Interreg North Sea Region WASP
European Regional Development Fund
EUROPEAN UNION

Project Duration
18 June 2019 - 15 Jan 2023

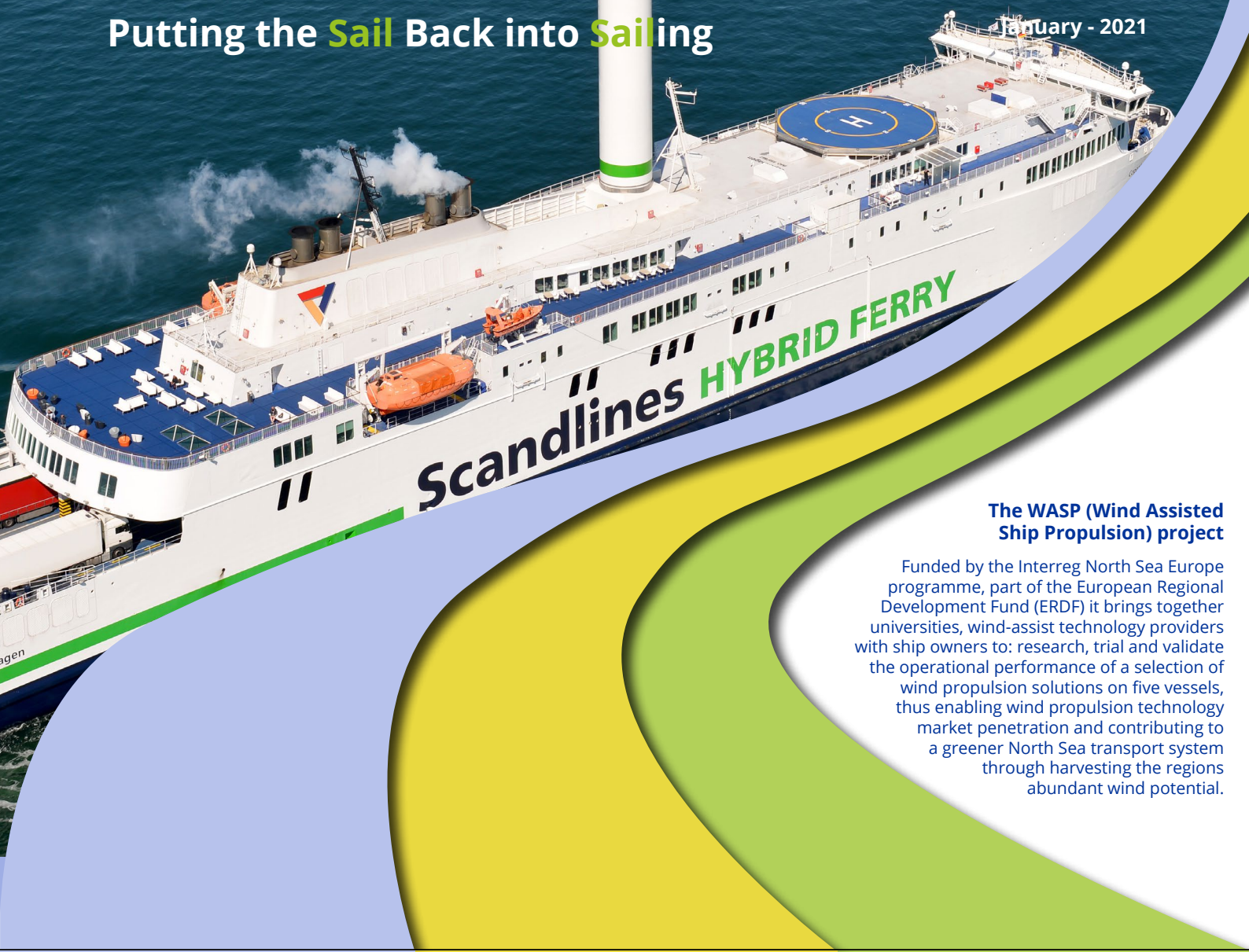
Total Budget: **€5,393,222**
EU funding: **€2,251,612**

https://northsearegion.eu/wasp

WASP News

Putting the Sail Back into Sailing

January - 2021



The WASP (Wind Assisted Ship Propulsion) project

Funded by the Interreg North Sea Europe programme, part of the European Regional Development Fund (ERDF) it brings together universities, wind-assist technology providers with ship owners to: research, trial and validate the operational performance of a selection of wind propulsion solutions on five vessels, thus enabling wind propulsion technology market penetration and contributing to a greener North Sea transport system through harvesting the regions abundant wind potential.

Boomsma Installation

Boomsma Shipping is the third partner company to complete their windassist system when they installed two eConowind VentiFoil wind-assisted propulsion units earlier this month during a port call in Harlingen. The Covid pandemic has added to the installation challenges and delayed the process somewhat, however the final...

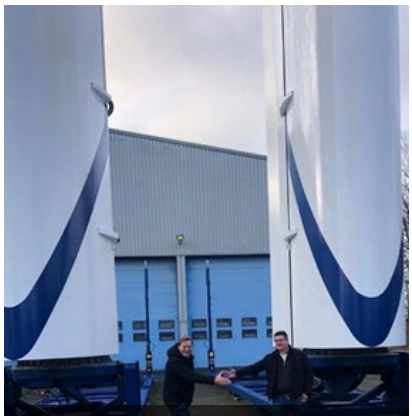
Scandlines talk about the MV Copenhagen Rotor Sail installation

Interview with Scandlines CEO Søren Poulsgaard Jensen and Naval Architect Rasmus Nielsen about the MV Copenhagen Rotor Sail Installation...

Tharsis signs up

In the second half of 2020, the WASP project welcomed a new partner, the Netherlands-based Tharsis Sea-River Shipping. The company has over 40 years of shipping experience and the contracted installation will feature two eConowind 3m x 9m TwinFoil units, a rigid sail system different from the companies VentiFoil system. These units will be installed on the 88m, 2,364 dwt diesel-electric general...

Boomsma Installs VentiFoil Flatrack system on MV Frisian Sea



Ton Boomsma and Frank Nieuwenhuis shake hands Covid-style after inspection of the units.

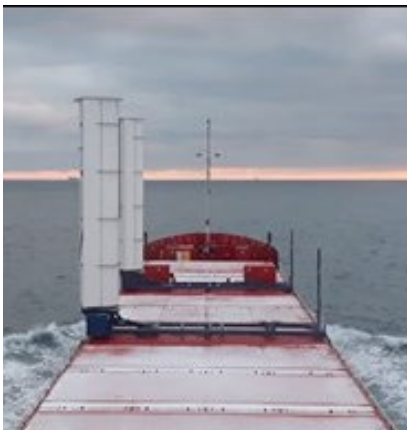
At Boomsma Shipping is the third partner company to complete their wind-assist system when they installed two eConowind VentiFoil windassisted propulsion units earlier this month during a port call in Harlingen. The Covid pandemic has added to the installation challenges and delayed the process somewhat, however the final installation went without a hitch.

The Dutch flagged MV Frisian Sea, a 6477dwt general cargo vessel has now made its maiden voyage to Vasteras, Sweden with the VentiFoils in operation, during which eConowind has been conducting the start-up tests. The coming month will be used to optimize the system and operations and train the crew.

The VentiFoils (Wind Assisted Ship Propulsion Units) by eConowind are similar in design to those installed on Van Dam Shipping's MV Ankie and are designed as optimal compact (non-rotating) wing profiles, creating superior thrust by means of the principle of boundary-layer-suction, for which ventilators are mounted inside the VentiFoils.

However, on the Frisian Sea, the new Flatrack design is different bringing the flexibility of a cut down container, being movable by the vessel's hatch crane. This system needs limited installation time and has the possibility for use on several vessels. With this new, flexible Flatrack system the units can be positioned just in front of the superstructure during loading etc.

Read more...



The maiden trip of Frisian Sea with VentiFoils deployed and the first loading while VentiFoils in storage position

Rörd Braren Prepares for WASP Fourth Installation

Rörd Braren is gearing up for the installation of the EcoFlettner system in the coming period. In late September they started the construction of a test foundation near the quayside in Südpier, Leer/Germany and then in November the rotor was mounted, with testing of the cabling and control system. The new rotor of the type "EF 18" is 18 meters high and has a diameter of three meters and the total weight of the system is said to be 27 tons. With some understandable delays from the Covid pandemic Rörd Braren will proceed over the next two months to conclude the installation of the foundation and rotor on the MV Annika Braren at SEC Ship Services and Repairs in Leer

Read more...

Drone footage of the wind rotor from Eco-Flettner, which will be installed in Q1 2021, Click Here

Interview with SCANDLINES CEO & Naval Architect

Søren Poulsgaard Jensen, Scandlines, CEO

Rasmus Nielsen, Scandlines, Naval Architect

Question 1: What made you select the hybrid ferry "Copenhagen" as the vessel for the installation and why did you decide to join the WASP project?

Søren Poulsgaard Jensen, Scandlines CEO: The technology has the optimum effect when it is windy and the wind comes from the side. The route between Gedser to the north and Rostock to the south is almost perpendicular to the prevailing wind from the west giving us favourable conditions for using rotor sails on the crossing. It can be said that – while looking for shipowners that are interested in testing wind power technology (WPT) on their vessels - the WASP project has found us. As we were evaluating the technical feasibility of rotor sails on our ferries at that time, the timing was perfect.

Question 2: Do you follow "a bigger plan" by the installation of green technology on your vessels?

Søren Poulsgaard Jensen, Scandlines CEO: Indeed! The installation of the rotor sail was another important step in our so-called "Green Agenda". Looking back to the year 2011, we started our journey with the ambitious target to become a zero-emission ferry operator in the future. Constant improvements of the energy consumption and efficiency increases of the vessels are necessary elements to reach that target. The rotor sail is just another piece in that very big puzzle.

Question 3: How was the rotor installation process, did that go to plan?

Rasmus Nielsen, Scandlines Naval Architect: Definitely! The rotor sail was successfully installed on the hybrid ferry M/V Copenhagen in just a few hours during a scheduled overnight stop on 25 May 2020, following meticulous preparation over the past few months. The ferry was initially prepared for the installation during a yard stay in November 2019 already, where a steel foundation was established and cables were pulled.

Question 4: You have been operating for over six months now, can you share with us your team's thoughts so far?

Rasmus Nielsen, Scandlines Naval Architect: It's still a bit too early to draw final conclusions about the performance of the rotor sail. We have set ourselves a period of at least one year in operation before doing that. However, according to the feedback received from the vessel so far, the start was very promising. One focus of the WASP project is the validation of performance data. This will be beneficial for our case as well.

Question 5: How about the reaction from your passengers?

Søren Poulsgaard Jensen, Scandlines CEO: We are getting many questions from our customers who would like to have more details on this "additional funnel". Contrary to our former green investments like the batteries or the new thrusters that are located in or under the vessels, the rotor sail is very visible for everybody. That's why we have decided to show a short animation on the screens on board the ferry to explain the operational principle of the rotor sail.

Question 6: Will you consider other installations on your other vessels/routes?

Søren Poulsgaard Jensen, Scandlines CEO: As mentioned earlier, we have to await the final assessment of the operational performance of the Copenhagen first. In case the results are according to our expectations, we plan to install another rotor sail on the sister vessel Berlin that is operating on the same route between Gedser and Rostock.

Question 7: What do you consider to be the biggest barrier to the uptake of wind-assist systems in the North Sea and Baltic regions?

Rasmus Nielsen, Scandlines Naval Architect: There are only a few WPT installations available in the shipping market that could be used as benchmarks for the own case. That's why there is still a quite big uncertainty about the expected performance and the corresponding business case. Projects like WASP could definitely help to collect more proven data on WPT and at the same time raise the awareness of the maritime industry.

Read more...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THUN LIVERPOOL
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Tharsis joins WASP

In the second half of 2020, the WASP project welcomed a new partner, the Netherlands-based Tharsis Sea-River Shipping. The company has over 40 years of shipping experience and the contracted installation will feature two eConowind 3m x 9m TwinFoil units, a rigid sail system different from the companies VentiFoil system. These units will be installed on the 88m, 2,364 dwt diesel-electric general cargo vessel, MV Tharsis which has a regular weekly voyage between Duisburg and the East coast of the UK., hopefully before the end of Q1 this year.

The TwinFoil is a wing with a flap principle similar to those used by aircraft during landing and take-off. Setting the wings optimally relative to the wind will be done by a small third steering-wing, which is fast and reliable. The Netherlands based NG shipyard will install the system and bring their experience of fabricating aluminium constructions in order to stay under the 2500 kg total weight as needed for the operations on the vessel.

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WASP Policy Briefing

In October, we had the release of the first WASP policy briefing paper. The policy paper was widely disseminated to IMO delegations, EU departments and all EU transport ministries among others.

Modern wind technologies (rotors, suction wings, sails, kites etc.) can provide a large part of the power needs for new and existing cargo and passenger ships, reducing fuel consumption and the connected emissions significantly. However, market and non-market barriers (lack of information, conservative industry, business structure, focus on short term profit etc.) are blocking the uptake of wind technologies. These barriers can be overcome by flag and technology neutral regulations at IMO, EU, national and/or at regional level. The EU Interreg program for the North Sea Region has funded this policy brief as a part of the WASP-project: Wind Assisted Ship Propulsion.

Regulation to promote wind technologies and other CO_2 savings, 10 points:

- Introduce a significant carbon levy, which is being raised substantially yearly.
- Introduce a CO_2 dependent speed limit or engine power limit at sea.
- CO_2 reduction aligned with the 1.5°C goal of the Paris Agreement.
- More public Research & Development funds for "non-fuel" propulsion technologies.
- New 1.5°C compatible EEDI targets for 2025/30 and beyond.
- Include shipping in a flag neutral emission trading system.
- Stricter regulation for ship emissions to air and water.
- New port fees based upon emitted CO_2, NOx , SO_2 and particles.
- Stop public support for fossil fuels and fossil fuel infrastructure.
- Include life-cycle assessments when assigning CO_2 savings.

Download

Interview for NMT Magazine

Danitsja van Heusden – van Winden from the Netherlands Maritime Technology Foundation (NMTF):

- There are many emission regulations from the EU and IMO, which we need to meet soon and wind can contribute to this. There are more projects about renewable energy, but in the field of wind there is not so much tangible happening. A better environment starts with yourself, so that's why we are doing this project.
- We find it important to gain knowledge and insight about the ways and means of propulsion and to share that knowledge with our members.
- The goal is to stimulate the 'upscaling' of wind-assisted propulsion in the maritime sector

Frank Nieuwenhuis from eConowind (external supplier of wind propulsion technology for WASP):

- Moreover, the transition to, for example, hydrogen will take a while. Wind is a great alternative that you can already apply now. And provides energy that you do not need to replace in the future, by for example hydrogen, saves money too.
- We have been studying the theory on model scale for years. The nice thing with this project is that we are now putting it into practice
- On the basis of the project outcomes, we can convince other interested parties easier.
- So far there is little practical experience with partial propulsion through wind, which prevents and/or limits the gut feeling of shipowners to proceed and purchase a propulsion system.

Read more (Dutch)...

"The goal is to stimulate the 'upscaling' of wind-assisted propulsion in the maritime sector"

Danitsja van Heusden – van Winden - NMTF

IMO MEPC75 was postponed until 16-20 November 2020 and was changed to a virtual conference, however the MEPC75 Inf26. document was included in the proceedings with its overview of the status of wind propulsion, outlining the advantages of wind propulsion and includes references to the WASP project. The Comoros flag intervention also drew attention to the submission and it's inclusion in the proceedings has had a significant effect on IMO delegation interest in engaging with wind solutions.

Read more...

Another key development in the last six months was the EU vote on including shipping into the EU Emissions Trading System (EU Emissions Trading System (EU ETS) | Climate Action (europa.eu)) Information on the WASP project and potential for wind propulsion to assist with decarbonisation of the fleet was sent to all EU representatives.

While it will take time for this change to come into force, the likely level of carbon price will be EUR25-30 making fuel EUR75-90 more expensive per ton, but also it is proposed that 50% of the levy proceeds will be made available for investment into decarbonisation technologies, including wind-assist propulsion.

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Recent Events

New Technology & Adoptions Report

The WASP project released its first report authored by Kühne Logistics University (KLU), entitled "New Wind Propulsion Technology:
A Literature Review of Recent Adoptions". It provides a detailed description of recent commercial WASP technological installations in the shipping industry. It further discusses the bunker saving potential of the different available technologies and the implications of commercial, on-board and environmental factors on the final fuel consumption reduction. Overall, the report shows a promising trend of future WASP technological diffusion within the industry. The authors would like to thank the project consortium members for their valuable feedback and support during the development of the report.

Read more...

The WASP Business Case

The Kühne Logistics University discussed with Scandlines Gedser-Rostock, Shipping company Rörd Braren, Boomsa Shipping, Van Dam Shipping and Tharsis Sea-River Shipping about the business case for WASP technologies. The discussions focused, among others, on the benefits, risks, organizational transformation and the decision making process associated with WASP installations. The preliminary analysis indicates the important role of a variety of stakeholders - these range from policy makers and customers to classification societies in strengthening the WASP business case. The complete results are planned to be presented in upcoming industry and academic conferences in 2021.

Seminar: Wind Assisted Propulsion Challenges and Perspectives

In early January, WASP project seminar on Wind Assisted Propulsion Challenges and Perspectives was hosted by KU Leuven, Dept of Mechanical Engineering in Belgium. The seminar featured Professor Orestis Schinas from WASP partner, HHx Blue talking about the financial challenges and solutions for scaling up installations and Gavin Allwright, Secretary general of WASP partner International Windship Association and the communications work stream lead giving an overview of the WASP project and the wider wind propulsion technical portfolio.

Watch Here: Wind Assisted Propulsion Challenges and Perspectives Meeting Recording

Enkhuizen Nautical College Sets Course for Wind-Assisted Ship Propulsion and Sustainable Shipping

The 'Enkhuizen Nautical College', founded in 1978, is the only nautical college in Europe where the focus lies on teaching students to navigate vessels under sail. Regular subjects like (astronomical) navigation, collision regulations and marine engineering are supplemented with specialized subjects such as square-rigged sailing, sailing vessel design and sailing vessel stability.

This year this will be extended with a technical introduction to modern developments in Sailing ships: Wind-assisted ship propulsion course with invited presentations and seminars from partners and suppliers of the WASP project along with other members of the International Windship Association.

Read more...

WASP First reporting round approved & positively assessed

In September, the WASP project met it's first key milestone with the first round for reporting being approved along with very positive feedback from Interreg North Sea Region.

After 1/5 of project implementation, we are making good progress towards our objectives and targeted outputs. We have set the groundwork for the continued implementation of the project and started to deliver on compulsory outputs. This also included the delivery of the project's first pilot on the MV Ankie, Van Dam Shipping along with the clear time plan for the delivery of the remaining pilots at Scandlines, Boomsma, Rörd Braren and Tharsis, of which two more have now been completed.

Read more...

Publication in the Naval Architect magazine: Rotor sails: putting a new spin on shipping?

In early March, an interview study with shipowners, technology providers and the crew of a rotor ship was performed to investigate the impact of wind propulsion on operations and crew and uncover clues to unlocking the full potential of this technology. David Newman reports on the findings and an article titled 'Rotor sails: putting a new spin on shipping?' which was published in the November issues of the Naval Architect magazine.

Read more...

Partners & Contact

1 NETHERLANDS MARITIME TECHNOLOGY
2 GREEN TRANSITION DENMARK
3 HHX .blue
4 IWSA International Windship Association
5 KLU KÜHNE LOGISTICS UNIVERSITY
6 KU LEUVEN
7 NORD University
8 Scandlines
9 Scheepvaartbedrijf van Dam
10 B
11 BOOMSMA
12 SSPA Your Maritime Solution Partner
13 CHALMERS UNIVERSITY OF TECHNOLOGY
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