

HYBRID POWER & PROPULSION SYSTEM

Multiple modes of power optimization
on top of a standard worboat powertrain

- Full control of bringing engines & generators on & offline, complete with clutch management
- PTO/PTI induction motors deliver hybrid modes
- Hybrid can be brought offline leaving the vessel as fully capable conventional tug



THE GREAT LAKES TOWING COMPANY
HYBRID STAN TUGS



HYBRID POWER & PROPULSION SOLUTION

Stop Mode: Used when the vessel is at the dock. Propulsion is disabled. The vessel maintains its DC Bus and is in a state of readiness to transition to a propulsion mode.

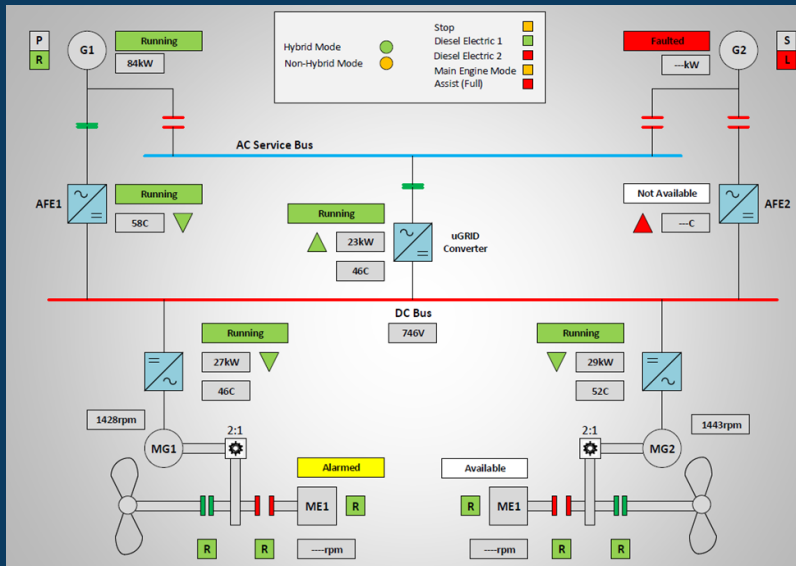
Diesel-Electric 1 & Diesel-Electric 2: Propulsion is provided by the diesel generators in a 'diesel-electric mode'. One or both diesel generators can provide power for propulsion via induction motors attached to the shaft lines. The main engines are clutched out and shut down during this operation.

Main Engine Mode: Propulsion is supported directly by main engines. The auxiliary generators do not run. Instead, vessel service power is produced regeneratively via the induction motors.

Assist (Full): Propulsion is provided by the main engines, and boosted with the induction motors, using power from one or both diesel generators.

CANAL's Hybrid Power & Propulsion Solution is highly customizable. It utilizes unconventional sources of power to maximize the efficiency of all regular and intermittent jobs a vessel must perform.

Whether transiting across the harbour, or hauling a loaded barge, CANAL's Hybrid Power & Propulsion Solution will reduce fuel consumption and emissions.



Achieve fuel, emissions, and cost benefits without requiring the use of energy storage systems (batteries).