Hybrid and electric marine solutions: providing complete, efficient propulsion, and auxiliary power systems.

HybriGen® Assist propulsion system for tugboats and windfarm support vessels offers two solutions in one. It not only drives a vessel with electric power while at low speeds, but it can assist the main engine when a high-end boost is required. HybriGen Assist propulsion system uses BAE Systems’ proven components to completely power the vessel or augment the diesel engine increasing the engine’s life and available power.

HybriGen Assist propulsion system delivers electric power on demand for vessels at low speeds and can provide a power boost to the engine when needed.
HybriGen® Assist

HybriGen Assist leverages our proven HybriGen® power and propulsion solution, that’s in service with vessel operators in various markets, including passenger and cargo transportation. Our packaged solutions provide both efficient electric propulsion as well as electric auxiliary power for a vessel using on-demand technology. HybriGen patented technology combines the efficiency of a variable speed genset with lithium-ion batteries to provide nearly silent, vibration-free electric propulsion increasing operator and passenger experience. HybriGen Assist compliments the system by combining the power of a main propulsion engine for higher cruising speeds and combined with the electric propulsion drive for a boost in propulsion system performance. HybriGen Assist provides an operator the confidence of a traditional propulsion system with the advanced technology capabilities of an on demand power solution.

How it works:

Based around a traditional propulsion solution, we overlay and interface our system through a PTI on the main gearbox. Using our variable speed generator we create electricity for auxiliary vessel power and electric propulsion. Generated power is distributed efficiently throughout the system either to the AC Traction Motor (ACTM) for propulsive loads, APS for auxiliary power or to the Energy Storage System (ESS) for storage which can then be called upon for full electric operation. Our system is smart enough to operate in the most efficient way without the need for constant mode selection from the captain and ensure maximum operational efficiencies. Power blending of the main propulsion engine and the ACTM is seamless to the operator, providing four distinct operating modes.

Electric Mode:

Vessel can operate silently with zero emissions for the duration supported by the energy storage, before the variable speed generators automatically take over, providing power to the electric motors for propulsion, power to the vessel distribution panel for hotel loads and recharging of the energy storage.

Mechanical Mode:

In this traditional propulsion arrangement, diesel engines provide power for propulsion and generators supply power to vessel distribution panel for hotel loads, which leverage the installed energy storage capability for optimal performance.

Power Generation Mode:

Diesel engines provide power for propulsion. AC Motors generate power which is stored in the energy storage and supply the vessel distribution panel with power for hotel loads. In this mode we eliminate the need to run separate genset engines.

Electric Boost Mode:

Diesel engines and AC motors provide power for propulsion simultaneously.

Benefits

- Reduced overhaul and total ownership costs
- Reduced fuel consumption
- Reduced capital expense of main engine and aftertreatment
- Supports aftertreatment catalyst health management
- Ability to maneuver at <1/2 main engine idle speed
- Up to 30 percent increase in total vessel HP rating