

PRESS RELEASE

Next step to the climate-neutral ship

MEYER WERFT's strategic partner receives world's first certification for methanol-powered fuel cells at sea

Papenburg/Munich, September 8 2022 – The methanol-powered fuel cell system from MEYER WERFT's strategic partner Freudenberg e-Power Systems is the first of its kind in the world to receive class approval. This means that the system can now be used on seagoing vessels and represents an important development step towards new maritime energy systems and climate-friendly shipping.

In more than 15 years of work, the MEYER Group has already taken several development steps: In the Pa-X-ell and Pa-X-ell2 research projects, the company first researched and developed the use of fuel cells at sea and then their integration into a ship system. Following trials with other partners, the MEYER Group is working with Freudenberg e-Power Systems as a strategic partner, which is keeping up with the high pace of development with its own capacities.

MEYER WERFT is currently building the Silver Nova, which will be equipped with the world's largest fuel cell system on a cruise ship. The ship will be able to run completely on this system in port without the help of combustion engines. MEYER WERFT and Freudenberg e-Power Systems are also working together on the Pa-X-ell2 research project, in which a fuel cell system is being retrofitted on board the AIDAnova.

MEYER and Freudenberg are also planning further cooperation in the future - not only on newbuildings but also on existing ships. To this end, MEYER NEPTUN Engineering is already developing complete retrofit solutions and will work even more closely with Freudenberg e-Power Systems in a joint office in the future to advance joint developments even faster.

"We are hereby achieving another important interim goal in our green shipping strategy. We have been researching and developing fuel cell technology for maritime use for more than 15 years and are now seeing the first successes. The 1300 engineers in our Global Design Team are already developing the climate-friendly ship prototypes of tomorrow," says Malte Poelmann, Chief Technology Officer of MEYER Group.

Global Design combines all development and design activities of the MEYER Group and is looking for further specialists and junior staff for future technologies. Architects for the broad product portfolio of the MEYER Group with cruise and special ships, MEYER Yachts as well as MEYER Floating Solutions are also sought. In Global Design, MEYER Group engineers collaborate at various locations across Europe and mostly digitally - a way of working established by the Corona pandemic.

Turning point towards maritime sustainability

The development of the fuel cell for shipping is an important building block for optimizing the overall ship system with its high efficiency and the integration of decentralized energy systems. At the same time, the MEYER Group is working on the use of new fuels. For example, the use of regeneratively produced fuels such as hydrogen, methanol and biogas is already possible today.

In marine applications, it makes sense to chemically bind regeneratively produced hydrogen, which is necessary for the operation of a fuel cell, in order to achieve a significantly higher energy density. This makes the fuel cell economically and practically viable for ocean-going shipping.

In this context, the use of climate-neutral methanol represents a turning point on the road to maritime sustainability and the achievement of IMO emission reduction targets. Methanol is a simple alcohol that is liquid under normal ambient conditions and has an energy density about three times higher than liquefied hydrogen. As an important feedstock for the chemical industry, carbon-neutral methanol is characterized by proven manufacturing processes as well as good availability.

The heat required for the reformer from methanol to hydrogen can be obtained directly from the waste heat of the fuel cells. Fuel cell stacks, reformer and control electronics as well as all components for media supply are located in a prefabricated modular unit. This containment design allows easy installation on board.