



A Strategic Alliance for Maritime
Innovation and a Sustainable Blue Economy

Green Corridors 101

Cassidy Fisher

Program Director - Joint Innovation

cassidy@maritimeblue.org

Washington Maritime Blue is a non-profit (501c3), strategic alliance formed to accelerate innovation and sustainability in support of an inclusive blue economy. Maritime Blue works to create a world-class, thriving, equitable and sustainable maritime and ocean industry through knowledge sharing, joint innovation, entrepreneurship, commercialization, business and workforce development.



Strategic Focus & Leadership in the Blue Economy

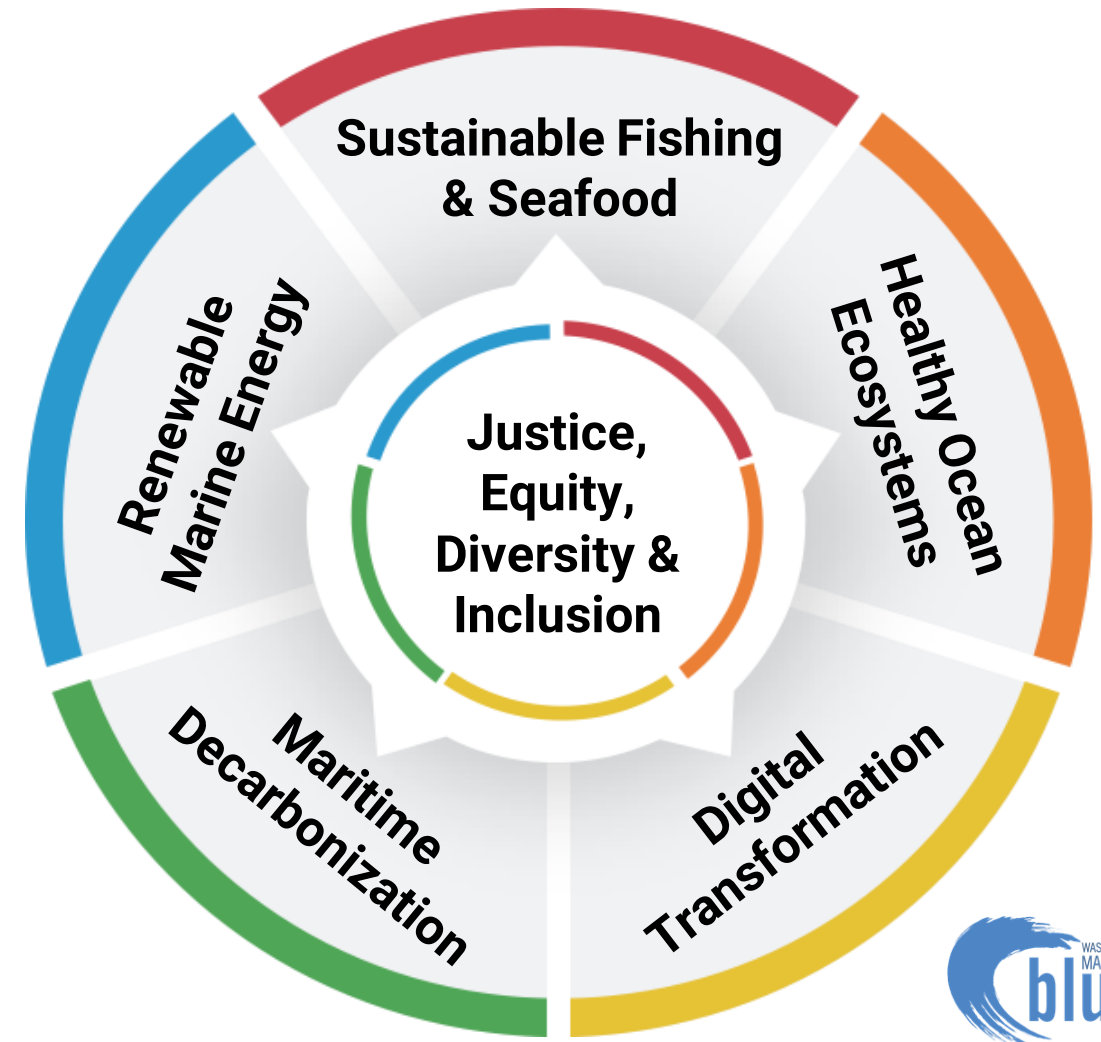


This we KNOW

Ocean based solutions and the Blue Economy are critical for addressing the climate crisis while supporting thriving and equitable communities with significant economic opportunities.

HOW we do it

Ocean/Maritime Innovation Clusters activate and catalyze public/private/philanthropic capacity to accelerate innovation, investment, and community development.



Industry Members



Community Partners



A Strategic Alliance for Maritime Innovation and a Sustainable Blue Economy

Public Partners



Research Institutions





Impactful Programs to Accelerate the Blue Economy



Blue Ventures

Supporting Entrepreneurship and Capital Investment for Ocean-based Solutions



Joint Innovation

Collaborative Initiatives and Project Management for Innovation and Development



Equity Engagement

Career Connected Workforce and Employer Development through an Equity Lens



Blue Hub

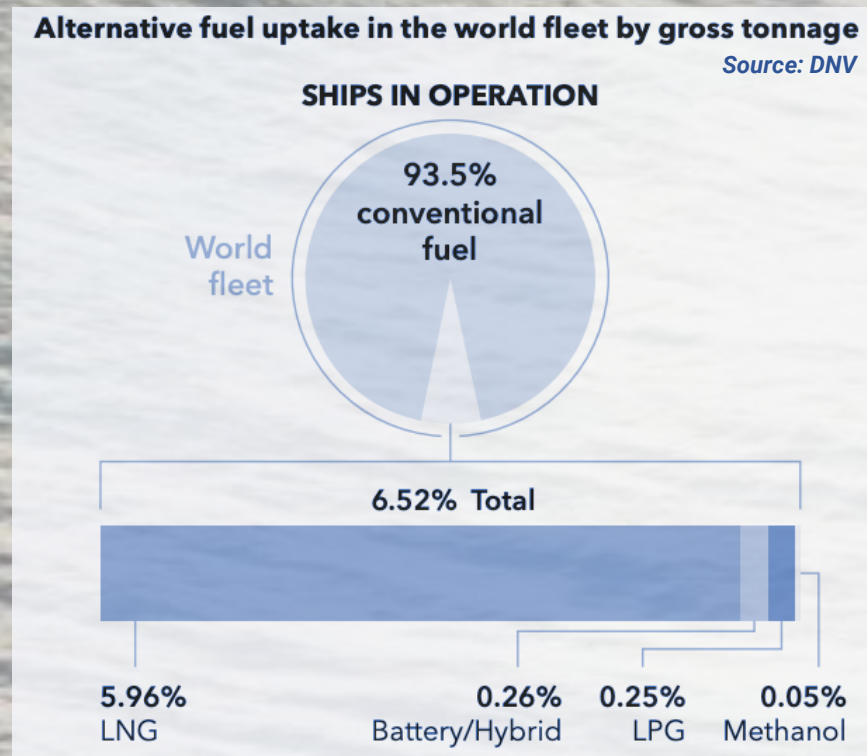
Home for Facilitation, Convening, Collaboration & Knowledge Sharing

The Challenge: Maritime Decarbonization

- Global shipping emissions account for nearly 3% of total human-caused GHG emissions
- IMO has set a goal of 50% reduction of CO2 emissions by 2050.
- Vessels that will operate in 2050 are being built now
- There is no "one-size fits all" fuel solution

























































Alternative fuel uptake in the world fleet by gross tonnage


Source: DNV





The Challenge: Maritime Decarbonization

Figure 3: Fuel Pathway Maturity Map.¹⁶

	Feedstock availability	Fuel production	Fuel storage, logistics & bunkering	Onboard energy storage & fuel conversion	Onboard safety & fuel management	Vessel emissions	Regulation & certification
e-ammonia							
Blue ammonia							
e-methanol							
Bio-methanol							
e-methane							
Bio-methane							
e-diesel							
Bio-oils							

 **Mature**
Solutions are available, none or marginal barriers identified

 **Solutions identified**
Solutions exist, but some challenges on e.g., maturity and availability

 **Major challenges**
Solutions are not developed or lack specification

The Solution



What is a Green Corridor?

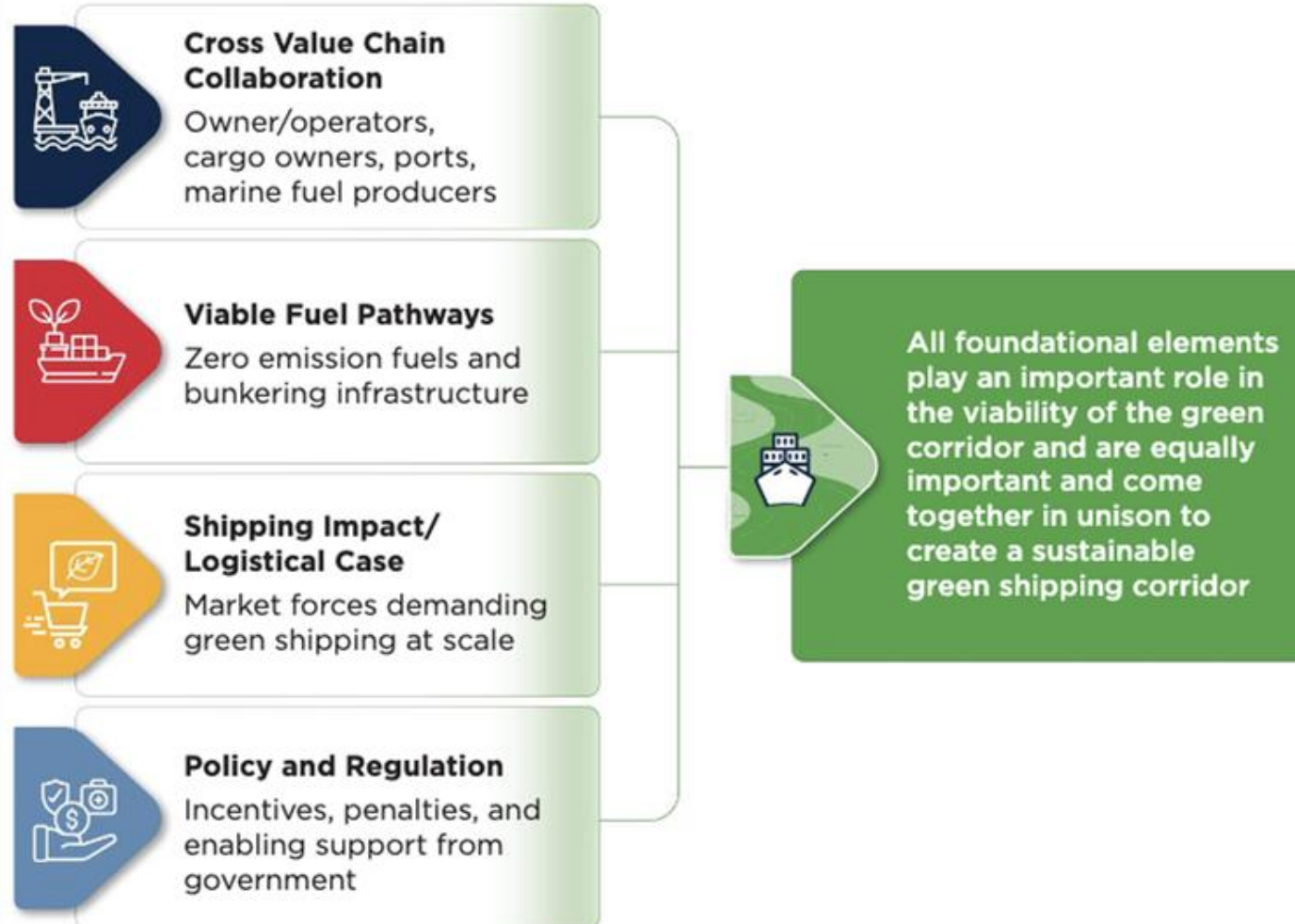


Figure 2: Enabling Environment for Green Shipping Corridors.

What is a Green Corridor?

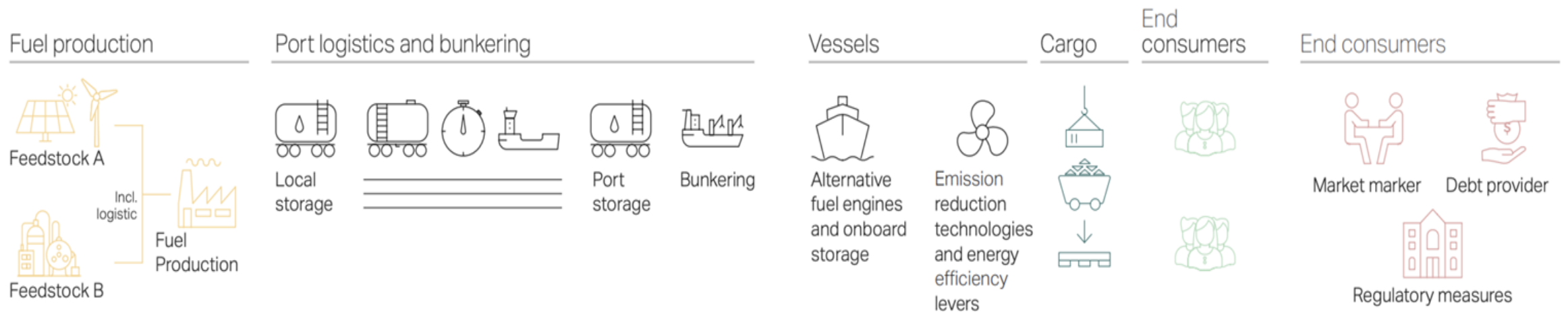
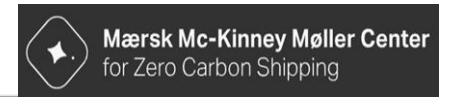
“Maritime routes that showcase low- and zero-emission lifecycle fuels and technologies with the ambition to achieve zero greenhouse gas emissions across all aspects of the corridor in support of sector-wide decarbonization no later than 2050” - US Department of State



What is a Green Corridor?

- Single Point: Zero-emission shipping routes around a particular location i.e. a port hub that enables round-trip bunkering
- Point-to-Point: Single-route green corridors between **2 ports** (often for a specific commodity transportation route)
- Network: Green Corridor routes established between **3 or more** ports where vessels can sail on alternative fuels
- Commodity-specific
- Vessel Owner- or Type-specific
- Alternative Fuel or Technology-specific (some are focused on digital solutions that improve logistics)

Figure 20: Green corridors can involve the entire maritime supply chain.





Where do Green Corridors come from?

Clydebank Declaration (2021)

- 24 signatories at COP26
- Facilitate the establishment of partnerships along the maritime value chain to accelerate decarbonization through Green Shipping Corridors
- Goal of 6 Green Corridors by 2025 with more in following years

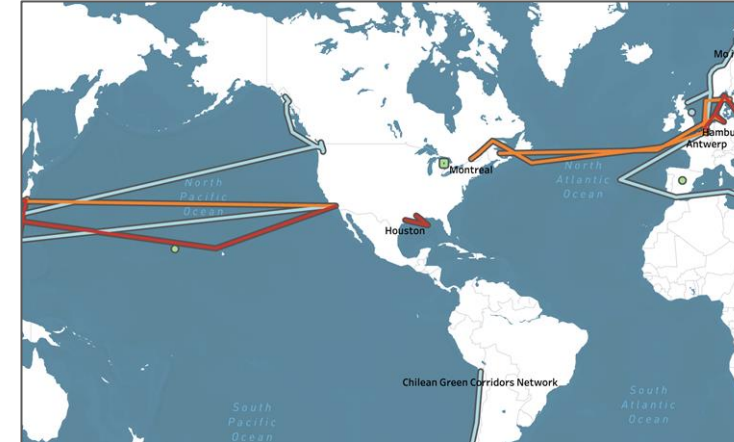
Growing International Regulatory Pressure

- IMO Targets of zero emissions by 2050 with ambitious near-term targets
- IMO Requirements: Vessel owners to comply with both Energy Efficiency Existing Shipping Index (EEXI) and Carbon Intensity Indicator (CII) regulations by January 1st, 2023.
- coZEV: Coalition of leading global retailers (Amazon, IKEA and Unilever) announced target of switching all of their ocean freight to vessels powered by zero-carbon fuels by 2040.
- EU Emissions Trading System (ETS)

Green Corridor Resources

Mission Innovation: Route Tracker

The route tracker is an interactive map that shows the numerous green shipping corridors that have been announced as under development or established.



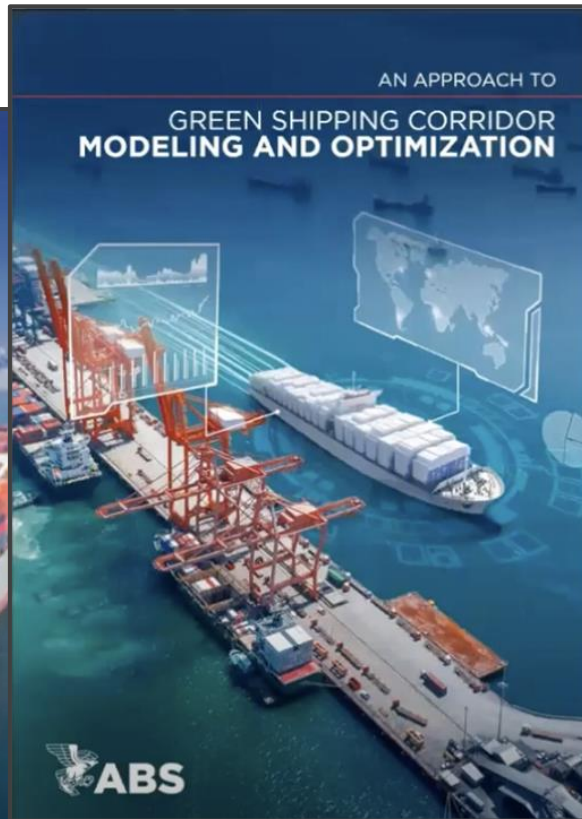
Mission Innovation: Matchmaker

The matchmaker tool is an interactive map that identifies stakeholders from across the world interested in forming or supporting green shipping corridors.



Green Corridor Resources

American Bureau Shipping



Mærsk Mc-Kinney Møller Center for Zero Carbon Shipping

Green Corridors:
Feasibility phase blueprint

Blueprint
August 2022

Green Corridors
Pre-Feasibility Phase Blueprint

January 2023

Mærsk
for ZC

Mærsk Mc-Kinney Møller Center
for Zero Carbon Shipping

ARM

GREEN
CATAPULT

Photo credit:
MSC



Green Corridor Funding

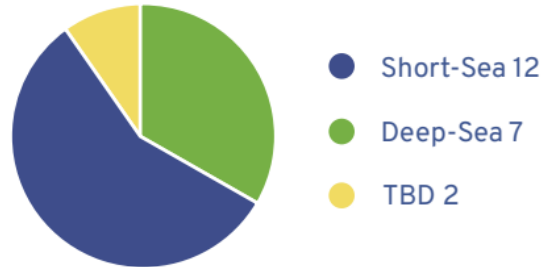
- **US Department of Transportation:**
 - MARAD META Program
 - ARPA-I
 - RAISE Program
 - Marine Highway Program
 - Port Infrastructure Development Program
- **US Department of Energy**
 - OCED
 - EERE
 - ARPA-E
- **US Environmental Protection Agency**
 - Clean Ports Program
- **US Department of State (Zero Emission Shipping Mission)**
- **IRS Hydrogen Production Tax Credit**
- **WA Clean Energy Fund**
- **WA Cap & Trade**



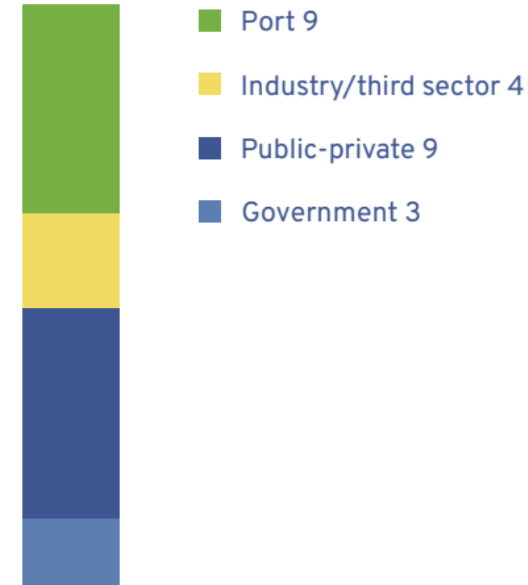
Current Status of Green Corridors, Globally

Initiatives

20+



Leadership



Stakeholders

100+

covering the whole value chain

Targets



- implementation by 2027-2030
- most are TBD

Getting to Zero Coalition & Global Maritime Forum, 2022



Pacific Northwest Green Shipping Corridors

Pacific Northwest to Alaska Green Corridor (PNW2AK)

A collaborative effort led by ports, industry, governments, and de-carbonization subject matter experts to explore a maritime green corridor aimed at accelerating the deployment of zero GHG emission ships and operations between Alaska, British Columbia, and Washington.

- Explore the feasibility, define the scope and application of the green corridor concept
- Enhance and support the emission-reduction efforts already underway
- Define governance structures, terms, and frameworks

PNW Gateway to Busan, Korea

A pre-feasibility study to explore potential green shipping corridor between the PNW Gateway and Busan, Korea as part of the US Department of Energy's Mission Innovation program.



Ports Roles in Green Corridors

- Fueling/Charging infrastructure
- Bunkering of alternative fuels
- Regulations to limit emissions
- Incentives to encourage alternative fuel use
- Operational Decarbonization
- Logistic Improvements to reduce emissions or improve efficiencies
- Change Agents
- Socializing Decarbonization



What now?





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www.maritimeblue.org

#WaMaritimeBlue, #BuildBackBlue

