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US demand for hybrid and electric-powered vessels

Summary

Prepared by the New Zealand Embassy in Washington DC.

- The US transition to zero emissions transportation is stimulating increased demand for hybrid and electric powered vessels.
- Substantial Infrastructure Bill funding has been allocated to modernise the ferry passenger industry across the US. Other vessel types moving towards hybrid or fully electric propulsion systems include offshore wind service boats, pilot boats, and recreational vessels.
- New Zealand's ingenuity and prowess in boat-building, refurbishment and electrical engineering means the industry is well placed to make the most of this increased demand.
- In order to meet US regulations, New Zealand companies will likely need to sell vessel designs and provide electrical engineering and project management expertise into the US market.

Report

The US transition to zero emissions transportation has seen hybrid and electric-powered vessels grow in popularity in the US market. American Boat & Yacht Council director Brian Goodwin said that "If you attend any boat show it's clear that electrification is here". The world's largest boat show, Miami International Boat Show, had an electric vessel-specific pavilion for the first time this year.

Ferry services

US government funding has been allocated under the Infrastructure Investment and Jobs Act to improve and accelerate the transition of ferry services to zero emissions across the US. Nearly US\$300 million has been allocated to the Federal Transit Administration (FTA) to boost access to rural ferry services, bolster existing and new urban services, and to lower emissions across all services.

The FTA is allocating this funding under three grant programmes: Ferry Service for Rural Communities Program; Electric or Low-Emitting Ferry Pilot Program; and the Passenger Ferry Grant Program. Funding is largely programmed, further details of those transportation authorities and projects awarded funding can be found https://example.com/here/.

Among the programme funding, Washington State has secured US\$1.33 billion in funding to upgrade terminal infrastructure, including charging facilities for an existing project which aims to transition the State's ferry fleet to a hybrid electric ferry system. Over the next 20 years, Washington State is expected to spend a total of US\$3.98 billion on its ferry system which is the biggest emitter of any state agency in Washington State, burning 19 million gallons of diesel fuel to support 24 million passengers every year.

Other examples of funding provided under these programmes include nearly US\$55 million for the Alaska Marine Highway System to upgrade vessels to electric or hybrid. Maine has also received US\$28 million to build a hybrid-electric ferry.

Offshore wind service vessels

In addition, the US Department of Energy is providing a range of financial support options to boost investment in wind installation vessels that are critical to the construction and servicing of offshore wind projects. This is necessary to support the Biden Administration's goal of deploying 30 gigawatts of offshore wind electricity generation by 2030 — enough to power more than 10 million homes. Thought is being given to the electrification of these vessels. While not electric, the first dedicated US

wind farm support vessel for the US offshore energy market was built with waterjets from New Zealand company, HamiltonJet.

Pilot boats

There is a lot of appetite to electrify pilot boats with hybrid or fully electric propulsion systems. On 1 January 2023, amendments to California's Commercial Harbor Craft Regulation came into effect. These changes will reduce emissions from commercial harbour craft including pilot boats and require zero-emission options where feasible. Full electrification of pilot boats is difficult due to the propulsion and operating range required, but Seattle marine engineering and construction company Glosten has been contracted to deliver three boats for San Francisco Bar Pilots to meet the Californian regulations.

Recreational

Electric and low emissions recreational propulsion options are also gaining momentum in the US. New Zealand company Mercury Marine plans to launch five new electric outboard models in 2023. The first of these models, the Avator 7.5e, has been launched with other models to be released later this year. Mercury has a significant market share in the US with roughly one out of every two recreational boats powered by Mercury products. New Zealand companies including NZElectric Boat Co, ZeroJet, Naut and HamiltonJet are also delivering innovative solutions. There is a large amount of growth in the hybrid and electric powered vessel market from established boat builders in New Zealand, along with a range of new companies entering.

Infrastructure

Like the auto industry, the uptake of hybrid and electric-powered is dependent on the roll out of charging infrastructure and confidence in the range of the vessel. Marinas and docks will need to invest in charging stations. The good news is that most electric vessels use the same charging technology as the auto industry.

Barriers faced in the US market

Companies in the New Zealand marine industry typically sell their designs and provide electrical engineering and project management services in the US market since the Jones Act (Merchant Marine Act of 1920) requires the transportation of goods between US ports to be built, owned, crewed, and registered in the US. The US' Passenger Vessel Services Act places the same restrictions on the transport of passengers.

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