

29 January, 2020

WinGD Advances Clean Fuel Research with Flexible Injector Concept

WinGD (Winterthur Gas & Diesel) has bolstered its investment in fuel research with the development of a flexible injection system. In a whitepaper released today, '**Flexible Injector to Advance Alternative Fuels Research**', the engine designers describe how the concept will play a crucial role in its investigations into low-carbon liquid fuels and engine injection concepts to harness them.

The system was developed as part of HERCULES 2, the collaborative European engine research project which concluded in 2018. It features an adjustable needle to allow for the injection of lower density liquid fuels, including promising alcohol fuels like methanol and ethanol, as well as conventional fuels including heavy fuel oil and marine diesel oil.

At present there is great uncertainty around the fuels that shipping will use to reduce its greenhouse gas emissions. Several of the candidates are unconventional liquid fuels including alcohols and synthetic diesel produced from biomass or renewable electricity. These will require different injection strategies to LNG, for example, which is already used in WinGD's X-DF engines.

WinGD Future Technologies Team Leader, Andreas Schmid, said: "The injection system is the most challenging element of designing an engine for low-carbon fuels, so this experimental design will give us an important head start. Once we know what fuels are likely to be used, we will be able to use this concept as a starting point to develop more tailored injection concepts."

WinGD installed the fuel flexible injector on its RTX-6 engines in order to test ethanol combustion. Among other findings - detailed in the whitepaper - the company confirmed that ethanol fuel (with a small amount of diesel injected as a pilot fuel) reduces the formation of NOx and smoke emissions.

WinGD is currently involved in several projects investigating new liquid fuels, including the FALCON project to develop a carbon-neutral alternative to HFO from lignin, an organic polymer found in the cell walls of many plants. The fuel-flexible injection system will now become part of the company's toolbox for validating low-carbon alternatives to help shipping meet its greenhouse gas reduction objectives.

These projects represent an ongoing valuable collaboration and exchange of ideas and equipment with Dr. Konstantinos Boulouchos, and the Aerothermochemistry and Combustion Systems Laboratory of ETH Zurich.

This project was made possible through funding from the Swiss Federal Office of Energy, bringing together academia and industry towards ensuring the transfer of knowledge and technology.

Download the new whitepaper, '**Flexible Injector to Advance Alternative Fuels Research**' [here](#).

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Images:

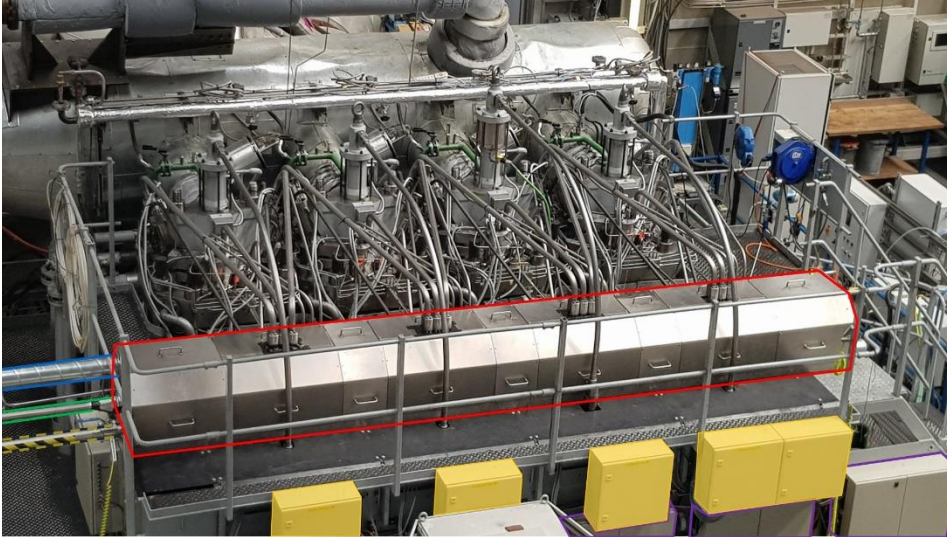


Image caption: WinGD's fuel flexible injector installation on RTX-6 Test Engine



Image caption: Andreas Schmid, WinGD Future Technologies Team Leader

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About WinGD – Winterthur Gas & Diesel Ltd.

WinGD (Winterthur Gas & Diesel Ltd.) is a leading developer of two-stroke low-speed gas and diesel engines used for propulsion power in merchant shipping. WinGD sets the industry standard for reliability, safety, efficiency and environmental sustainability. WinGD provides designs, training and technical support to engine manufacturers, shipbuilders, ship owners and operators worldwide. Headquartered in Winterthur, Switzerland, since its inception as the Sulzer Diesel Engine business in 1893, it carries on the legacy of quality and innovation in design.

For more information visit: www.wingd.com