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PRESS RELEASE

Testing begins on first product tanker vessel utilising wind propulsion technology

Two 30-metre tall Rotor Sails have been installed onboard the product tanker vessel *Maersk Pelican* targeting a reduction in fuel cost and associated emissions on typical global shipping routes of 7-10%.

Copenhagen, Helsinki & London – 30 August 2018: Norsepower Oy Ltd., together with project partners Maersk Tankers, Energy Technologies Institute (ETI) and Shell Shipping & Maritime, today announced the installation of two Norsepower Rotor Sails onboard *Maersk Pelican*, a Maersk Tankers Long Range 2 (LR2) product tanker vessel.

The Rotor Sails are large, cylindrical mechanical sails that spin to create a pressure differential - called the Magnus effect - that propels the vessel forward. The Rotor Sails will provide auxiliary wind propulsion to the vessel, optimising fuel efficiency by reducing fuel consumption and associated emissions by an expected 7-10% on typical global shipping routes.

The Rotor Sails are the world's largest at 30 metres tall by five metres in diameter and were installed on the product tanker vessel in the port of Rotterdam. The first voyage with the Rotor Sails installed will commence shortly.

"This project is breaking ground in the product tanker industry. While the industry has gone through decades of technological development, the use of wind propulsion technology onboard a product tanker vessel could take us to a new playing field. This new technology has the potential to help the industry be more cost-competitive as it moves cargoes around the world for customers and to reduce the environmental impact," said Tommy Thomassen, Chief Technical Officer, Maersk Tankers.

The Rotor Sails have completed rigorous land testing, including thorough testing of various mechanical and performance criteria, and is the first Rotor Sails to be Class approved for use on a product tanker vessel. Extensive measurement and evaluation of the effectiveness of the Rotor Sails will now take place to test the long-term financial and technical viability of the technology. Independent experts from Lloyd's Register's (LR's) Ship Performance team will acquire and analyse the performance data during the test phase to ensure an impartial assessment before technical and operational insights as well as performance studies are published.

Andrew Scott, Programme Manager HDV marine and offshore renewable energy, ETI explained: "We commissioned this project to provide a unique opportunity to demonstrate the untapped potential of Rotor Sails. Auxiliary wind propulsion is one of the few fuel-saving technologies that is expected to offer double-digit percentage improvements. The technology is projected to be particularly suitable for tankers and dry bulk carriers, and this test will assist in determining the further potential for Rotor Sails in the product tanker industry."



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Tuomas Riski, CEO, Norsepower, added: “We have great ambitions for our technology and its role in decarbonising the shipping industry. The installation of our largest ever Rotor Sails in partnership with these industry leading organisations shows that there is an appetite to apply new technologies.

“With this installation on the *Maersk Pelican*, there are now three vessels in daily commercial operation using Norsepower’s Rotor Sails. Each of these cases represents a very different vessel type and operational profile, demonstrating the widespread opportunity to harness the wind through Flettner rotors across the maritime industry.”

Dr. Grahaeme Henderson, Vice-President, Shell Shipping & Maritime, concluded: “The shipping industry faces a major challenge in how it can economically ship the increasing amounts of goods and energy the world demands, whilst lowering its environmental impact. We see significant advantages in embracing, testing and driving innovative technologies that we believe show real promise in helping the shipping industry meet this challenge.”

Norsepower’s Rotor Sail solution is the first data-verified and commercially operational auxiliary wind propulsion technology available for the global maritime industry. When wind conditions are favourable the main engines can be throttled back, saving fuel and reducing emissions, while maintaining speed and voyage time. Each Norsepower Rotor Sail is made using lightweight composite sandwich materials, which ensure the Rotor Sail remains well-balanced and offers a hi-tech, low maintenance solution.

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Notes for Editors

About Norsepower

Norsepower Oy Ltd is a Finnish clean technology and engineering company pioneering modern auxiliary wind propulsion for the global maritime industry. Norsepower’s Rotor Sail Solution is a proven, low-maintenance, easy to use, and reliable fuel-saving technology, supporting the decarbonisation of the shipping industry.

Norsepower’s Rotor Sails are currently installed on three commercially operating vessels:

- *M/V Estraden*, a Bore vessel offering a Ro-Ro and General Cargo service between the UK and the Belgium
- *Viking Grace*, a Viking Line cruise-ferry travelling between Finland and Sweden
- *Maersk Pelican*, a Maersk Tankers 109,647-deadweight tonne (DWT) Long Range 2 (LR2) product tanker

For more information on the Norsepower Rotor Sail Solution, please visit www.norsepower.com.

About Maersk Tankers

Maersk Tankers facilitates the trade of energy to meet the world’s energy needs. The company is a leading player in the product tanker industry, operating one of the largest fleets of vessels and employs 3,100 employees worldwide. Established in 1928, Maersk Tankers has nine decades of experience and expertise in commercial and technical vessel management, providing customers and partners safe, efficient and flexible services that benefit their businesses. For more information on Maersk Tankers, please visit www.maersktankers.com



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About the Energy Technologies Institute

The ETI is a public-private partnership between global energy and engineering companies – BP, Caterpillar, EDF, Rolls-Royce and Shell – and the UK Government.

The role of the ETI is to act as a conduit between academia, industry and the government to accelerate the development of low carbon technologies. We bring together engineering projects that develop affordable, secure and sustainable technologies to help the UK address its long term emissions reductions targets as well as delivering nearer term benefits. We make targeted commercial investments in nine technology programmes across heat, power, transport and the infrastructure that links them.

About Shell Shipping & Maritime

Shell Shipping & Maritime is Shell's centre for maritime expertise. Located within Shell's integrated Trading and Supply business it provides commercial, ship management and technology services, along with assurance advice to internal and external customers. It is one of the world's largest charterer of ships and operates 10 oil tankers and around 40 LNG carriers. In addition, we have more than 240 oil and LNG vessels on time charter.

On any one day, Shell has an interest in around 2000 vessels on the world's oceans and rivers. It is involved in over 100,000 cargo transfers a year. A Shell cargo is loaded or discharged every five minutes into one of the 130 global ports and terminals in which it operates.

Shell Shipping & Maritime is also accountable for the safety aspects for all of Shell's floating activities, including mobile drilling rigs, supply boats, anchor handlers and tugs, Floating Oil Storage, Regasification Units and Single Buoy Moorings.

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