OVERVIEW:

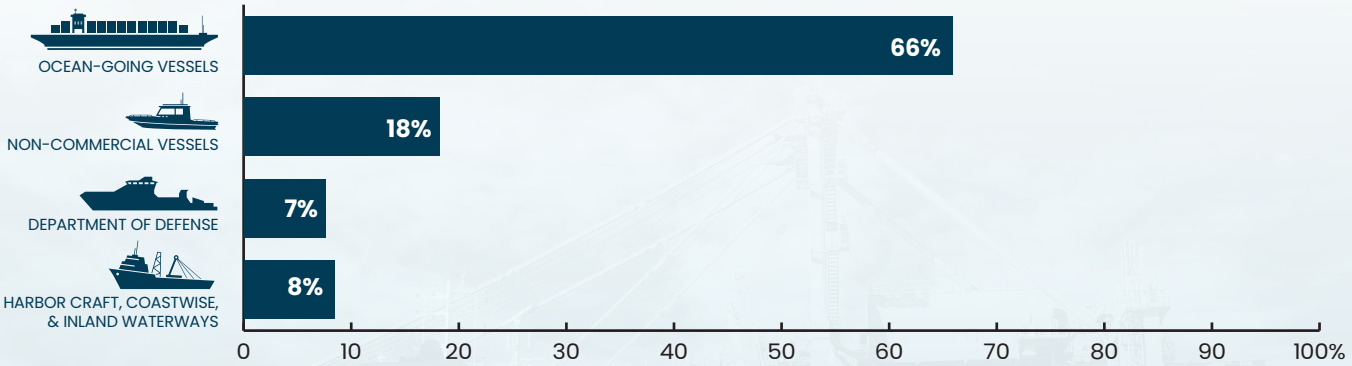
AN ACTION PLAN FOR MARITIME ENERGY AND EMISSIONS INNOVATION

The Maritime Action Plan builds on the U.S. National Blueprint for Transportation Decarbonization to define actions that demonstrate and scale vessels and solutions to reduce costs and emissions in the maritime sector in the United States.

Read more
bit.ly/transportation-decarb-maritime

ANNUAL ENERGY CONSUMPTION BY VESSEL CATEGORY

Large ocean-going vessels represent 66% of energy consumption in the U.S. maritime sector from fuels bunkered in the United States. Combustion from heavy fuel oil contributes to emissions and air pollutants that contribute to harmful public health impacts.



Total Maritime Energy Consumption: 1,035 Trillion Btu

KEY ACTIONS

Create a **Sustainable Maritime Grand Challenge** to coordinate with industry to quickly deploy competitive, affordable, and scalable fuels and technologies.

Transition to low-GHG fuels, including green ammonia and methanol for ocean-going vessels; support development of sustainable drop-in fuels; and adopt vessel electrification and hydrogen fuel cell technology.

Lead through international collaborations and commitments such as the **International Maritime Organization** and the **Green Shipping Challenge**.

Near-Term Actions for Achieving Substantial Emissions Reductions in the Maritime Sector by 2050

Deploy Low-Carbon Vessels
- Increase operational efficiencies.
- Deploy solutions to reduce at-berth emissions, including shore power.
- Increase deployment of vessel retrofits, rebuilds, and replacements with cleaner and zero-emission technologies.

Deploy Low-Carbon and Zero-Emission Fuels and Energy Solutions
- Produce 700 million heavy fuel oil gallon equivalent of sustainable maritime fuel annually by 2030.
- Produce 80 million gallons of gas equivalent of marine green gasoline annually by 2030.

Decarbonize Through Infrastructure Development and Shipbuilding
- Support leadership in ship design and construction for low- and zero-emission vessels.
- Support production and bunkering of sustainable maritime fuels in the United States.

Strengthen and Expand the Maritime Workforce
- Prepare current and future generations of engineers, scientists, and technical specialists in decarbonization.
- Promote a more diverse maritime workforce.

Build Partnerships and Collaborations Through Strategic Planning
- Collaborate with port-adjacent communities and stakeholders to inform technical and policy decision-making.
- Support expansion and resources for tools and models for calculating greenhouse gas emissions and potential emissions reductions from the maritime sector.

Supporting U.S. Workers and Communities

Achieving net-zero emissions economy-wide by 2050 will benefit the U.S. economy and communities by promoting innovation, maintaining economic competitiveness on the global stage, and reducing the negative impacts of climate change and air pollution from the transportation sector. This will require strategic actions to support low- and zero-emission vessel design, production and bunkering of sustainable maritime fuels, and construction of critical infrastructure. A thoughtful, strategic approach will be needed to support port-adjacent communities and strengthen the U.S. maritime workforce.

Maritime Workforce Consisting of 650,000 Americans

Action: Strengthen maritime academies and institutions to train and educate today's maritime workforce and the next generation of maritime workers, including continued support of the Maritime Centers of Excellence.

Port-Adjacent Communities

Action: Prioritize reducing at-berth vessel emissions through shore power, hybrid and zero-emission harbor craft, low- to zero-emission fuels, noise dampening, and dust and particulate mitigation to improve public health.

The Maritime Action Plan is part of a set of action plans that implement the U.S. National Blueprint for Transportation Decarbonization to realize a clean, safe, accessible, and affordable transportation system. Scan the QR code to learn about the other action plans.

bit.ly/transportation-decarb

DOE/EE-2930 • December 2024