



TOWARD DECARBONIZATION: THE FUTURE OF MARINE ENERGY AND PROPULSION

A U.S. Owner, Operator Perspective

CROWLEY®
People Who Know®



Objectives

1. Introduce Crowley
2. Set the Stage for Decarbonization: Part of a Sustainability Journey
3. Dive into Opportunities, Risks, Rewards, and Blockers of Achieving Maritime Decarbonization in the U.S.

Who is Crowley:



Founded in 1892, Crowley is a privately-held, U.S.-owned and operated logistics, government, marine and energy solutions company headquartered in Jacksonville, Florida. Services are provided worldwide by four primary business units – Crowley Logistics, Crowley (Government) Solutions, Crowley Shipping and Crowley Fuels.

Our Purpose: “Enriching Lives Through Innovative Solutions Done Right”

PURPOSE

Enriching lives through
innovative solutions done right



ESGs

- Environment
- Social
- Governance



SUSTAINABILITY AMBITION STATEMENT

By 2025, Crowley will be
the most sustainable and
innovative maritime and
logistics solutions
company in the Americas.

U.S. Owner / Operator Perspective on Decarbonization

Crowley is the largest U.S. Jones Act operator with over 125 self-propelled vessels across an extensive operating area:

- From the North Pole to West Africa, Puerto Rico to the Houston Ship Channel. . .
- Liner, bulk, break-bulk, ATBs, tugs, Con/Ro, OSVs, Military Sealift Command, etc.
- Significant blend of owned, managed, chartered, and JV fleet
- Tier IV, dual fuel LNG engines to eTug battery power. . .

Complex Regulatory Roadmap

- International [IMO 2050]
- Federal [Coast Guard - MEPC 77 + poly-fuels]
- State [CARB]
- City [LA/LB]



Challenges

- I. Lack of Regulatory Certainty & Agility
- II. Lack of a Coordinated Industry and Government Approach
- III. Lack of Access to Incentives Available to Other Transport Modes

Rewards

- I. Sustainable Customer Solutions Drive More Market Penetration and Share
- II. Partnerships and JVs
- III. Competitive Advantage

Navigating Decarbonization in the U.S.

Risks

- I. Willingness of Customers to Adapt
- II. Cost of Betting on “Wrong Horse”
- III. Adapting to slowly, or too quickly

Opportunities

- I. Do Right: Enrich Lives
- II. Improve the Value we Bring to our Stakeholders Through Innovation
- III. Future-Proof our Business

There is Movement

“This legislation will make approximately \$17 billion worth of funding available to the domestic maritime sector over the next five years”

- David Hume, U.S. DoE Pacific Northwest National Laboratory (PNNL), Marine Energy Manager



LA City Council adopts world-first resolution calling for zero emission shipping at America’s top two ports by 2030

Amazon, Ikea and Unilever pledge zero-carbon shipping by 2040



Sam Chambers · November 10, 2021

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Public, Private Partnership: Crowley's e-Tug

- Crowley invested **\$18 million** to build the **first zero-emissions electric tug** in the United States. The e-tug will operate at the Port of San Diego and be operational by mid-2023.
- Over the first 10 years, will reduce **178 tons of nitrogen oxide**, **2.5 tons of diesel particulate matter** and **3,100 metric tons of carbon dioxide** versus a conventional tug.
- Will eliminate the **30,000 gallons (114,000 liters) of diesel** per year.



Progress Requires Partners Across the Value Chain:

From NGOs to Regulators, Customers to Trade Associations



U.S. DEPARTMENT OF
ENERGY



CLIMATE CORPS

AMERICAN
MARITIME
PARTNERSHIP

Thank you and Q&A

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