



Hybrid pilot boats

An important market segment in the commercial vessels sector – pilot boats – is ready for the move to hybrid. Transfluid is working to provide hybrid propulsion systems for these vessels

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1. Each of the new boats will be 24m long with a displacement of 90 tons

2. Transfluid's hybrid modules can be easily fitted to any transmission system

3. The pilot boat segment is the latest to embrace hybrid power

Having carried out two major projects in the UK, Transfluid has taken on a new challenge. A client has commissioned two boats, the first in a new generation of pilot ships, with a potential fleet operating in the Pacific Ocean.

The boats will be 24m (78ft) long, with 90 tons displacement, and will be equipped with two MAN V6 diesel engines, producing 600hp at 2,100rpm.

For each shaft line, the hybrid system consists of Transfluid's HM3350 module, with two 75kW permanent magnet synchronous electric motors running at 3,000rpm fed from a 288V battery pack.

This configuration enables four navigation modes. The primary running modes are Diesel, which helps the vessel reach maximum speed and long-range cruise, and Electric, when the vessel will sail at more than 7kts at cruising speed and up to 10kts at peak power. The additional modes are Booster, which combines the power of the diesel engine and electric motor for extra thrust when needed, and Regeneration, when the electric machines operate as generators for fast charging of the 56.7kWh battery pack.

The hybrid propulsion goal is to combine the performance of Diesel mode with the advantages of electric propulsion, such as silent sailing, zero emissions in sensitive areas, and increased comfort due to the absence of vibration and noise on board. Also, when patrolling at very low speed, electric

propulsion helps protect the diesel engines from excessive wear caused by operating outside the ideal working load.

An extra advantage of using Transfluid hybrid modules is the potential to have further power take-offs actuated directly by the electric motors to implement onboard systems such as pulleys, hydraulic pumps and compressors for onboard auxiliary services, making them independent of the diesel engine.

Transfluid's hybrid system offers mechanics, electric motors, batteries with the integrated BMS and the complete management system, developed entirely in-house. As the owner of the technology, Transfluid is able to supply a full plug-and-play solution covered by warranty and can offer service worldwide due to its network of branches and distributors.

The boats are being built under a national maritime register certification, a challenge that Transfluid willingly accepted, intending to demonstrate the reliability of the products that have made it a leader in parallel hybrid propulsion systems for the past 10 years. +

