

An aerial night photograph of a large port facility. On the left, several large red gantry cranes are visible, illuminated by their own lights. The foreground and middle ground are filled with vast stacks of intermodal containers in various colors, including blue, red, green, and yellow. A multi-lane highway runs through the center of the port, with a few vehicles visible. In the background, a city skyline and a hill with a tower are visible under a dark blue sky with some clouds.

International Trade and Climate Policy: Maritime Sector Decarbonization

Jonathan Lewis | Clean Air Task Force
EESI | November 2025

Clean Air Task Force (CATF):

- Founded in 1996.
- Headquartered in Boston, with global staff from Berlin to Brazil to San Francisco to China.

The Mission: Push the technology and policy changes needed to achieve a zero-emissions, high-energy planet at an affordable cost.

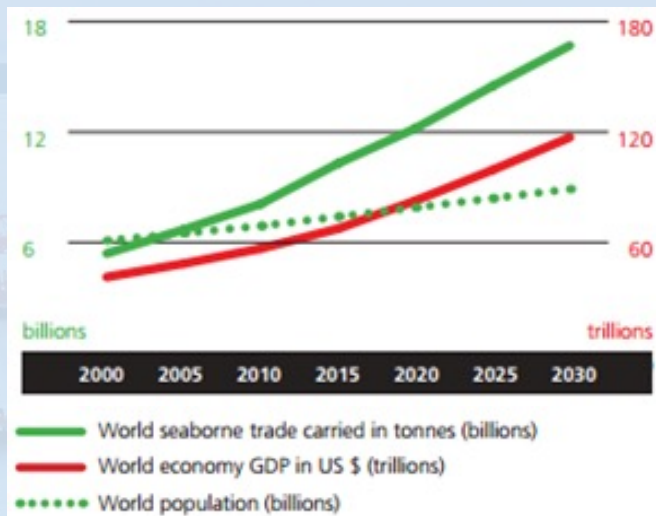
Program Areas: Carbon Management, Fission, Fusion, Infrastructure, Land Systems, Methane Pollution, Power Systems, Super Hot Rock Geothermal, Transportation

CATF's Approach:

- **Change the Narrative:** to communicate the size of the problem and totality of solution requirements.
- **Change Technology:** to have the full suite of options, including affordable and safe nuclear energy and decarbonized fuels.
- **Change Business Models:** to include modular, manufacturable energy systems that can be deployed anywhere quickly.
- **Change Policy:** to develop, demonstrate, and scale up all the technologies and systems needed to achieve zero emissions by midcentury.

Shipping and the Global Economy

- Over 80% of world trade volume is shipped by sea
- Value of shipped goods: ~\$15TUSD/year



Sources:

World seaborne trade – IHS Global Insight

World economy – OECD Statistics

World population – UN Department for Economic and Social Affairs,
Population Division



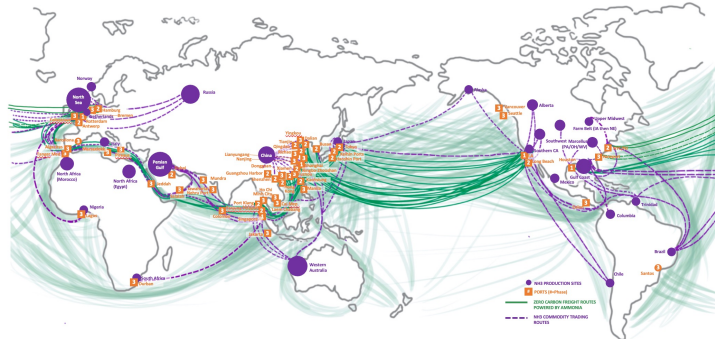
Shipping and Global Warming

- Shipping accounts for 2-3% of global GHG emissions (~1B tons CO₂e/yr)

Maritime decarbonization strategies

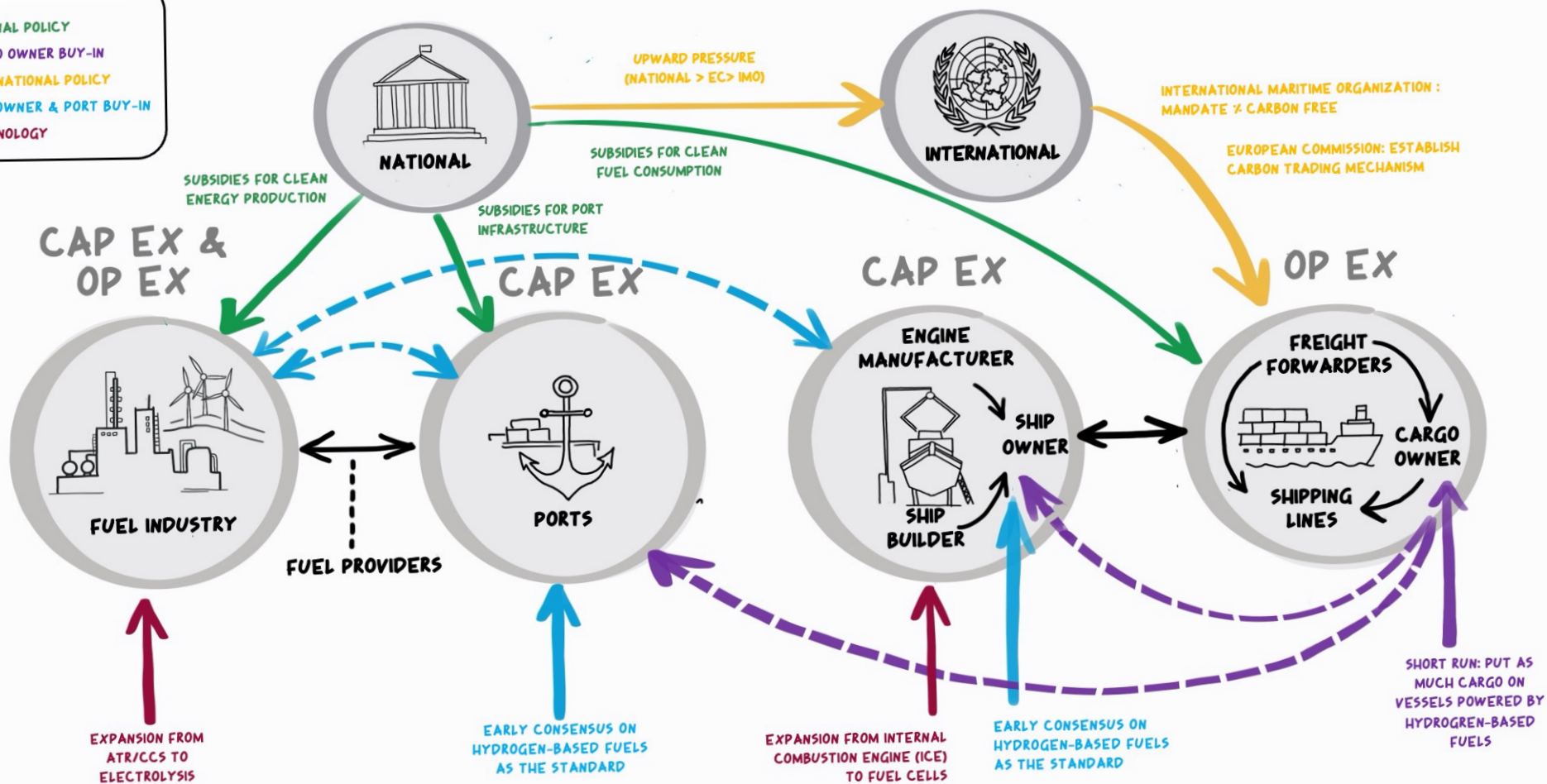
- Alternative propulsion systems: ammonia, bio-based fuels, e-methanol, hydrogen, batteries, wind assist, etc
- Range of associated changes to ship design and operation, fuel production/transport/storage, route planning, etc

2040s: PHASE III - MAINSTREAM



INTERVENTIONS

1. NATIONAL POLICY
2. CARGO OWNER BUY-IN
3. INTERNATIONAL POLICY
4. SHIP OWNER & PORT BUY-IN
5. TECHNOLOGY



Climate Policy and Maritime Decarbonization

GLOBAL

IMO Net Zero Framework

- Intended to implement 2023 Strategy: GHG reductions of 20-30% by 2030, 70-80% by 2040 and “net-zero GHG emissions by or around, i.e. close to, 2050”
- Establishes GHG Fuel Intensity (GFI) standard that declines annually
- Ships that exceed GFI threshold would have to acquire surplus units and/or remedial units (two-tiered)



Climate Policy and Maritime Decarbonization

REGIONAL & NATIONAL

EU FuelEU Maritime

- Carbon intensity of marine fuels must decrease gradually, starting with a 2% decrease by 2025 and reaching up to an 80% reduction by 2050.
- Vessels must use onshore power or alternative zero emission technology by 2030

US: International Maritime Pollution Accountability Act (*proposed*)

Singapore: Maritime Decarbonisation Blueprint





Managing the Transition to Zero-Carbon Marine Fuels

John Steelman, Deputy Director, Transportation Decarbonization
January 2024



Figure 5: Full Retrofit: Fuel Cost and CO₂ Intensity

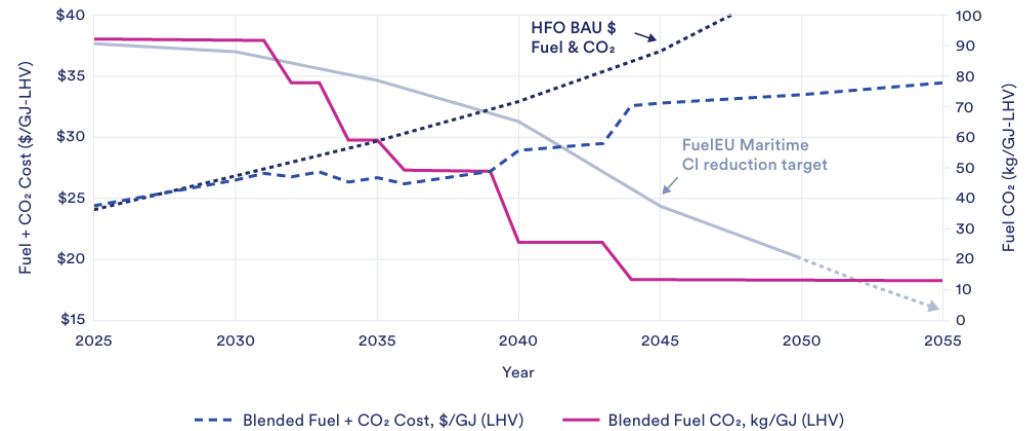
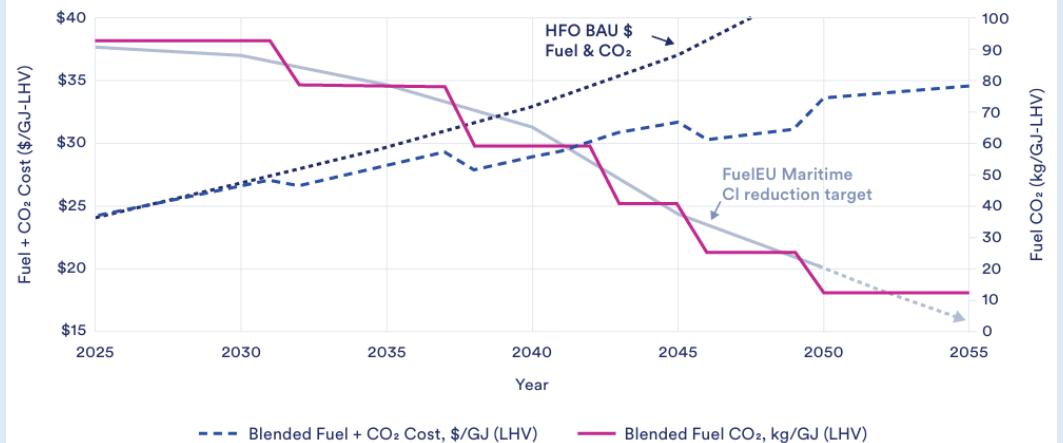


Figure 6: Partial NH₃: Fuel Cost and CO₂ Intensity



Trump Administration Opposition to IMO NZF

- U.S. delegation walked out of MEPC 83 in April 2025, at which the NZF was tentatively approved 63-16. Support for formal adoption appeared to soften over next 6 months.
- Rubio-Wright-Duffy Oct 10 letter “unequivocally reject[ed]” the NZF proposal, which it characterized as “a global carbon tax on the world.” Letter warned that countries voting for the NZF could face trade investigations, tariffs, visa restrictions, commercial penalties, port fees, and sanctions against government officials.
- MEPC/ES.2 (Oct 14-17): NZF not adopted, vote postponed for one year
- Administration’s motivations?
- Missed opportunity for U.S. energy producers?

Maritime at Previous COPs

- **COP26 Glasgow**
 - Clydebank Declaration
 - Declaration on Zero Emission Shipping
- **COP27 Sharm El-Sheikh**
 - Clean Shipping Challenge
- **COP28 UAE**
 - ZEMBA
- **COP29 Baku**
 - Maritime Fuel Supply Dialogues

Maritime at COP30 (Belem)

- **COP30 comes one month after failed IMO MEPC Extraordinary Session**
 - Too soon?
- **Brazil's Declaration on Quadrupling Sustainable Fuel Production by 2035**
 - Leaders Segment energy roundtable
 - Technology agnostic, but...
 - Modeling: maritime sector biofuel consumption under IMO NZF compliance = top 5 'country'

Thank you

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