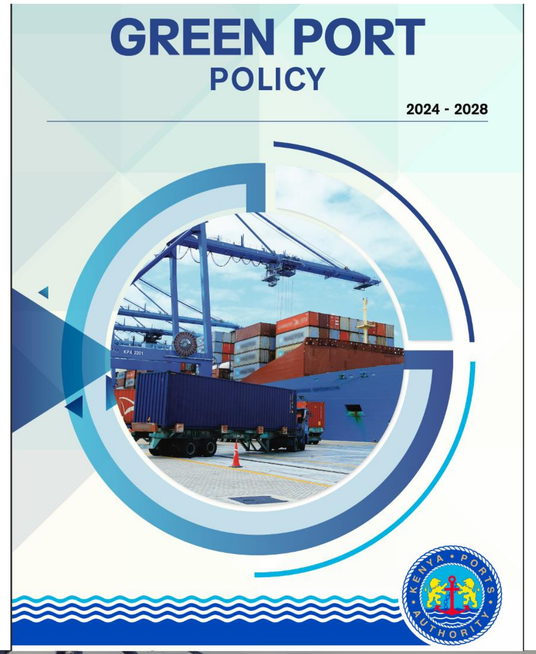
IFC / IAPH / C40

Global Port Sustainability-Linked Loan (SLL)

$1bn – 3 years to bridge financing gap / de-risk

Eligible: Green maritime infrastructure investment

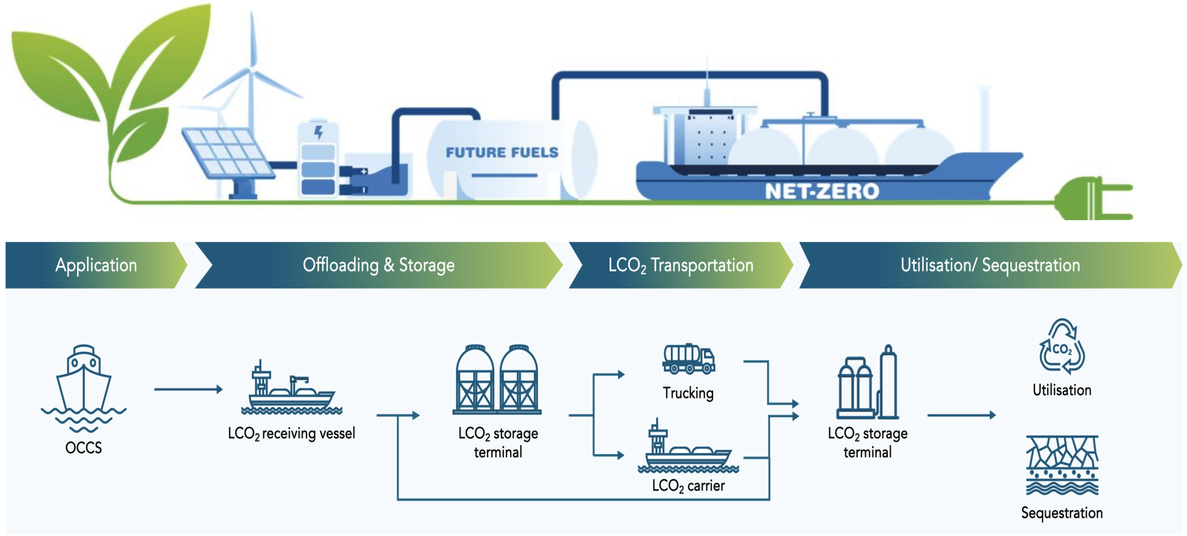
Target: Global South ports



Navigation Aids

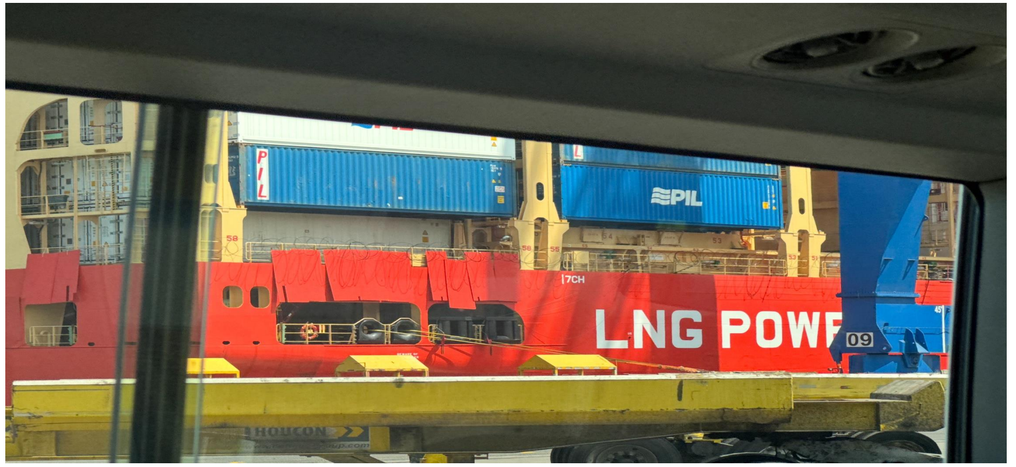
- I - Ports are parts of **multimodal logistics systems**
  - Implementing green port initiatives requires collaboration through the value chains
  - Multi-stakeholder partnerships beyond the port gate – marine and landside

- II - Technology Solutions
  - Electrification: Transition from diesel towards RE across all operations
  - Automation
  - Digital / AI to optimise operations throughout – route planning / cargo handling
  - Land based reception facilities complement Onboard Carbon Capture Systems (OCCS)



Sources: IMO (various), Port Technology International, Global Centre for Maritime Decarbonisation

Making the Connections



- Ports are “strategic” interfaces in the net-zero energy transition: trade gateways linking maritime and inland logistics systems / “hosts” to next generation transport systems and technologies.

- Green transition initiatives are integral to port risk management and operations and now part of BAU : this applies equally to intermodal

- Green port transition enhances access to finance, especially from IFIs – need to enhance wider economic benefits and climate impact

- **End to End Efficiency: <GHG emissions and profitability**

Green Port Transition	Response	Stressors
Electrification	Onshore Power Systems Technology Adjustments / cranes EVs: Inside & Outside the Gate Alternative Fuels	Grid reliance & capacity /Source of clean GRID power Land availability on port land / terminals – Approval / Clearances Managing loads / surge Alternative fuels – limited take up – CAPEX ? Incremental investments / hybrid solutions
Carbon Capture (OCCS)	Onshore reception facilities to match demand Work to create common standards	Co-ordination of CAPEX to match supply and demand OCCS impairs ship performance– 10% penalty : 20% capture / reduce payload
Logistic Chain Integration	Green Shipping & Economic / Transport Corridors	Aligning customers needs – managing cargo movements and handling

Thank You

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