Case story

Breaking new ground with the first methanol boiler installation

The successful commissioning of the Aalborg marine boiler for methanol marks a significant achievement in the maritime industry. As the first-ever methanol boiler installed on board a vessel, this groundbreaking project demonstrates Alfa Laval's ability to undertake complex projects that require a high level of technical expertise, planning, and close collaboration between Alfa Laval and the shipyard.

In early 2023, Alfa Laval secured the world's first order for methanol dual-fuel boilers for four 16,000 TEU container ships supporting a leading Chinese shipowner in its ambitious de-carbonization journey. By the end of 2024, methanol bunkering was completed, and the vessel was ready for commissioning. With the shipyard operating on a tight schedule, the boiler's commissioning and inspection had to be finalized by early 2025, demanding precise time management, technical execution, and close collaboration.

"Alfa Laval is taking a pivotal role in driving the marine industry's transition with its methanol-capable solutions. With the successful commissioning of the first boiler system for methanol, we have proven our expertise in handling complex installations, showcasing our ability to deliver innovative and advanced solutions that support shipowners in their decarbonization journey."

Jeppe Jacobsen
Head of Global Sales, Heat & Gas Systems, Alfa Laval

A pioneering project to support decarbonization
The Alfa Laval Aalborg methanol-fired boiler was developed to support fuel transition with a future-proof design. Unlike typical newbuild projects, integrating the first methanol boiler required navigating new class regulations, ensuring seamless integration with the ship's design, and managing tight timelines. Alfa Laval's experience in alternative fuel systems, particularly its pioneering work with steam boilers for LNG, was instrumental in ensuring a smooth and successful commissioning process.

Driving project success through collaboration and planning
This first-of-its-kind initiative required a high level of planning, technical expertise, and collaboration among stakeholders to ensure seamless integration of equipment and functionality. The close cooperation between the shipyard, Alfa Laval service and R&D team created valuable learning opportunities throughout the process.

Given the shipyard's demanding timeline, the commissioning process required systematic execution and alignment with the shipyard's progress. Alfa Laval ensured on-time delivery of engineering and equipment, completing the final inspection ahead of the deadline.

"Alfa Laval's strong coordination within the internal project team and with the shipyard was key to the project's timely completion. Pre-installation preparations, including training, laid the foundation for a smooth installation process. During commissioning, the collaboration between Alfa Laval's R&D, system engineers, software engineers, and commissioning experts allowed for real-time problem-solving, while the commissioning team's cooperation with the shipyard ensured that any technical challenges were swiftly addressed," says Jeppe.

A trusted partner in driving the fuel transition
The project not only supports customer's decarbonization goals but also strengthens Alfa Laval's position as a reliable partner committed to delivering sustainable shipping solutions. By combining fuel technology experience, R&D, and innovative engineering, Alfa Laval is empowering shipowners to navigate the shift to alternative fuels with confidence.

The boiler solutions are designed to meet the growing demand for sustainable shipping and ensure readiness for today's and tomorrow's emission-reducing fuels. Alfa Laval's deep expertise in fuel combustion and boiler technology enables the seamless integration and optimal performance of these complex systems within the ship operations.

Alfa Laval has rigorously tested boiler operations with methanol at the Alfa Laval Test & Training Centre in Aalborg, Denmark, since early 2021. In November 2021, the American Bureau of Shipping (ABS) granted Alfa Laval the first marine Approval in Principle for operating boilers on methanol. In less than two years, Alfa Laval has progressed from testing to full-scale deployment, delivering methanol boiler solutions and driving the adoption of alternative fuel technologies across the maritime industry.

With its growing portfolio of alternative fuel solutions, Alfa Laval is committed to supporting the industry in design-ing and operating methanol-fuelled vessels. Alongside proven technologies like the FCM Methanol fuel supply system and a range of heat exchangers for methanol, the Aalborg methanol boiler plays a crucial role in enabling the industry's transition to low-carbon fuels.

To learn more about Aalborg methanol boiler solutions and other solutions for methanol. Visit:
www.alfalaval.com/methanolasfuel

Explore how Alfa Laval's solutions contribute to sustainable shipping:
www.alfalaval.com/industries/marine-transportation/sustainable-shipping/

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