

HybriGen[®] Assist

Keeping our waterways clean is important to the health and survival of our planet. BAE Systems is leading the way with clean, quiet, alternative propulsion systems. The HybriGen Assist power and propulsion system uses our proven components to completely power the vessel or augment the diesel engine to increase the engine's life and available power.

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BAE SYSTEMS

Clean, quiet, proven

HybriGen Assist leverages our proven HybriGen power and propulsion system to provide both efficient electric propulsion and auxiliary power using on-demand technology. This patented technology combines the efficiency of a variable speed generator set with lithium-ion batteries to provide nearly silent, vibration-free electric propulsion. The system has the ability to simultaneously draw power from the main engines and the electric drive motors. This gives the vessel the opportunity to operate at higher cruising speeds or provides a boost to the propulsion systems when towing. HybriGen Assist provides operators 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 Power Take In (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, Modular Accessory Power System (MAPS) 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 to ensure maximum operational efficiencies. Power blending of the main propulsion engine and the ACTM is seamless to the operator, providing four distinct operating modes.

Benefits

- Decreases overhaul and total ownership cost
- Reducing fuel consumption
- Supports emission control systems
- Ability to maneuver at less than half main engine idle speed
- Up to 30 percent increase in total vessel horse power rating

Electric Mode:

Vessel can operate silently with zero emissions utilizing power stored in the ESS. Once the stored energy is utilized, the variable speed generators automatically take over, providing power and propulsion and recharge the batteries.

Mechanical Mode:

In this traditional propulsion arrangement, the main engines provide power for propulsion and the generators supply power for the hotel load.

Power Generation Mode:

The main engine provides power for propulsion while the ACTM's power is stored in the ESS and for hotel loads. In this mode, we eliminate the need to run separate generator set engines.

Electric Boost Mode:

Main engines and AC traction motors simultaneously operate to provide additional power for propulsion.

