



norsepowerTM

PRESS RELEASE

Performance monitoring and verification drives orders and investment for Norsepower

NAPA data analysis and fuel-saving verification leads to €3 million investment and first commercial order for a Flettner rotor

Helsinki, Finland – 29 January 2016 – Finnish engineering company, Norsepower today announced that it has received €3million in investment from a syndicate led by venture capital fund Power Fund III and has installed a second rotor sail on Bore's Ro-Ro vessel *MS Estraden*. Data analysis and verification by NAPA, the leading maritime data analysis, software and services provider, has been fundamental to these developments by proving the effectiveness of Norsepower's technology.

A single Norsepower Rotor Sail was installed on the 9,700 DWT Ro-Ro carrier in late 2014. Although the weather conditions were largely calm over the three-month trial, data analysis from vessel performance monitoring and verification software, ClassNK-NAPA GREEN, demonstrated that the rotor sail delivered clear and significant savings of 2.5%.

Based on this evidence, Bore has ordered a second installation; the first commercial order for a Flettner rotor in shipping. Doubling the rotor sails has now proven to double fuel savings; NAPA recorded a 6.1% reduction in fuel consumption, avoiding 1,200 tonnes of CO² emissions annually.

Measurement, analytics and third-party verification has helped Norsepower evolve its rotor sail from an innovative system for trial, to a proven and marketable fuel efficiency technology with a clear business case. In addition to the expanded market potential, this evidence has also helped Norsepower increase its enterprise value and secure the future of the business. A syndicate led by Power Fund III, a Clean tech venture fund managed by VNT Management, has invested €3 million to support Norsepower's growth and market expansion.

Tuomas Riski, CEO, Norsepower commented: "Since delivering our first proven application with Bore last year, our business has grown from strength to strength. With this significant investment from VNT and our first commercial installation, we have now cemented our position as leaders in the growing wind technology market. Objective data and impartial verification of the fuel savings delivered by the technology has been absolutely critical to this evolution and will remain central to the way in which we work with shipowners and operators."

Jouni Salo, Product Manager, Shipping Solutions, NAPA commented: "Independent verification of Norsepower's technology has required a significant and complex analysis process. The operating route of the vessel posed many challenges from differing wind conditions to varying sea depths, all of which impact fuel consumption and had to be accounted for with randomised trialling, robust data collection and advanced statistical modelling. The results, however, have made it all worthwhile. The two-sail installation is delivering the largest fuel saving

of any efficiency technology NAPA has measured. We talk figures of Rotor Sails being effective 80% of sailing time, 460kW average propulsion boost and 1.5MW peaking for 10% of time. The fact that NAPA has not only proven this eco-efficiency technology, but also boosted Norsepower's enterprise value through orders and investment really shows the power of big data when applied correctly."

Victoria Stulgis, Senior Associate, Carbon War Room commented: "It is great to see Norsepower, Bore and NAPA collaborating to pilot this technology and conduct rigorous data analysis. These first movers are key to demonstrating that efficiency technologies such as wind have proven savings, which can unlock new sources of investment for Flettner rotors and other technologies that can deliver significant efficiency gains."

The Norsepower Rotor Sail Solution is a modernised version of the Flettner rotor - a spinning cylinder that uses the Magnus effect to harness wind power to propel a ship. When the wind conditions are favourable, Norsepower Rotor Sails allow the main engines to be throttled back, saving fuel and reducing emissions while providing the power needed to maintain speed and voyage time. Rotor sails can be used with new vessels or can be retrofitted on existing ships without off-hire costs.

About NAPA

In its nearly 30 years of operation, NAPA has become a global leader in maritime software, services and data analysis for the maritime industry; providing best in class data-led solutions for safety, efficiency and productivity in both ship design and operations.

NAPA operates globally, with eleven offices across Asia, Europe and the Americas supported by its Helsinki headquarters. To date, NAPA has nearly 400 user organisations for its design solutions and 2,000 installations onboard vessels. For more information, visit www.napa.fi

About Norsepower

Norsepower Oy Ltd is a leading Finnish marine engineering company specialising in clean tech solutions within the marine sector. Since its establishment in November 2012, Norsepower has gathered more than \$6 million USD of funding, which has enabled development, testing and piloting of the Norsepower Rotor Sail Solution. The main investors behind Norsepower are VNT Management, Finnvera Oyj, Lifeline Ventures and Wate Oy. Norsepower is also funded by Tekes – the Finnish Funding Agency for Technology and Innovation. Norsepower is the global market leader in cargo vessel auxiliary wind propulsion systems. For more information, please visit www.norsepower.com.

About Carbon War Room

Carbon War Room (CWR) is a global nonprofit organization, founded by Sir Richard Branson and a team of like-minded entrepreneurs, to accelerate the adoption of business solutions that reduce carbon emissions at gigaton scale and advance the low-carbon economy. Carbon War Room has Operations in Shipping Efficiency, Trucking Efficiency, and Smart Island Economies.

Carbon War Room launched Shipping Efficiency in 2010. Since then, it has worked with RightShip to develop the A to G GHG Emissions Rating and make it publicly available at ShippingEfficiency.org. In collaboration with UCL Energy Institute and other industry experts, CWR has created new financing models for efficiency retrofits and partnered with investor EfficientShip Finance to make \$25 million available for these retrofits.

For more information, go to www.carbonwarroom.com

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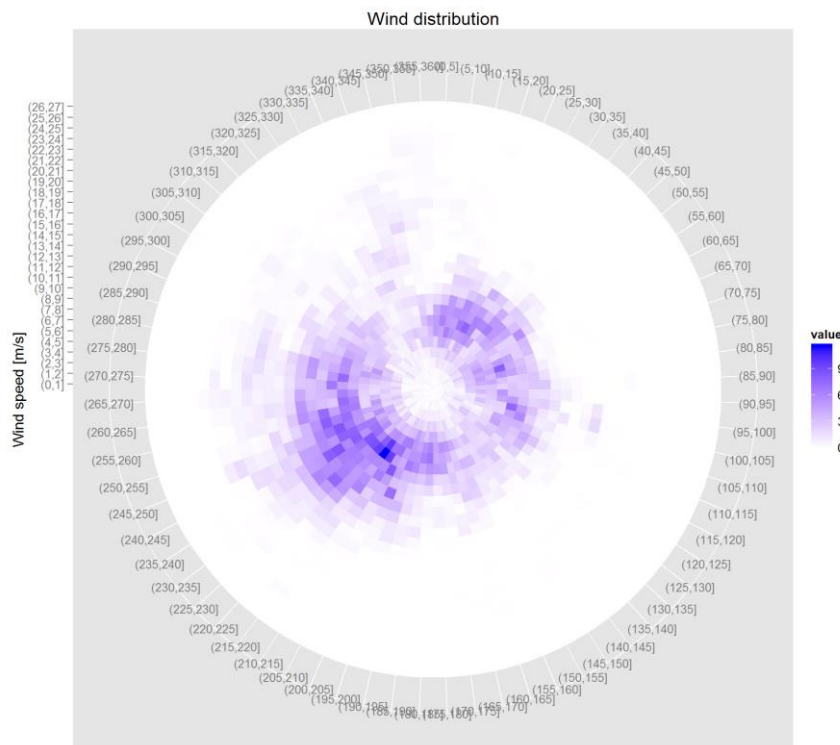
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Bore's Ro-Ro vessel MS Estraden with two Norsepower Rotor Sails installed onboard.



True wind speed distribution over tested period