

Pelican Peace

A REINTJES success story



*PELICAN PEACE by Penguin Shipyard International
The world's first FULL-HYBRID oil and gas crewboat, equipped with
2 x WVS 440 Hybrid Gearbox Systems and 1 x WVS 430 Gearbox.*

Pelican Peace

How REINTJES TME helped to develop the world's first FULL-HYBRID crewboat for the offshore oil and gas Industry

Pioneering a new wave of low-emission propulsion

When Penguin Shipyard International, the shipbuilding subsidiary of Singapore-based integrated marine group Penguin International Limited, conceptualised **Pelican Peace**, the goal was not to showcase a pilot project to prove their ability to design, build and operate a FULL-HYBRID workboat.

After all, Penguin – the world's largest builder of IMO-registered aluminium commercial vessels – had already built and is operating one FULL-HYBRID vessel and three full-electric vessels in Singapore waters.

Pelican Peace, the world's first FULL-HYBRID oil and gas crewboat – built, owned and operated by Penguin – simply followed in the footsteps of Penguin's earlier decarbonisation initiatives, as a self-funded in-house project with no government grants or guaranteed offtake, driven purely by pragmatism and common sense, explained Mr James Tham, Penguin's Managing Director of 18 years.

"The challenge was to design and build an economically and operationally sensible FULL-HYBRID crewboat with a varying operating profile that could still deliver a meaningful reduction in CO2 emissions", Mr Tham said.

Achieving that goal called for more than integrating electric motors with batteries and a conventional propulsion system. It required a drivetrain that was compact, integrated and engineered as an integrative solution from the outset.

That is where REINTJES Top Mounted Electrical Motor Hybrid Drive Gear (REINTJES TME) made the difference. Working closely with Penguin, REINTJES supplied the TME and integrated the rest of the hybrid propulsion system.

Today, **Pelican Peace** stands as a new benchmark for commercially and operationally feasible FULL-HYBRID crewboats for the oil and gas industry, demonstrating how well-considered, integrated engineering delivers tangible benefits to ship owners.

Engineering hybrid propulsion differently

The REINTJES TME was developed around one simple philosophy: Hybrid propulsion should simplify a vessel, not complicate it.

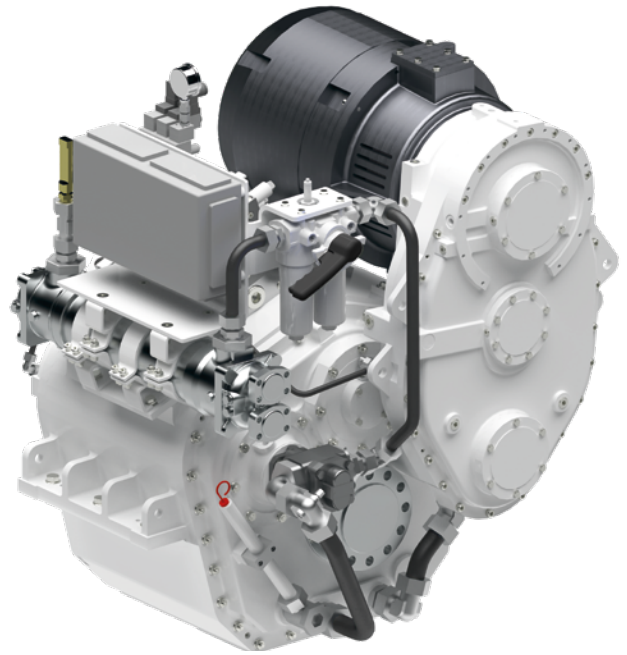
Instead of adding multiple hybrid components around a conventional gearbox, REINTJES engineered a fully integrated drivetrain that combines a top mounted electric motor, modular transmission and integrated hybrid clutch into one compact propulsion package. The hybrid clutch is incorporated directly within the gearbox, creating a shorter and cleaner drivetrain with fewer mechanical interfaces. This reduces installation complexity, improves reliability and frees valuable engine room space. The electric motor is mounted directly onto the gearbox housing, which is engineered to support the motor load. By eliminating separate motor support structures and external mounting frames, REINTJES TME reduces fabrication work, simplifies installation, maintains permanent alignment and creates a robust, compact propulsion system that is easier to maintain.

Intelligence built into every voyage

Hybrid propulsion delivers its greatest value when the entire system works intelligently together. REINTJES worked with Penguin and system partners to configure propulsion strategies that are tailored to the vessel's operation.

rating profile. Once in service, these predefined strategies automatically manage how diesel and electric propulsion work together as the throttle lever is advanced. The crew operates the vessel exactly as they would in a conventional propulsion system. Behind the scenes, the system continuously selects the optimum propulsion mode, balancing power, torque and energy usage to maximise efficiency while minimising engine loading and fuel consumption. Manual override remains available whenever operational requirements demand it.

The experience is intuitive; much like driving a modern hybrid passenger car, where technology works seamlessly in the background.



A fully integrated hybrid propulsion solution

On board **Pelican Peace**, the REINTJES TME forms an integral part of a complete hybrid propulsion ecosystem.

REINTJES supplied the REINTJES TME together with the electric propulsion package, frequency converters, propulsion control and power management systems, integrating them into one coordinated propulsion solution.

The vessel's 232 kWh Battery Energy Storage System, supplied by Penguin, is fully integrated into the DC grid to support the overall hybrid architecture. Together, the system enables true parallel hybrid propulsion with seamless transitions between the vessel's diesel, hybrid and electric modes.

It also supports "generators-off" operation for up to nine hours when the vessel is tied up alongside, enabling quiet, zero-emission hotel load operations, while significantly reducing fuel consumption, emissions, engine running hours and maintenance requirements.

Delivering value for every stakeholder

For shipyards and ship owners like Penguin, the REINTJES TME simplifies hybrid system integration by reducing engineering complexity, minimising structural modifications and preserving valuable engine room space.

For vessel owners, the hybrid propulsion drive train lowers lifecycle costs through reduced fuel consumption, lower emissions, fewer engine running hours and simplified maintenance.

For operators, hybrid propulsion becomes effortless. The vessel behaves naturally while the control system continuously optimises efficiency in the background.





"Pelican Peace simply followed in the footsteps of Penguin's earlier decarbonisation initiatives, as a self-funded in-house project with no government grants or guaranteed offtake, driven purely by pragmatism and common sense. REINTJES understood our objectives from the outset. The REINTJES TME simplified integration, optimised our engine room layout and delivered a propulsion solution that performs seamlessly in operation. Together, we have shown that hybrid technology can deliver real value for both shipbuilders and ship owners."

James Tham

Managing Director
Penguin Shipyard International