



**EPTechnologies**  
To find out more, scan the QR code or visit: [www.eptechnologies.dk](http://www.eptechnologies.dk)

EPTechnologies' in-line hybrid system is compatible with a wide range of propulsion types

# In-line hybrid drive

A parallel hybrid propulsion system is suited to a range of vessels

WORDS: MARCO OTTIKER

The in-line hybrid system from EPTechnologies is an innovative parallel hybrid propulsion system designed for power vessels ranging from 7m up to 50m superyachts.

The system is tailored to accommodate electric power requirements from 20kW to 600kW, complemented by an ICE motor of up to 1,700hp.

With the EPT design, the PM motor shaft aligns directly with the output shaft of the combustion engine and the marine gear, enabling direct propulsion of the propeller shaft from the diesel engine, the e-motor or a combination in diesel-electric boost mode. Furthermore, the design can seamlessly transition to generator mode while driving with the diesel engine engaged.

The system includes intelligent software that continuously monitors the spare capacity

of the diesel engine, ensuring sufficient reserve power for acceleration or boosts when needed. Additional benefits include the ability to use main engines as generators, decreasing the number of ICEs required on board (typically from four to two). This reduction simplifies operations and lowers maintenance costs.

EPT's first vessel using this system has been operational for more than two years. It features a setup including two 1,200hp diesel engines in-line with a 360kW e-motor on each side. The system operates without any issues and has undergone rigorous testing to ensure smooth performance.

The EPT system is compatible with all propulsion systems, including waterjets, Z-drives and standard shaft propeller propulsion. Its versatility extends to integration with all brands of diesel

engines and gearboxes, facilitated by the use of standard SAE flanges.

Despite its compact size, the system maintains a low weight even at higher power ratings, using advanced, lightweight and robust components.

Paired with the lightest marine batteries available in today's market (5.3kg per kWh), EPT's integrated solution ensures customers benefit from a well-harmonized and engineered system.

## A typical case study

It's an overnight dockage in a lively marina. The crew wakes up early in the morning and silently navigates the boat in e-mode to a serene bay eight nautical miles away. As there is no noise or vibration, the guests continue to sleep, and wake up to breakfast with a view and the opportunity for a peaceful swim. The guests then wish to swiftly move to a location 30 nautical miles away. The diesel motors are activated for a comfortable 30kts cruise, simultaneously charging the batteries.

Arriving at the new bay with fully charged batteries, the guests can enjoy amenities such as air-conditioning throughout the night without the need for a generator. Opting to stay another night in the beautiful location, the crew uses the powerful main engines to fast-charge the batteries while the guests explore the nearby beach.

Throughout the experience, the guests enjoy a noise-free environment; fuel efficiency (with engines running at optimal settings) is maximized; and comfort and speed are maintained during transitions.

For those seeking even greater eco-friendliness, the addition of solar panels and efficient air-conditioning systems directly powered by high-voltage batteries can also be considered. +

Model	E-power	Diesel power	Boost power	SAE type
EPT 6000	up to 600kW	max. 1,700hp	2,500hp	1
EPT 4000	up to 600kW	max. 1,000hp	2,500hp	1 to 4
EPT 2000	up to 180kW	max. 800hp	1,040hp	2 to 4
EPT 1000	up to 180kW	max. 800hp	1,040hp	2 to 4

The hybrid system can deliver power requirements to suit a variety of vessel types