



DEPARTMENT OF
ECOLOGY
State of Washington

Alternative Marine Fuels: What's on the Horizon in Washington

Brian Kirk, Prevention Section Manager

December 5, 2024

Agenda

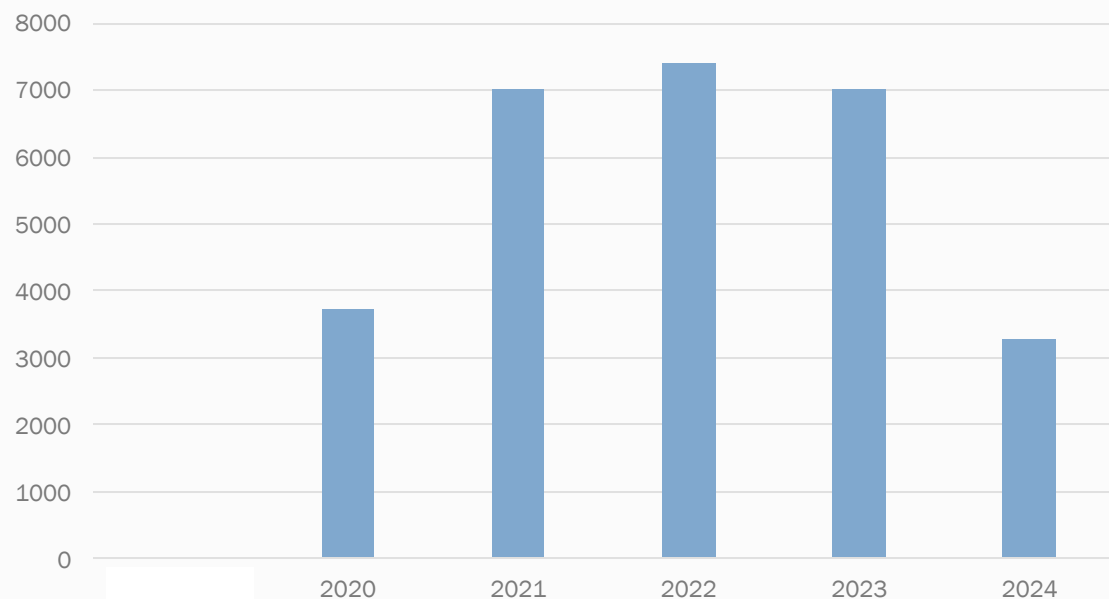
- Key Thoughts
- Marine Fueling in Washington
- Drivers for Alternative Fuels
- State and Federal Regulations
- Industry requests
- Ecology Strategic Plan Initiative

Key Thoughts

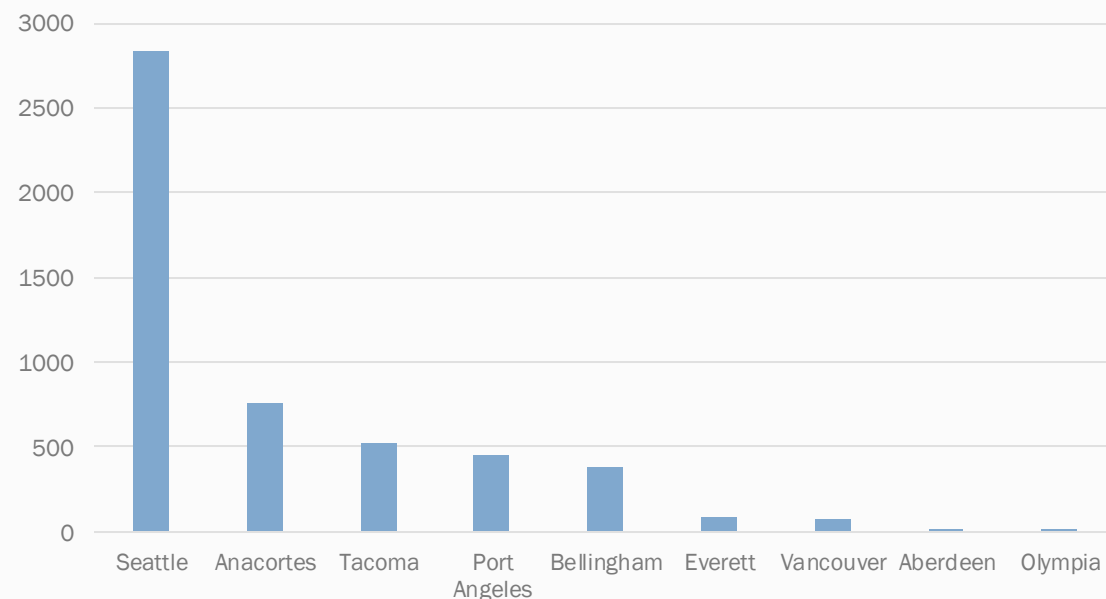
- Alternative fuel vessels are arriving in Washington now
- Response requirements and Washington spill prevention regulations do not apply to non-oil fuels
- Industry is seeking regulatory certainty
- Ecology goal: close gap between state and federal requirements for liquid hazardous substances
- More work will be needed to address preparedness for incidents, and prevention, preparedness, and response for liquified gasses

Marine Fueling in Washington

Marine Fueling in Washington
June, 2020 - June, 2024



Marine Fueling Locations
January - November 2024



Why Alternative Fuels?

MEPC 80/17/Add.1
Annex 15, page 1

ANNEX 15

RESOLUTION MEPC.377(80) (adopted on 7 July 2023)

2023 IMO STRATEGY ON REDUCTION OF GHG EMISSIONS FROM SHIPS

THE MARINE ENVIRONMENT PROTECTION COMMITTEE,

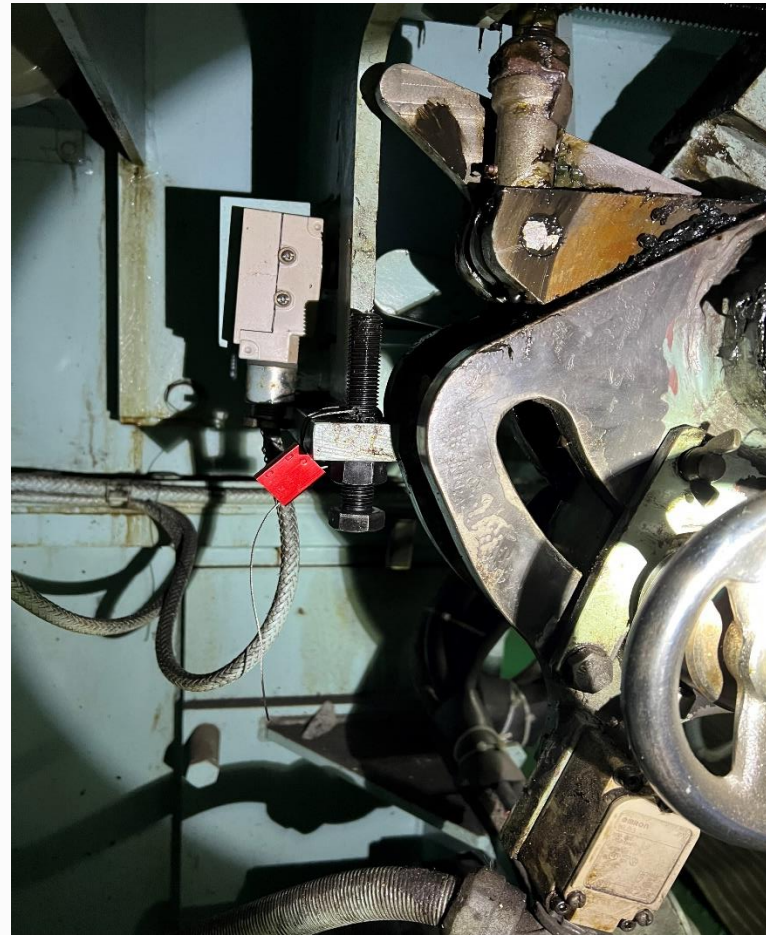
RECALLING Article 38(e) of the Convention on the International Maritime Organization concerning the functions of the Marine Environment Protection Committee (the Committee) to consider and take appropriate action with respect to any other matters falling within the scope of the Organization which would contribute to the prevention and control of marine pollution from ships,

ACKNOWLEDGING that work to address greenhouse gas (GHG) emissions from ships has been undertaken by the Organization continuously since the adoption of Conference resolution 8 on *CO₂ emissions from ships* in September 1997, in particular, through the adoption of global mandatory technical and operational energy efficiency measures for ships under MARPOL Annex VI,

ACKNOWLEDGING ALSO the decisions of the Assembly at its thirtieth and thirty-second sessions in December 2017 and December 2021, respectively, that approved for the Organization a strategic direction to "Respond to climate change",

RECALLING that the Committee at its seventy-second session (MEPC 72) in April 2018 adopted, by resolution MEPC.304(72), the *Initial IMO Strategy on Reduction of GHG Emissions from Ships* (Initial IMO GHG Strategy),

IMO Requirements Have Rapid Effects



The Northwest Seaport Alliance Welcomes Largest Ship to Tacoma Harbor which also operates on Green Fuel

September 10, 2024



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Green Corridors

Clydebank Declaration signed at COP26 in 2021.



- Partners: NWSA, U.S. Government, Republic of Korea, Korean ports, Mærsk Mc-Kinney Møller Center (MMM), Rocky Mountain Institute (RMI), vessel owners, fuel providers, BCO(s)
- Two Feasibility Studies exploring Green Methanol fueled vessels:
 - Ro/Ro vessels with Port of Ulsan and Tacoma
 - Container vessels with Port of Busan and Seattle



- Partners: Cruise Lines, Ports, Governments, NGOs
- Exploring four cruise ships fueled by green methanol by 2032
- Feasibility study led by MMM

Alternative Fuels Bring New Hazards



Methanol

- Flammable and easily ignited
- Vapor density heavier than air; collects in confined spaces and low-lying areas
- Boiling Liquid Expanding Vapor Explosion (BLEVE); may explode rather than burn on ignition
- A toxin; ingestion of 1 to 2 ounces may cause death
- Retains flammability even at high concentrations of water

Washington State Laws and Regulations

- RCW 90.56: Oil and Hazardous Substance Spill Prevention and Response
 - Spillers of oil and hazardous substances required to notify state, and liable for expenses to clean up spill
 - Ecology responds to oil and hazardous substance spills
 - Prevention plans, contingency plans, and operations manuals required for facilities that handle oil
- WAC 173-180: Facility Oil Handling Standards
- WAC 173-184: Vessel Oil Transfer Advance Notice and Containment Requirements
- WAC 317-40: Bunkering Operations

Federal Regulations

- 33 CFR 154: Facilities Transferring Oil or Hazardous Materials in Bulk
 - Applies to facilities transferring oil or hazardous materials to/from vessels
 - Hazardous materials: liquid...other than oil or liquified gas...
- 33 CFR 155: Oil or Hazardous Material Pollution Prevention Regulations for Vessels
- 33 CFR 156: Oil and Hazardous Material Transfer Regulations
- 40 CFR 112: Oil Pollution Prevention

Industry is Advocating for Regulatory Certainty

Recommendations

- Government agencies, ports, municipal firefighters, and the maritime industry should work together to conduct risk assessments, gap analyses, and develop tactical response plans.
- Salvage and marine firefighting regulations should be revised to apply to alternative fueled vessels.
- National legal frameworks to address alternative fueled vessels should promote the safety of life and the environment.

Ecology Strategic Plan 2025- 2030



Goal 3 Objectives

Prevent and reduce waste, toxic threats, and pollution

3.3 Reduce, prevent, or manage pollution, toxic emissions, and contamination.

Initiatives:

- A. Expand air monitoring, analyze trends, and support communities to reduce air pollution. This includes supporting the transition to zero emission school buses and infrastructure.*
- B. Identify and implement approaches to address PFAS contamination in water supplies, biosolids, cleanup sites, landfills, and the environment.
- C. Pursue federal funding to secure compliant United States Department of Energy budgets that support Hanford Site cleanup activities. This includes tank waste treatment, groundwater, soil remediation, and facility cleanup.
- D. Reduce litter through diverse partnerships, behavior change strategies, and pickup programs.
- E. Assess and prioritize contaminated sites using the new Site Hazard Assessment Ranking Process (SHARP) to help with site cleanup.
- F. Evaluate our Dangerous Waste regulatory compliance and enforcement process and identify recommendations to make the process more efficient.
- G. Assess historical leaking underground storage tank sites and address environmental contamination.
- H. Inspect underground storage tanks every three years to reduce leaks.
- I. Implement the new Hanford Holistic Negotiations agreement between Ecology, U. S. Department of Energy, and U.S. Environmental Protection Agency including retrieval of waste from aging underground storage tanks and startup of tank waste treatment.
- J. Support and encourage the safe transition to low and zero-carbon maritime fuels by taking steps to align our regulations with federal requirements for transferring liquid hazardous substances to and from vessels.

* indicates initiatives that relate to Ecology-led actions in Washington's Climate Resilience Strategy



Vision &
Mission



Goal 1



Goal 2



Goal 3



Goal 4



Key Thoughts

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Thank you

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