

Egil Ulvan Rederi shall build the world's first hydrogen powered cargo ship

PRESS RELEASE: HeidelbergCement Norway and Felleskjøpet AGRI has awarded Egil Ulvan Rederi the prestigious contract to build and operate the world's first zero emission cargo ship. The ship concept has been developed in close cooperation with Norwegian Ship Design – TNSDC, a Norwegian ship design and engineering company.

The two cargo owners, HeidelbergCement and Felleskjøpet, aim to establish a sustainable transport system without emissions of greenhouse gases. The transport system will combine the cargoes of the two companies, carrying aggregates from western to eastern Norway and grain in the opposite direction. Through a tender process, facilitated by the Green Shipping Programme, a public-private partnership, Egil Ulvan Rederi has been selected to develop, build and operate a zero emission cargo ship. Competition has been fierce, with 31 ship owners competing for the contract through a six month long process.

Arild Hoff, CEO at Egil Ulvan Rederi, explains why they have succeeded: "It's in our DNA to be innovative and at the cutting edge. Our owners are interested in technology and are always "hands on".

Ivar Ulvan is one of the owners Arild Hoff has in mind. Ivar is not only one of the owners, but he is also chief technical officer. Dressed in a dirty coverall confirming his "hands on" approach, at the shipyard where their latest new building is being built, he says "We are always reaching for new opportunities, but at the same time it must be anchored in what we have done and what we know." The ideas incorporated in the new hydrogen powered vessel have been developed jointly by us and Norwegian Ship Design.

The cooperation with Norwegian Ship Design has been an important factor: "We know each other well and our close cooperation has been valuable throughout the process towards this important award" says Hoff. Together shall we realize this project and create a unique vessel.

Gjermund Johannessen, CEO of Norwegian Ship Design, is pleased to win together with Egil Ulvan Rederi. "As a company we have worked hard to be innovative and leaders in developing bespoke and energy efficient ship designs, as well as in using pioneering new technology. Egil Ulvan Rederi is also forward-looking and has similar ambitions as ship owners. We have a close and fertile relationship, where we see possibilities and find solutions together" says Johannessen.

Egil Ulvan Rederi and Norwegian Ship Design have jointly presented technical solutions with focus on energy efficiency and thus reduced fuel costs, in several meetings with the cargo owners and experts from DNV.

The ship concept has the project name "With Orca" - **Powered by Nature**, as a significant part of the energy required to operate the vessel will be harvested directly from the nature through two large rotor sails. The vessel's sailing route will mostly be in open waters in the North Sea, where wind conditions are good for wind assisted propulsion. To counter drifting, the vessel will be equipped with a specially developed keel. It is our clear belief that direct use of nature's own forces will be an important part in reducing our carbon footprint.

During 2021 the ship concept will be fully developed and optimized, aiming at ordering the vessel by the end of the year. The ship shall enter operation in early 2024.

We would like to commend HeidelbergCement and Felleskjøpet Agri for their initiative for pioneering zero emission transport contracts and we congratulate them with the prestigious Heyerdahl environmental award which they received from H.R.H. Crown Prince Haakon last week.

FACTS:

About the vessel

- Project name «With Orca» - **Powered by Nature**
- Self-unloading bulk vessel – zero emission
- Length about 88 m.
- Deadweight abt. 5500 ton
- Powered by hydrogen and wind
- Hydrogen is stored in compressed form onboard.
- Two rotor sails for wind assisted propulsion.
- Highly efficient hull and propulsion solutions.
- Hydrogen fuelled internal combustion engine with add-ons for increased efficiency.
- Many measures for premier energy efficiency.
- Significant content of Norwegian equipment.

About Egil Ulvan Rederi AS

- Family owned ship owner based in Trondheim, Norway.
- Established in 1919 and operates five general cargo carriers along the coast of Norway and in the North and Baltic seas, as well as two LNG fuelled bulk vessels delivering fish feed to fish farms in Norway.
- The company has a ship under construction at Tersan Shipyard in Turkey. The LNG fuelled ship has many new and innovative solutions.
- The owners also part owns and manages a fleet of self-unloading bulk carriers through Halten AS.
- The owners are active in the company and have a “hands on” approach. They also have proven ability for pioneering and building novel solutions.

www.ulvan-rederi.no

About Norwegian Ship Design

- We deliver bespoke first class Ship Design, Consultancy- and Advisory services to satisfied and returning customers.
- Our clear ambition is to be the leading and preferred ship design and engineering partner for energy efficient and low or zero emission ships for the future.
- Norwegian Ship Design is one of only a few fully independent ship design companies without any bond of interest to equipment suppliers, shipyards or any other parties. This enables us the freedom of always choosing or proposing the best, most efficient and expedient solutions and equipment at any time. An absolute necessity for successful implementation of new technologies.
- We are marked leaders on battery powered ships, and now we spearhead the development of hydrogen fuelled and wind assisted ship designs.
- We have inhouse, first-class competency in all relevant disciplines needed for new building or retrofit projects, as well as a network of experienced partners.

www.norwegianshipdesign.no

Kontaktpersoner:

Arild Hoff	CEO	Egil Ulvan Rederi	+ 47 99 25 59 52
Ivar Ulvan	Owner and CTO	Egil Ulvan Rederi	+ 47 90 11 37 46
Gjermund Johannessen	CEO	Norwegian Ship Design	+ 47 98 62 23 83

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