Support for green infrastructure

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World Bank programmatic approach

- Zero-carbon bunker fuels
  April 2021

- Role of LNG
  April 2021

- Carbon revenues
  April 2022

World Bank is observer at the International Maritime Organization
1 Development opportunities – major opportunities for countries and ports in decarbonizing shipping

2 Regulatory framework – certainty is key to unlocking investments

3 Carbon revenues from international shipping – enabling an equitable energy transition
Realignment of the fuel market

Country with no or insignificant oil reserves, but large renewable energy resources

- Oil-Derived Fuels
  - Bunker Fuel Production for Conventional Shipping

- Hydrogen and Ammonia
  - Bunker Fuel Production for Zero-Carbon Shipping
  - Biofuels
  - Synthetic Carbon-Based Fuels
  - CO₂
The potential for zero-carbon bunker fuel production

- **Blue ammonia only**
- **First blue, then green**
- **Green ammonia only**

- High potential
- Promising potential
- Limited potential or insufficient data
Investment needs

Decarbonization by 2070

- 85% produced with SMR + CSS
- 88% produced with a mix of SMR + CSS and electrolysis
- 89% produced with electrolysis

Decarbonization by 2050

- 85.5% produced with SMR + CSS
- 87.5% produced with a mix of SMR + CSS and electrolysis
- 89% produced with electrolysis

Investment barriers

Investment barriers include **uncertainty** regarding:
- future **demand** for and **supply** of clean fuels
- evolution of policy and regulatory environment.

**Climate policy uncertainty** is associated with significant decreases in investment.

Uncertainty is a fundamental barrier to increasing climate finance. **Political leadership and policy interventions** are central to addressing this uncertainty.

Where are we now?

- **MID-TERM MEASURES**
  - **FINALIZED AND AGREED BY 2018–2023**
  - **FINALIZED AND AGREED BY 2023–2030 (planned to 2040)**
  - **BEYOND 2030**

**CURRENTLY TABLED AT IMO**

- Command and control measures
- Performance standard, fuel emissions standard, etc.
- Market-based measures
  - Cap-and-trade with free distribution of emissions allowances, or subsidies
  - Carbon levy or cap-and-trade with sale/auctioning of emissions allowances
- Non-revenue raising
- Revenue-raising

**Potential Revenues 2025-2050**
Total: $1 to $3.7 trillion
Annual: $40 to $60 billion
Potential carbon revenue use options
Most aligned revenue use options

**MARITIME TRANSPORT**

- Shipping’s decarbonization
  - Fleet upgrades and renewal
  - Zero-carbon bunker fuels & infrastructure
- Maritime transport infrastructure and capacity
  - Maritime transport infrastructure and services
  - Capacity enhancement
- Broader climate aims
  - Climate change mitigation
  - Climate change adaptation

**BEYOND MARITIME TRANSPORT**

Examples
Three main questions

Should carbon revenues **only** be spent on maritime transport?

- Likely to limit some countries’ ability to access revenues, including some SIDS and LDCs.
- Financing broader climate aims could help with equity and climate outcomes.

Which country groups could have access to carbon revenues?

- Developing countries, including SIDS and LDCs, as primary recipients.
- Share reserved for selected developing countries, including SIDS and LDCs.
- Developed countries could be complementary recipients.

What could a possible revenue distribution framework look like?

- Recipient
- Revenue use
- Financing terms
Possible revenue distribution framework

1. **Recipient lever**
   - **Share A**: Selected developing countries, including SIDS and LDCs
   - **Share B**: All developing countries
   - **Share C**: Developed countries

2. **Use lever**
   - **Shipping’s decarbonization**
   - **Maritime transport infrastructure and capacity**
   - **Broader climate aims**

3. Financing terms
   - **Lever**: Relaxe
   - **Stringent**
Key implications for policymakers and industry

Main findings: (1) Significant opportunities - (2) Policies needed - (3) Revenues as enablers

- Development opportunities in shipping’s energy transition
- Stringent policy at global level needed to drive the transition
- Carbon revenues from shipping can enable an equitable transition
Thank you.

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