



Green Shipping Corridors

A Pathway to Zero-Emission Shipping



GREEN SHIPPING CORRIDORS: A PATHWAY TO ZERO-EMISSION SHIPPING

Getting to zero-carbon shipping is complicated. The shipping industry is a significant and rising source of global greenhouse gas emissions, generating over a gigatonne of CO2 equivalent emissions each year. Without the sector's full scale decarbonization by 2040, fulfilling the goals of the Paris Agreement and limiting warming to 1.5 Celsius above pre-industrial levels or reaching economy wide targets of net-zero by 2050 will be impossible.

Yet the long operational lifespans of ships means that 2040 is just one lifetime away—the next generation fleet needed to achieve global climate goals is being designed

All photos: Alamy Stock Photos

and built now. The Global Maritime Forum (GMF) and other experts argue that if zero-emission fuels can make up 5 percent of the global shipping fuel mix by 2030, the goals of the Paris Agreement will be in reach. This will require there to be at least 200 deep sea, zero-emission vessels on the water by 2030.

Solving the zero-carbon shipping challenge will require immediate major investments in research, development, and deployment of low- and zero-emission fuels, vessels to run on those fuels, and more resilient ports to service those vessels while eliminating their own emissions.

WHAT IS A GREEN SHIPPING CORRIDOR?

Green shipping corridors are a decarbonization and environmental protection strategy that is gaining popularity internationally. However, there are a variety of definitions of what constitutes a green shipping corridor despite nations making bold commitments to pursuing their development.

For Ocean Conservancy, green shipping corridors are maritime routes between one or more ports which enable the testing and uptake of zero-emission lifecycle fuels and technologies with the ambition to achieve zero greenhouse gas emissions across the value chain of the corridor in support of an equitable sector-wide decarbonization no later than 2040.

There are alternative definitions of Green Shipping Corridors proposed by the GMF, the United States, and more. While each favors different aspects of either new shipping technology, fuels, or emissions reductions, all agree on the approach of developing new zero-emission ships to transform the sector (see the resources section at the end of this document).

The development of green shipping corridors must be pursued with equity in mind and should include remote ports and historically underserved routes, which are often in the most climate vulnerable regions. An equitable transition of the sector therefore relies on serious commitments to knowledge sharing, capacity building, and technology transfer.

Reducing shipping emissions can do more than just reduce the climate footprint of a polluter, by transitioning away from fossil fuels, and with the correct approaches taken to reduce the risks and impacts of new fuels, such as green hydrogen, a great deal of environmental co-benefits may be realized.

Each piece of a green shipping corridor involves a range of public, private, and community interests; public and private finance; and policy at multiple governance levels. Many countries, companies, and civil society support a range of green shipping corridor projects.

For instance, the United Kingdom's Shipping Office for Reducing Emissions (UK SHORE) launched a "Clean Maritime Demonstrator Competition" to channel £206 million to green shipping corridors and technology demonstrations. Other investment and implementation initiatives are championed by private companies and consortiums, or by a combination of the two.

Existing government commitments to develop green shipping corridors and to overall sector-wide decarbonization include:

- Clydebank Declaration is a commitment by 24 countries to support at least six operational green shipping corridors by 2030.
- The Zero by 2050 Declaration is a declaration by 14 countries, including major shipping nations such as the Marshall Islands and Panama, to fully decarbonize shipping by 2050 at the latest.
- In May 2022 the Nordic Ministers for the Environment and Climate, which includes Denmark, Finland, Iceland, Norway, and Sweden, announced a commitment to establish green corridors for emission-free shipping in the Nordic region and launched a DKK 1 million pilot project to map intra-Nordic shipping routes for green corridors.



SELECT GREEN SHIPPING CORRIDORS



What's missing?

There need to be more developing nation partnerships. As it's happening now, Green Shipping Corridors will lock in existing inequities. Especially for Pacific Island nations, support will be needed from partner countries to develop routes to reduce the region's dependence on imported fossil fuels.



High-density vessel traffic areas
(Data source: NCEAS 2013)



RECOMMENDATIONS TO SUCCESSFULLY ESTABLISH GREEN SHIPPING CORRIDORS

– GREEN PORTS –

- Ports develop Climate Action Plans that specify concrete activities to eliminate GHG emissions and air pollution at the port; provide detailed timelines and indicators of progress; provide for data generation, analysis, and reporting; and establish mechanisms for affected communities, employees, and other interests to understand and influence decisions, monitor progress, and hold ports accountable.
- Port Climate Action Plans should also include resilience measures to enable continued operations and protection of critical infrastructure during storm events and future sea level rise scenarios.
- Ports monitor, report, and verify data on GHG emissions and air pollutants to the public and to national and state inventories.
- Port operations and ships at berth run on renewable energy (cold ironing).
- Port bunkers, supplies and offers refueling of low- and zero-emission fuels.
- Port provides for low- and zero-emission fuel transport from port to ship, ship to ship by, for example, using electric fuel barges.

– GREEN SHIPS –

- Transition ships to run on zero-emission fuels, including investing in vessel design and approval and providing incentives or mandates for replacing older polluting vessels with new builds or retrofitting vessels to run on alternative fuels.
- Install energy efficiency devices such as wind assistance on applicable vessels and follow operational practices that further reduce fuel usage.
- Establish safety guidelines and regulations for mariner handling of zero-emission fuels and include handling of these fuels in maritime and port training programs.
- Develop and scale well-to-wake zero-emission fuels with a view to minimum 5% of international fuel mix adoption by 2030, along with the associated infrastructure to connect fuel production to ports and vessels.
- Commit to phasing down and sunsetting construction of fossil fuel powered ships.

– GOVERNMENT –

- Convene stakeholders and facilitate the development of feasibility studies for potential routes.
- Adopt increasingly stringent global targets to drive rapid action well before 2040. The longer it takes to achieve climate goals the more costly and less certain transition plans become.
- Enact national policies to decarbonize domestic shipping. Start with short routes, not only deep sea routes, to test electrification to its fullest.
- Incorporate shipping into Nationally Determined Contributions.
- Support for decarbonization of developing nations' shipping routes, especially small island developing states (SIDS) as well as least developed countries (LDC).

ADDITIONAL RESOURCES AND CITATIONS

- Future Maritime Fuels in the USA. <https://oceanconservancy.org/climate/shipping/future-maritime-fuels-usa/>
- Green Shipping Corridors Framework-United States Department of State. <https://www.state.gov/green-shipping-corridors-framework/>
- Green Corridors: Definitions and Approaches –Global Maritime Forum. https://www.globalmaritimeforum.org/content/2022/08/Discussion-paper_Green-Corridors-Definitions-and-Approaches.pdf
- Green Corridors: Feasibility Phase Blueprint - Mærsk Mc-Kinney Møller Center for Zero Carbon Shipping. <https://www.zerocarbonshipping.com/publications/green-corridors-feasibility-phase-blueprint/>
- Reducing Greenhouse Gases in the Maritime Sector: Approaches to Decarbonizing the U.S. Fleet
- Five Percent Zero Emission Fuels by 2030 Needed for Paris-Aligned Shipping Decarbonization-Global Maritime Forum. https://www.globalmaritimeforum.org/content/2021/03/Getting-to-Zero-Coalition_Five-percent-zero-emission-fuels-by-2030.pdf
- All Aboard: How the Biden-Harris Administration Can Help Ships Kick Fossil Fuels. <https://oceanconservancy.org/climate/shipping/shipping-report/>
- The Maritime Fleet of the USA. <https://oceanconservancy.org/climate/shipping/maritime-fleet-usa/>
- Zero-Carbon for Shipping: Propelling Investment in South and Central America with Hydrogen-Based Shipping Fuels. <https://oceanconservancy.org/climate/shipping/zero-carbon-shipping-report/>
- Zero-Carbon for Shipping: Sailing Carbon-Free Along North America's West Coast. <https://oceanconservancy.org/climate/shipping/zero-carbon-shipping-north-america/>

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Ocean Conservancy is working with you to protect the ocean from today's greatest global challenges. Together, we create evidence-based solutions for a healthy ocean and the wildlife and communities that depend on it.

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