# Alfa Laval AFEM for Smit inert gas systems produces significant fuel savings

**The Alfa Laval Automatic Fuel Efficiency Module (AFEM) is a new modification for reducing the fuel consumption of Alfa Laval Smit Combustion inert gas systems. It does so by ensuring the inert gas that keeps cargo safe during offloading is only generated in the exact amounts required. In a two-year pilot project, the AFEM allowed Italian shipping company Navigazione Montanari S.p.A. to achieve an average fuel savings of 30%.**

Based in Fano on the Adriatic Sea, Navigazione Montanari owns and manages a fleet of 21 tankers. They operate worldwide, with a particular concentration throughout the Mediterranean region. In recent years, Navigazione Montanari has been focused on improving environmental standards, especially with regard to minimizing CO2 production and fuel waste. Taking part in a pilot project to evaluate the AFEM thus seemed like a natural fit.

Valle di Navarra, a 40,000 DWT product carrier built in 2002, was selected as the test vessel for the project. The ship primarily sails in the Mediterranean, with gasoil and gasoline cargo. Compared to similar vessels with Smit Combustion systems, the Valle di Navarra discharges frequently – up to three times per week – which provided Alfa Laval with ample statistical information on the AFEM’s performance and reliability.

**Taking no risks with critical equipment**

Data collection was one reason that Alfa Laval decided on a particularly long pilot program, but guaranteeing the cargo’s safety and reliable availability was even more crucial.

 “The AFEM modification is part of the inert gas generator’s combustion control circuitry,” says Mart Blankert, Manager Customer Support, Inert Gas Systems at Alfa Laval. “A failed module could prevent cargo from being discharged, meaning expensive delays in port. Working with potentially volatile cargo, we took our time with the pilot to ensure that everything functioned as intended.”

“The AFEM was designed with capabilities for full override in case of any such problems,” adds Alessandro Federico, Technical Director at Navigazione Montanari S.p.A. “And although you expect some issues with any pilot project, we’re glad to say that we never lost a minute of commercial operation with the AFEM.”

**Full support and substantial savings**

Federico also points out the close cooperation Navigazione Montanari had with Alfa Laval during the pilot. Alfa Laval’s engineers provided responsive assistance and support to ensure the AFEM performed properly and that the inert gas system only produced the necessary amount of inert gas during offloading. This made it possible to greatly reduce the operational expenses related to inert gas production aboard the Valle di Navarra.

“With the AFEM installed, the inert gas generator capacity is constantly adjusted,” explains Federico. “Purging can never be fully eliminated or avoided in practice, but an optimum setting is maintained. We can see most of the fuel savings at lower discharge rates, where they can be up to 30%.”

**Forward-thinking commitment**

“The AFEM project was part of a broader goal of continuous product development here at Alfa Laval,” Blankert says. “When a customer chooses one of our systems, we see it as the start of a partnership that lasts for the lifetime of the vessel. We’re constantly innovating new improvements that help keep total lifecycle costs to a minimum, and we strive to make them available for existing installations as well.”

For vessels with Smit Combustion systems already installed, the AFEM will soon be available as a retrofit installed and commissioned by a trained Alfa Laval service engineer. For new inert gas systems, the AFEM will be available as an added option at the time of the original installation.

To learn more about the Alfa Laval AFEM and Alfa Laval’s approach to inert gas production, visit [www.alfalaval.com/marin](http://www.alfalaval.com/marin)

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**Editor’s notes**

About Alfa Laval

Alfa Laval is a leading global provider of specialized products and engineering solutions based on its key technologies of heat transfer, separation and fluid handling.

The company’s equipment, systems and services are dedicated to assisting customers in optimizing the performance of their processes. The solutions help them to heat, cool, separate and transport products in industries that produce food and beverages, chemicals and petrochemicals, pharmaceuticals, starch, sugar and ethanol.

Alfa Laval’s products are also used in power plants, aboard ships, oil and gas exploration, in the mechanical engineering industry, in the mining industry and for wastewater treatment, as well as for comfort climate and refrigeration applications.

Alfa Laval’s worldwide organization works closely with customers in nearly 100 countries to help them stay ahead in the global arena. Alfa Laval’s worldwide organization works closely with customers in nearly 100 countries to help them stay ahead in the global arena. Alfa Laval is listed on Nasdaq OMX, and, in 2016, posted annual sales of about SEK 35.6 billion (approx. 3.77 billion Euros). The company has about 17 000 employees

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