Calnetix Introduces Hydrocurrent to Produce Power for Electric Load

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Calnetix Technologies based in the US will introduce a new system called the Hydrocurrent that produces power for the ship's electric load from heat recovered out of the engine's jacket water up to 125kW.

The system is claimed to offer short payback times and it pays for itself in a very short time by reducing the load on the ship's bunker-fueled generators. This can translate into fuel savings of up to 200 tons per year.

Organic Rankine cycle (ORC) heat recovery technology is used along with Calnetix's Thermapower and Carefree integrated power module to convert thermal energy into mechanical power.

The system can pull usable heat from a source with temperatures as low as 80°C where other heat recovery systems require much higher temperatures.

According to Calnetix, its Hydrocurrent ORC module is a closed-cycle evaporator-condenser phase-change loop, using an organic fluid that has a very low boiling point. The fluid is pumped through an evaporator that pulls heat from the engine's jacket water.

The superheated vapour is expanded across the carefree module, producing electric power, which is connected to the ship's grid. The integrated power module consists of a high-speed turbine expander and high-efficiency permanent-magnet generator in a single hermetically sealed housing, it added.

It is designed and built to ClassNK and Lloyd's Register guidelines. The system can be retrofitted in existing ships without major modifications to the engines.

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