



## Press release

### Qualified standards for all-electric ships with LOHC technology

**Lloyd's Register and H<sub>2</sub>-Industries are working together on developing standards for all-electric vessels powered by emission-free LOHC technology.**

**Munich, September 26, 2018** - On the occasion of the international Monaco Yacht Show, Lloyd's Register and H<sub>2</sub>-Industries announced their collaboration on safety standards for all-electric vessels based on the innovative LOHC (Liquid Organic Hydrogen Carrier) power storage technology. The world's leading classification society and the LOHC pioneer are seeking the Approval in Principle for the use of LOHC technology on ships. This covers the refueling of ships with LOHC, the storage of the energy carrier on board as well as the process of power generation on board of the vessel.

The new LOHC energy storage technology has allowed the full-electric drive to be used for all types of vessels and is revolutionising the shipping industry. LOHC technology allows hydrogen to be stored chemically bound and electrical energy to be released on demand. The charged LOHC+ is efficient, non-explosive and has low flammability. LOHC technology from H<sub>2</sub>-Industries enables the safe storage of hydrogen as well as the safe and efficient operation of fuel cells on board. It converts the hydrogen released from the LOHC into electricity, which is then used on the vessel for propulsion and on-board power. Thanks to the LOHC system, the ship can now be powered by a silent and vibration-free electric motor, meaning that diesel engines will soon become a thing of the past. This will make emission-free navigation possible, with complete elimination of CO<sub>2</sub> and NO<sub>x</sub> emissions as well as particulate matter and soot.

In addition, H<sub>2</sub>-Industries' LOHC technology is also compatible with existing infrastructure. The oily substance can be stored and transported in exactly the same way that diesel is transported. Time-consuming charging processes as would be required when using batteries are also eliminated. With the LOHC system, energy can not only be fueled in the same way as diesel, but the substance can also be charged with hydrogen as often as required. "The collaboration between Lloyd's Register and H<sub>2</sub>-Industries marks a milestone in the development of emission-free shipping," said Michael Stusch, founder and CEO of H<sub>2</sub>-Industries SE.

### About Lloyd's Register

Since 1760, safety has been the primary concern of Lloyd's Register, meaning that the company invests its time, money and resources to accomplish its longstanding mission: the protection of life and property, as well as the promotion of education and research in the field of transport and technology. With its objective advice, in-depth expert knowledge, extensive experience and close relationships, it helps to make the world a much safer place.

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**About H<sub>2</sub>-Industries**

H<sub>2</sub>-Industries develops innovative, effective and environmentally friendly LOHC energy storage solutions. The company was founded in 2010 by entrepreneur Dipl.-Ing. Michael Stusch and is headquartered in Munich. Research, development and production are located in Hamburg.

The products from H<sub>2</sub>-Industries make it possible to produce hydrogen with any (renewable) source of electricity and to store it chemically and safely at ambient pressure and temperature in the oil-like liquid organic hydrogen carrier (LOHC). LOHC-bound hydrogen can be easily transported and released again when needed. LOHC technology makes it possible to store large amounts (up to several terawatt hours) of electricity safely and cheaply for the first time. This allows H<sub>2</sub>-Industries to make renewable energy available everywhere, 24/7.

The aim of H<sub>2</sub>-Industries is to industrialise LOHC technology, thus establishing hydrogen as a safe energy source for the future.

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