



LDA AND NORSEPOWER JOIN FORCES IN SHIPPING LARGE AIRBUS AIRCRAFT COMPONENTS: FUTURE FLEET OF LOW-EMISSION ROROS TO USE NORSEPOWER ROTOR SAILS™

The next generation Norsepower Rotor Sail™ control system provides Louis Dreyfus Armateurs with better efficiency and real-time savings reports, guaranteeing the timely and environmentally friendly moving of Airbus aircraft components.

Suresnes, France – February 8th, 2024 - In an historical wind propulsion deal, the French shipowner, Louis Dreyfus Armateurs SAS (LDA) and the Finnish mechanical sail company, Norsepower Oy Ltd, have announced that the Norsepower Rotor Sail™ technology will be installed on the new low-emission RoRo fleet to be chartered to Airbus.

The Norsepower Rotor Sail is a modernised version of the old Flettner rotor concept that uses electric power to actively rotate the cylinder-shaped rotors on the deck. These rotating sails use the wind to produce powerful thrust, reducing fuel consumption, lowering emissions and costs.

The new low-emission vessels, which will be used to ship aircraft components for Airbus, will each be powered by a combination of six 35-meter tall Norsepower Rotor Sails and two dual-fuel engines running on maritime diesel oil and e-methanol. Additionally, routing software will optimise the vessels' journey across the Atlantic, maximising wind propulsion and avoiding drag caused by adverse ocean conditions.

« While the IMO has set challenging targets to bring shipping to net-zero, wind propulsion is considered as a viable element of the sustainable energy mix for seagoing ships. We are proud to be part on the energy transition through our partnership with Norsepower to offer innovative solutions and sustainably driving change. » said Mathieu Muzeau, Transport and Logistic General Manager at Louis Dreyfus Armateurs.

By 2030, for the Transatlantic route, the new fleet will generate approximately 50% fewer CO₂ emissions compared to 2023. The rotor sails will feature the brand new patented Norsepower Sentient Control™ (NPSC™), a real-time force measurement, control and savings reporting system. This world-first tool enables each rotor to be controlled individually. This optimises efficiency by managing the complex aerodynamic interactions between the sails and the hydrodynamic behaviour of the vessel. Extensive Computational Fluid Dynamics (CFD) and wind tunnel tests have been carried out during the design phase to optimise the sail arrangement and design.

Tuomas Riski, CEO of Norsepower, commented: « *This fleet-wide deal is a game changer for the whole auxiliary wind propulsion industry. Firstly, it is the biggest deal ever made in the mechanical sails market – and, in a world first, it includes our brand new Norsepower Sentient*

Control™ tool. We are honoured that the first charterer to utilise this advanced control system is Airbus, the foremost expert in aerodynamics in the world. We thank LDA and Airbus for being forerunners of this industry – and look forward to our continued cooperation! »



Image: LDA low-emission RoRo vessel with six Norsepower Rotor Sails™

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About Louis Dreyfus Armateurs

For over 170 years, LOUIS DREYFUS ARMATEURS Group (LDA) has specialised in providing custom industrial maritime solutions with high-added-value activities and integrated services to its clients, ranging from ship design and ship management to maritime operations, in the fields of transport, logistics, submarine cables and renewable energy. LDA is a French family-owned group, offering a worldwide presence with over 2,600 staff and 100 vessels. For more information, visit: www.lda.fr

About Norsepower

Norsepower Oy Ltd is a Finnish clean technology and engineering company pioneering modern auxiliary wind propulsion. The Norsepower Rotor Sail™ has been used by customers for already ten years and has been installed on various ship types such as tankers, LCO2 carriers, bulk carriers, and ro-ro and ro-pax vessels. The installed base will be more than doubled within the next 12 months. The performance of the Norsepower Rotor Sails™ has been confirmed by multiple independent third-party verifiers and is seen as one of the most prominent already existing solution for significantly reducing the carbon emissions of shipping.

For more information on the Norsepower Rotor Sail™, visit: <u>www.norsepower.com</u>