

Lessons in Applied Marine Electrification: Building the First U.S. All-Electric Tugboat & Shoreside Charging Station

In the dynamic landscape of maritime vessel operations, the push for sustainability and reduced environmental impact has fueled the rise of marine electrification.

Crowley's naval architecture and marine engineering teams worked together with experts in electric propulsion and battery technology to design a vessel that could seamlessly integrate into existing maritime operations while proving the feasibility of electrification in a traditionally diesel-dominated sector.

However, building an all-electric tug was just the beginning. Recognizing the importance of a marine charging infrastructure, Crowley concurrently invested in the development of a shoreside microgrid charging station that would allow eWolf to recharge quickly while reducing peak loads on the community energy grid.

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Understanding Daily Operations

- Client Requirements
- Operational Scope
- Vessel Limitations



Determining Best Fuel Source

- Fuel Supply Availability
- Emission Reduction Goals
- Operational Fueling Schedule
- Fuel vs Electric Modeling



Design & Build Services

- Optimized Vessel Design
- Regulatory Compliance
- Technology Vetting
- Shipyard Selection
- Construction Management



Considering Current Infrastructure

- Shoreside Infrastructure
- Permitting
- Port and Utility Partnerships



Fueling the Vessel

- Frequency of Bunkering/Charging
- Labor Considerations
- Operations & Maintenance Planning