

Press release

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R&D Project Takes Step Towards CO₂-Neutral Propulsion

Four-stroke HydroPoLEn project develops hydrogen-capable test bench

Everllence has taken a step towards the development of CO₂-neutral propulsion systems with the announcement that a research-engine test bench at its Augsburg site has been successfully upgraded to enable hydrogen combustion.

The new development occurred under the umbrella of the 'HydroPoLEn' project, an Everllence partnership with industry leaders and research institutes. The project is supported by funding from the German Federal Ministry for Economic Affairs and Energy within the framework of the Maritime Research Programme.

HydroPoLEn is focused on creating sustainable propulsion solutions for the maritime sector, addressing the urgent need for environmentally-friendly technologies in global shipping. Based on investigations, the project has designed and successfully tested a combustion process, mechanical components and parts specifically for hydrogen operation. In particular, the newly developed combustion process enables a significant increase in power density under hydrogen operation.

Project partners include Everllence, WTZ GmbH, NMA at the Technical University of Munich, and Tenneco, with Carnival Maritime acting as associated partner.

Furthermore, dedicated hydrogen infrastructure has been set up alongside the project in Augsburg, representing a significant milestone for the site. This infrastructure not only supports current research but also positions Augsburg as a key hub for developing future technologies.

Dr Cornelius Wagner – HydroPoLEn Project Manager – said: “We are still at an early stage in terms of developing a complete propulsion solution for the market, but this news augurs well for the future. Hydrogen poses significant challenges for engine operation and requires optimal adaptation of safety systems and components for it to reach maximum potential. With these key challenges now addressed, hydrogen is moving closer to becoming a long-term solution for the defossilisation of passenger ships.”

Dr Matthias Auer – Head of Performance & Emissions, Four-Stroke R&D, Everllence – said: “In the race for future propulsion technologies in the maritime sector, hydrogen has a decisive role to play alongside ammonia

and methanol. Since no single technology will likely prove optimal for all applications in the foreseeable future, companies must remain flexible and evaluate all options. Hydrogen will be an essential consideration in this context.”

Dr Alexander Knafl – Senior Vice President R&D Four-Stroke, Everllence – said: “With HydroPoLEn, we are taking another, major step forward toward climate-neutral maritime transportation. Our hydrogen engine demonstrates that ingenious engineering is a key element for sustainable, carbon-free propulsion, providing the foundation for the next generation of marine mobility. We are extremely proud to drive forward solutions that unite environmental responsibility with strong industrial innovation.”

Everllence further states that the new development underscores its commitment to innovation and sustainability, paving the way for cleaner and greener propulsion systems in maritime applications.



The first 100% H₂ engine, a single-cylinder 35/44DF H₂ engine, was successfully commissioned at Everllence's Augsburg site in late-2025 and has already run on 100% hydrogen

Everllence (formerly MAN Energy Solutions) is a leading provider of propulsion, decarbonization and efficiency solutions for shipping, the energy economy and industry. True to our motto – 'Moving big things to zero' – we help key industries in the global economy to reduce hard-to-abate emissions. Our technologies have a measurable impact on the success of the global energy transition. Headquartered in Germany, Everllence employs some 15,000 people at over 140 sites globally. Our after-sales brand, Everllence PrimeServ, also supports our customers through its worldwide service-center network.