

GREEN FOR GO

A Rolls-Royce LNG engine has solved the port power dilemma for one Spanish ferry operator

In a busy city port where shore power is not available, how can a RoPax ferry operator reduce emissions during port calls? Rolls-Royce Marine has the answer to that question: by installing a dedicated generator set driven by an LNG-fuelled engine.

That is what Spanish ferry operator Baleària has done, pioneering the solution on its 29,670gt RoPax ferry *Abel Matutes*, which runs between Barcelona on Spain's east coast and Mallorca in the Mediterranean.

It spends ten hours every night in port and berths close to popular tourist and residential areas so reducing its emissions was an

LOCATION:
BARCELONA

“The attraction is a reduction in emissions and a large reduction in harbour fees”

Oscar Kallerdahl

important priority for its operator and the ports. This has been achieved by installing a gas-powered Bergen C26:33 L6 AG auxiliary generator set on deck in its own enclosure, supplied with gas from a 30m³ gas tank mounted nearby.

It provides the ship's hotel load and has made a dramatic reduction in exhaust gases. The engine and generator deliver 1,560kW_e by converting more than 50 per cent of the fuel's energy to electricity – an

exceptionally high figure – which naturally reduces CO₂ compared with other options, which is further reduced because of LNG's low carbon content.

These factors, together with the engine's design, which minimises methane slip – a measure of the amount of unburnt fuel passing through the engine – result in a 22 per cent reduction in CO₂ emissions compared with other engines running on conventional fuel.

In addition, LNG contains no sulphur, so SO_x emissions are

ROLLS-ROYCE EXPANDS THE POWER SYSTEM

Since this installation was carried out, Rolls-Royce has developed a self-contained deck-mounted LNG Harbour Power System that combines the engine and generator with its LNG fuel supply comprising a vertical fuel tank with an evaporator and pressure control system.

zero, and NO_x emissions are reduced by 90 per cent and therefore smoke and soot are negligible, which is especially important near residential districts.

There are also significant financial benefits. Running time is anticipated to be 3,500 hours a year and, based on current fuel prices, the yearly saving compared with running the ship's auxiliary engines is €265,000. On top of that, it can claim reduced port fees that are offered to encourage operators to reduce their ships' emissions.

For *Abel Matutes*, this brings operational savings of €300,000 per year, making total savings of €565,000 per year.

Oscar Kallerdahl, Vice President, LNG Systems, Rolls-Royce, sees both aspects as important. “The attraction in fitting the system to this diesel-powered vessel is both the general benefit from the reduction in emissions when the ferry is at the quay and a very large reduction in harbour fees which justifies the investment financially,” he says.

ROLLS-ROYCE
IN ACTION



29,670
gross
tonnage of
Abel Matutes



22
per cent
reduction
in CO₂
emissions



50
percentage
of fuel
energy
converted
to electricity



90
per cent
reduction in
NO_x emissions

