



Case Study LNG #12

Marine Fueling –
High Speed Catamaran



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Highlights:

Location — Argentina / Uruguay

Scope of Project:

- World's fastest, cleanest and most efficient high speed ferry
- First high speed ferry built according to High Speed Craft (HSC) Code to be powered by LNG fuelled turbines
- Lightweight, compact solution
- Heat recovered from the turbine exhaust gas is used to evaporate LNG
- Enhanced safety functions

Application:

The Francisco, designed and built by Incat and owned and operated by Buquebus, operates twice daily between Montevideo and Buenos Aires with an each way transit time of just 2 hours and 15 minutes. It is equipped to carry 1000 passengers and 150 cars, in comfort, and can maintain a speed of 50 knots when fully laden.

Chart's project scope was to design, manufacture and commission the first of its kind fuel system that stores LNG and converts it to gaseous methane (natural gas) for power.

Solution:

Power to the catamaran's two General Electric LM2500 gas turbines is provided by twin 43m³ DNV approved cryogenic tanks, engineered and manufactured in Chart's Decin facility. Although identical, the LNG fueling systems are housed in separate hulls and are therefore designed to operate independently. Other items comprising the complete system include a pump, vaporizer, valves, instrumentation, engine feed line, water/glycol heating circuit, bunkering lines, controls and nitrogen system.

Size, weight and safety were three fundamental prerequisites for this best in class vessel and Chart's innovative stainless steel 'cold box', engineered to house the control system, cryogenic pump and vaporization system, accomplishes all of them. Constructed from 316L grade stainless steel with A-60 insulation, the cold box is equipped with a CO₂ fire extinguishing system, two gas detectors that monitor constantly for leaks and two flame detectors. In addition, the cold box is ventilated with 30 air changes each hour.

