

Greening Efforts of Ports in Indonesia

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What are the tools that can green ports?



Pricing Policy



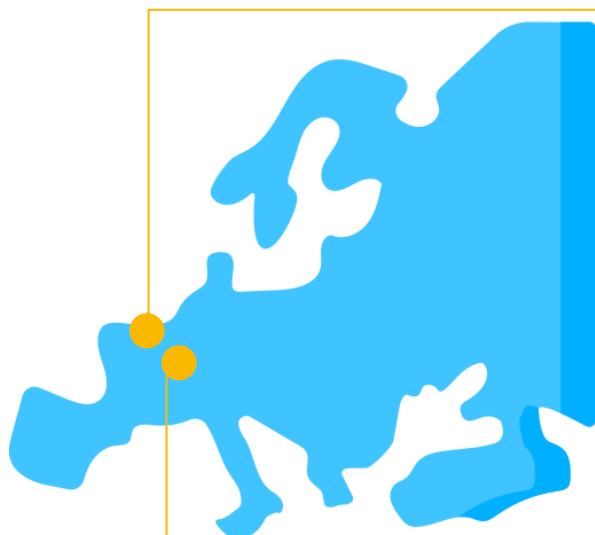
Monitoring and
Measuring



Market Access Control
& Environmental Standard Regulation



Case Study of 'Pricing Policy'



Port of Rotterdam (NL): a 10% surcharge to docking fees for barge operators using fuel with sulfur levels near the upper limit

Port of Antwerp (BE): sea-going ships with a score of ESI 31 or more get a discount of 10% on tonnage dues



Port of Singapore: burning clean fuels with low sulfur content beyond Singapore's requirement
→ a 15% reduction on port dues



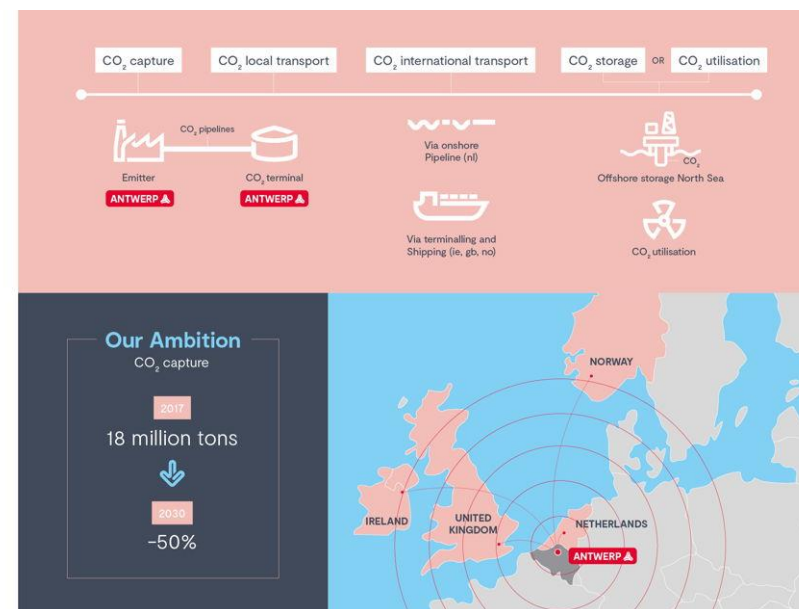
Case Study of 'Monitoring and Measuring'



Translating the port vision into actions,
Define KPI (Key Performance Indicator)

Antwerp@C

8 players in chemical & energy sector investigate feasibility of carbon capture, utilisation and storage in Port of Antwerp



Antwerp@C, Software to track emission in Port of Antwerp



Case Study of 'Market Access Control & Environmental Standard Regulation'

The international standard affects the regional, national, and local regulation



Maritime Singapore Green Initiative

Green Ship Programme

Green Port Programme

Green Energy and Technology Programme

Green Awareness Programme

How does the government of Indonesia respond to climate change?



Source: Ministry of Transport, 2023

What measures relating to green ports have been enacted in Indonesia?



Coordinating
Ministry of Maritime
Affairs of Indonesia

GREEN PORT CRITERIA KEMENKOMARVES (TH. 2022)

MANAGEMENT ASPECT

1. Commitment & Green Port Implementation Policy
2. Green Port Promotion
3. Community Development

TECHNICAL ASPECT

3. Port Management
4. Management of Supporting Transportation
5. Sustainable Dredging & Reclamation
6. OHS Implementation
7. Cargo & Material Handling
8. Minimization of Noise Impact
9. Air Quality Management
10. Water Quality Management
11. Waste Management
12. Energy Management
13. Climate Change Mitigation
14. Management of Biodiversity at Port

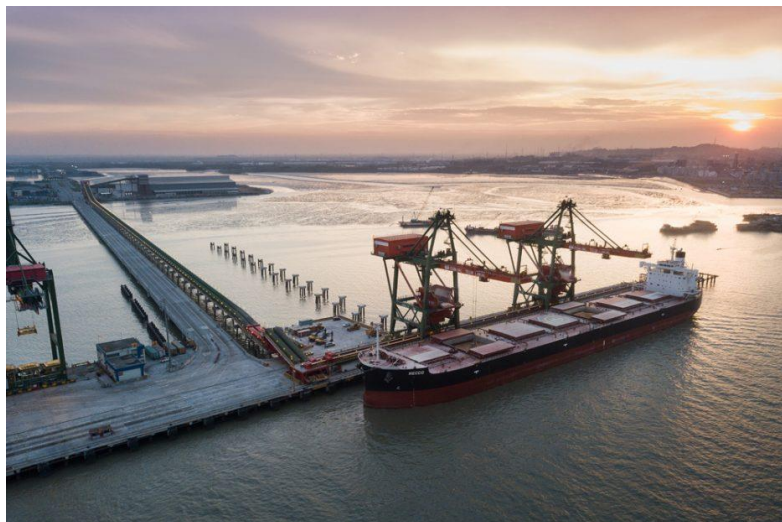


Ministry of
Environmental and
Forestry

PROPER Criteria

- AMDAL
- Control of air pollution
- Control of water pollution
- Control of dangerous and toxic waste
- Control of ocean water pollution
- Control of land use

What actions have industry players already implemented in Indonesia?



Terminal Teluk Lamong Green Port

- The first semi-automation port in Indonesia
- All port operation uses low energy: CNG trucks, ACS, electric STS, combined CTT, and docking system
- Electric GSU



Pertamina International Shipping (PIS) procured two Tanker Gas – Ammonia

- Very Large Gas Carriers produce lower emissions compared to HFO (Heavy Fuel Oil)
- 2 VLGCs: Pertamina Gas Tulip and Pertamina Gas Bergenia
- VLGC has dual fuel tanks to optimize low-sulfur fuel and gas
- The fuel utilization is 16% more efficient compared to the similar vessel

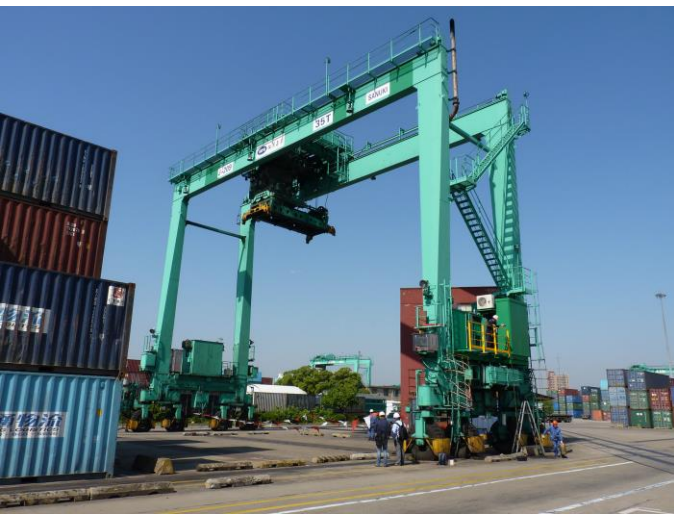
A case of cost saving in RTGC evolution in JICT, the biggest container terminal in Indonesia

Type of energy	Conventional Diesel	Optimized Diesel	Hybrid-Dual Power	Hybrid-Full Battery	Pure Electric
Consumption rate of energy	23 L/hour	19 L/hour	12 L/hour	8 L/hour	70 kWh/hour
Cost spent	US\$22	US\$19	US\$12	US\$8	US\$7

46% cost saving

68% cost saving

42% cost saving



Main issues in the greening port efforts in Indonesia



Non-existence of road map and policies



No clear incentive for industry players to shift to green port



Unreadiness of industry especially in shipbuilding



The dependence on the imported components X local content requirement

The World Bank in Indonesia initiated a study to help the Ministry of Transportation to establish a road map of decarbonization in the maritime transport



QnA

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