

Stand-alone power at sea

Huan Aquaculture in Macquarie Harbour, Tasmania



Project notes

Site owner: Huan Aquaculture	Cogeneration capacity: 65kW
Comission date: 2017	Fuel source: LPG
System components: Capstone C65 Microturbine, black start, special marine 10' container package	System application: Diesel genset removal

Key outcomes

- 65kW microturbine, optimised for marine environment
- Minimal environmental and noise impact
- Low maintenance system

Innovation

- Customised marine housing to protect from seawater intake
- Custom-made exhaust silencer for minimal noise

Huan Aquaculture was looking for a solution to provide stand-alone power to their salmon fishing pods on the water of Macquarie Harbour in Tasmania. The power system needed to meet a number of key requirements.

Firstly, there were environmental considerations. The power generation couldn't expose the Macquarie Harbour marine environment to diesel, coolants, or oil. It also needed to be low-noise, as any sound would reverberate off the water and into the surrounding valley. Finally, it was essential that power was highly available, and the machinery was low maintenance.

Optimal worked in partnership with BOC to design and deliver a natural gas fueled 65 kW microturbine, specially housed for marine environments. We installed a Capstone C65 Microturbine in a ten-foot container that features a custom designed vane pack, or air inlet, to eliminate any seawater coming in. This is supported by an exhaust that has a custom-made silencer to reduce sound to less than 50dBA. The container is made for rapid connection of power, communications and fuel delivery.

As well as designing and delivering the system, we also provided remote monitoring for a six-month period. The reliability test ran the turbine continuously for six months and met all performance KPIs.