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Environmental Justice RECOMMENDATIONS

- 1. Set U.S. policy to decarbonize shipping by 2035.** To maintain global temperature goals below 1.5°C and avoid the worst impact of a warming planet, the U.S. must align all relevant policies — domestic and international — with this timeline.
- 2. Set a federal zero emission ship standard.** The Biden-Harris administration should exercise its port-state-control authority under international law and set a progressive standard consistent with a 1.5°C decarbonization pathway for all ships loading and unloading at U.S. ports. These standards should require carbon reductions of 50 percent by 2025, 80 percent by 2030, and 100 percent by 2035.
- 3. Eliminate in-port ship emissions by 2030.** By 2030, all ships at-berth or at-anchor in U.S. ports should emit zero greenhouse gases and zero criteria pollutants. We recommend focusing on the zero-emission outcomes, which gives shipping companies flexibility in how to meet these mandates.

Clean Shipping RECOMMENDATIONS

- 1. Require ships report their fuel consumption and emissions.** The United States does not have an accurate accounting system to count emissions from ships calling on our ports. We need an improved, transparent reporting system that requires ships to report these emissions to U.S. authorities to serve as a basis for accurate emissions reductions. The U.S. system should be modeled off of the European Union's Monitoring, Reporting, and Verification for ships (MRV).
- 3. Increase federal funding for zero-emission vessel innovation.** While absolute spending levels are difficult to determine, the United States spends in the low million levels each year on dedicated clean maritime technology. Federal funding for zero-emission pilot projects, demonstration projects, and research, design, development, and deployment should increase to at least \$500 million per year. Among many other departments to support, we recommend the following investment increases:

(In 2020, Congressman Raul Grijalva introduced the Ocean Based Climate Solutions Act, H.R.8632, including a provision to establish an MRV for ship emissions to accurately account for and oversee ships' emissions. The bill has yet to be introduced in the current U.S. Congress.)

- 2. Bring down costs of electric and zero-emission fuel solutions relative to fossil fuel.** Producing zero-emission fuels for shipping requires substantial investment — to accelerate renewable energy infrastructure and bring down the costs, to grow electrolysis capacity, to convert energy into fuels, and more.

The Biden-Harris administration and the U.S. Congress should explore incentives, rebates, taxes, and/or other financing mechanisms to support battery and fuel production. All efforts should also address frontline communities' concerns.

Department of Energy: Advanced Research Projects Agency—Energy (ARPA-E). ARPA-E is presently requesting \$425 million annually from Congress. We recommend raising its authorization to \$515 million with a directive to focus on zero-emission shipping.

Department of Transportation: Maritime Environmental Technical Assistance Program (META). By raising the funding for this program from its current \$3 million annually to \$25 million will allow the program to support additional research into zero-emission vessels, fuel cell applications for ships and ports, port electrification, and energy efficiency.

4. Require biannual port emissions inventories to ensure compliance. U.S. ports are not currently required to conduct an annual inventory of air pollutants or greenhouse gases. Uniform reporting of emissions is needed to ensure compliance with a zero-emission target by 2030.

5. Establish an Environmental Justice Ports Advisory Commission. For decades the perspectives and interests of communities living in major American port cities have been sidelined to accommodate rapid growth of the shipping industry. An Environmental Justice American Ports Advisory Commission, or a ports and shipping working group within the White House Environmental Justice Council, should be established to prioritize frontline community perspectives in port and shipping policy decisions.

Create an Advanced Technologies Loan Program for Zero-Emission Shipping. We need more companies to work on all aspects of zero-emission vessel development and fuels across the maritime supply chain. A Department of Energy Advanced Technologies Zero-Emission Shipping Program should support manufacturers of zero-emissions vessels, as well as manufacturers of components or materials that support them. The department's Loan Program Office is experienced in providing loans and loan guarantees for large-scale energy infrastructure projects, like the incubation and development of America's most successful electric-vehicle company, Tesla.

4. Ban scrubber systems in U.S. ports and waters. One way shipping companies maintain their reliance on dirty fossil fuels in the face of increasing air quality regulations is by installing "scrubber discharge technologies" that dump oily-filled waste water into the ocean before docking at ports. Scrubber systems should be banned as a means of compliance with clean fuel standards in U.S. waters or at U.S. ports. Thirty nations already ban scrubber systems in national waters — including major shipping nations China, Singapore, Norway, and the United Arab Emirates.

5. Develop green marine highways for domestic ports. One long-standing priority of the Department of Transportation has been to increase the use of U.S. waterways and support the development of "marine highways" that parallel congested interstate highways, like M-90 through the Great Lakes (which parallels I-90) and M-5 along the West Coast (which parallels I-5).

This program could, for example, support a zero-emission route for bulk carriers following M-90 bringing iron ore from Duluth to Gary.

Establishing zero-emission vessel marine highways would allow for smaller, more trial based ships to have access to a dependable alternative fuel on either end of their route, and lead to accommodation of larger and ultimately ocean-going vessels as well.



How We Get There RECOMMENDATIONS

1. End public financing of fossil-fuel maritime projects, including LNG development, storage, or export/import infrastructure at any U.S ports. In November 2019, the European Investment Bank announced that it will stop financing fossil-fuel projects, including for Europe's maritime industry, effective 2021. The ban will be complemented by a €1 trillion investment to combat climate disruption.⁷¹ The United States should follow suit and boost support for renewable energy and other strategies to prod the shipping industry toward zero-emission fuels.

On January 28, 2021, U.S. Special Envoy for Climate Secretary John Kerry warned that natural gas will be a stranded asset. (A stranded asset is a resource or equipment that once generated income but no longer does because of market, technology, or political shifts.)

Kerry is right. But U.S. ports and global shipping companies are continuing to build out LNG infrastructure with support from the federal treasury. The Biden-Harris administration should halt this practice

2. Create a Zero-Emission Ports Infrastructure Fund. For ports to reach zero-emission targets and to prepare them for zero-emission ships will require significant investment. The EPA, working with the Department of Transportation, should establish a new fund and grant program to jumpstart the zero-emission transition at American ports, making no less than \$2 billion available each year for at least the next ten years.

(In January 2021, California Congresswoman Nanette Diaz Barragán, whose district includes the ports of Los Angeles and Long Beach, reintroduced the Climate Smart Ports Act. This bill would create that \$1 billion-a-year zero-emissions ports infrastructure program, as well as protect dockworkers, address environmental injustice, and create good-paying green jobs.)

3. Establish a short-term Zero Port Pollution Tax.

While public dollars are necessary and appropriate for many infrastructure projects, American taxpayers alone should not bear the burden of cleaning up decades of multinational corporations' pollution.

Modeled off of Norway's successful NOx Fund and adhering to the "polluters pay" principle, the U.S. should establish a Zero Port Pollution Fund to support zero-emission vessel development and green port infrastructure through a tax on deadly criteria pollutants (NOx, SOx, and black carbon, the most dangerous component of particulate matter), as well as greenhouse gases (notably CO2 and CH4).

4. Focus the zero-emission transition on the U.S. fleet and workforce.

The U.S. is not the world's largest shipbuilder, but it can lead by example and leverage its ocean, coastal, and river-going vessel fleet to drive rapid innovation in zero-emission vessel development. The U.S. should issue a moratorium on new fossil-fuel ship procurements, directing that all new U.S. ships built be zero-emission beginning in 2023. In tandem, the U.S. should:

Immediately procure low/zero-emission vessels for Maritime Training Institutes.

Training and familiarity with zero-emission vessels and operations will

be essential for American merchant mariners. Acquiring training vessels will give mariners time to develop the necessary skills to safely operate these ships, and to develop the standards for certifying mariner's knowledge.

Establish a Low/Zero Emissions Training Program for U.S. Mariners. In addition to procuring training vessels, the curriculums of America's university-level merchant academies should be encouraged to develop a list of courses that teach zero-emission technologies and fuels.

5. Establish a national Ocean Ranger-style environmental enforcement program.

In 2006, Alaskan voters organized a ballot measure to establish a "National Ocean Ranger Program" to oversee cruise ships' environmental compliance. Governor Dunleavy unilaterally revoked the program, but it remains popular.

The Biden-Harris administration should establish a similar green government jobs program that allows the Coast Guard and Environmental Protection Agency marine engineers to board vessels and act as independent observers monitoring fuel standards, pollution standards, the scrubber ban, and other marine discharge requirements.



International Action RECOMMENDATIONS

- 1. Include emissions from international maritime transport in the U.S.' nationally determined contributions (NDCs) to the Paris Agreement.** The U.S. should take responsibility for 50 percent of all inbound/outbound emissions from ships docking its ports, split on a 50:50 basis between the country of origin and destination for all ships.
- 2. Embark on 'Green Shipping Corridors' with major trade partners, looking to ports as hubs for the clean energy transition.** A corridors approach that links zero-emission fuels demand (from ships) and supply (from ports) is welcome, as it will help scale demand across multiple maritime industries and supply chains simultaneously, driving down costs and a timeline for rapid shipping decarbonization. We encourage action along three major corridors: an Americas corridor, the Transpacific corridor, and the Transatlantic corridor.
- 3. Center frontline port and freight corridor communities in global shipping debates.** Global shipping debates are largely led by ship owners, ship-builders, engineers, and technicians. Frontline communities living in ports and along freight corridors are largely absent from policy debates at the global level. The Biden-Harris administration's historic commitment to advancing environmental justice should be extended to all policy fora on shipping and the high seas.
- 4. Advance evidence-based principles for evaluating the climate credentials of alternative marine fuels and policies:** We urge the U.S. to advocate for the following three principles, which were developed by the International Council on Clean Transportation:

Principle 1: CO_{2e} not CO₂: some fuels are zero-CO₂ but not zero carbon dioxide equivalent.

Principle 2: GWP₂₀, not solely GWP₁₀₀: reducing pollutants with high 20-year GWP, such as black carbon and methane, helps avoid additional near-term warming, which is important in a world that is already 1.3°C warmer than pre-industrial levels.

Principle 3: well-to-wake, not tank-to-wake. Focusing solely on tank-to-wake emissions risks rewarding fuels with high life-cycle emissions, such as hydrogen made from fossil fuels.
- 5. Increase U.S. climate ambition and environmental justice leadership at the International Maritime Organization.**

We include IMO recommendations last deliberately in this report. For far too long, negotiations at the IMO have been treated as the primary forum for ship regulation rather than a secondary forum. This is folly. Effective global policies at the IMO will be best achieved on the back of strong national climate and shipping policies at home. That said, global agreements for shipping regulation are, of course, imperative. To align U.S. posture at the IMO with a 1.5°C decarbonization ambition, the U.S. should prioritize the following:

Reverse U.S. obstructionist positions on climate in the IMO: The United States is currently one of only two nations in the world with a formal “reservation” on the IMO’s initial greenhouse gas (GHG) strategy at MEPC 76. The other is Saudi Arabia. This is an easy fix: the U.S. should promptly withdraw this reservation and announce support for ambitious short-term actions that reduce GHGs from the existing fleet before 2023; announce the intent to help create an absolute zero life-cycle GHG emission shipping sector by 2035.

Support a 1.5C-aligned short-term GHG reduction measure at the IMO, specifically a mandatory carbon dioxide equivalent standard, the Carbon Intensity Index (CII). This is a central component of a short-term climate measure moving forward to a final vote on adoption this June at IMO. This measure must be set with targets that are aligned to meet the IMO initial strategy ambitions — resulting in absolute emissions reductions by 2030 of at least 20-45 percent, which equate to carbon intensity improvements of 70 percent by 2030. To ensure these targets are delivered, it needs to include real, globally consistent, and enforceable penalties for non-compliance (e.g. the ship cannot sail).

Support Small Island States in calling for an ambitious levy to help drive mitigation and raise revenue for investment in zero emission technology and infrastructure. The Republic of Marshall Islands and the Solomon Islands have called for and submitted to the IMO a \$100 per metric ton levy on carbon emissions from shipping companies as a baseline for

negotiations.⁷⁷ Shipping company Trafigura has said \$250-\$300 is realistically the necessary carbon price for ships’ fossil fuel pollution.⁷⁸ Supporting a levy any lower than these proposals would be an abdication of political commitments to environmental justice in the energy transition.

Support a 1.5C-aligned reform of the IMO’s Greenhouse Gas Strategy. The IMO’s Initial GHG Strategy calls for the shipping industry to halve emissions by 2050. This was an important start to catalyze shippings’ clean energy transition, but is not aligned with 1.5°C. Based on the best publically available interpretations of the global carbon budget and the shipping industry’s “fair share” within it, the shipping industry needs to reach absolutely zero emissions by 2036-2045.

Support a Transparent IMO Data Collection System. Currently, only aggregated shipping emissions data are publicly available, even though the IMO is collecting fuel consumption and emissions data for each ship over 5,000 gross tonnes. The United States, as a global leader and believer in the power of transparency to solve problems, should help create public, non-anonymized reporting and publishing of data collected under the IMO’s Data Collection System and add “cargo carried” as a required parameter to report so we can hold ship owners accountable. The system needs to expand to cover all ships carrying more than 400 metric tons so that innovators and problem solvers around the globe can have better access to the data they need to help shippings’ decarbonization.





oceanconservancy.org
and
pacificenvironment.org