



## Newsletter December 2021

### Secretary's Message

I would like to open this message with two things, an apology and some applause. The apology is a simple one, this newsletter is delayed and that is in part due to the surge in workload as momentum has been building around wind propulsion, along with the need to focus on policy and ensure decarbonisation pathways incorporate wind propulsion correctly with its potential fully understood and brought into the heart of the approach. With that done, we can help facilitate a swift, deep, more efficient, cost effective and more just transition, but still a way to go there. The applause? This is for our members and supporters for the huge amount of work that is going on in the sector to deliver on the potential and the promise that we started the '[Decade of Wind Propulsion](#)' with at the beginning of the year. That delivery is at the core of the campaign, so how have we measured up? What does our report card look like?

- **Installations:** This year has seen an additional eight vessel installations, with a total of 16 rigs installed and along with a handful of new large vessel builds underway. This should bring the number to 20 by the end of Q1 next year. 2021 also saw the announcement of 15 additional large vessels and 8 smaller vessels for build/delivery between 2022-24, with more announcements pending.
- **Market Maturity:** The early signs are there, with investments announced in production facilities in Europe & Asia along with numerous JIP, JDP and JV announced or established.
- **Pipeline:** The pipeline of projects and technologies has continued to strengthen and progress with more than 10 projects coming into advanced prototype testing and others moving into premarket stages.
- **Policy & Pathways:** Here we have seen IWSA join the ESSF and IMO with interim consultative status, MEPC 77 saw the adoption of the circular 896, including improved guidance for Wind Propulsion systems in EEDI/EEXI calculation
- **Collaborations** – well we have been active in the WiSP & WASP projects, with quite a few deliverables coming out of those projects, with much more to come in 2022. We aim to widen our work with both our existing and new partnerships and affiliations this year.
- **Network & Capacity:** IWSA has continued to grow organically, adding 35 new members, new staff positions and both our website and social media continue to experience rapid growth in followers and visitors.
- **Outreach:** One of the priorities this year was to reach out beyond just the shipping industry, and while that is difficult to measure, we have had an acclaimed documentary aired on HBO, a recent article in the New York Times, had over 40,000 votes cast in our COP26 aligned Awards campaign. This outreach will continue to grow – help us!

I think you will agree that a lot has been happening in the world of wind, but there is still a long way to go on 'Delivering' an energy source that has the potential to transform the industry and effectively pay for itself and the [lion share of the other decarbonisation costs](#).

'*New technologies for greener shipping*' has been chosen as the World Maritime theme for 2022, reflecting the need to support a green transition of the maritime sector into a sustainable future, while leaving no one behind – if this isn't a call to action to the wind propulsion sector, I don't know what is!

Gavin Allwright (IWSA Secretary General)

[secretary@wind-ship.org](mailto:secretary@wind-ship.org)

### Newsletter Sections

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|---|--|
| 1. Secretary's Message                            | 5. Education Program                     |
| 2. Project Updates & Wind Propulsion Developments | 6. Key IWSA Programs for 2022+           |
| 3. New Members & Registered Supporters            | 7. Upcoming Events                       |
| 4. Other News, Policy Developments & Media        | 8. Membership & Membership Fee Structure |

## 2. Project Updates & Wind Propulsion Developments

### Airseas (France)



[Airseas](#) installed a 500m<sup>2</sup> version of their Seawing kite system on the 154m, 21,500 GT RoRo vessel, the MV Ville de Bordeaux owned by [Louis Dreyfus Armateurs](#) and chartered by Airbus in La Rochelle in December, and will undergo extensive testing from January.

[Read more...](#) [Video Here](#)

[Kawasaki Kisen Kaisha, Ltd. \("K" LINE\)](#) has signed a long-term consecutive voyage charter with JFE Steel Corporation regarding the upcoming new built capesize bulk carrier (210,000 DWT) fuelled by liquified natural gas (LNG) to be delivered with a Seawing system installed for delivery in Q1/2 2024.

[Press Release](#)

### Norsepower Oy Ltd (Finland)

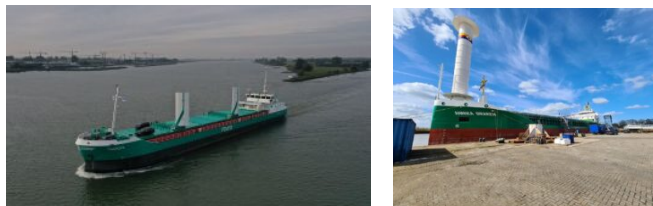


[Norsepower](#) celebrated the launch of the newly built MV Sea Zhoushan, a 325,000 dwt VLOC bulker with five of their tiltable rotor sails installed. The vessel is owned by Pan Ocean Ship Management and chartered by Brazilian mining company Vale. The rotor sails will deliver an estimate average yearly saving of 8% (based on a motor vessel operation) [Read more...](#)

Kongsberg Maritime and [Norsepower](#) have also signed an MoU to facilitate the integration of auxiliary wind propulsion to new and existing vessels in diverse maritime markets. [Read more...](#)

After the successful installation and operations of the rotor sail on the Scanlines ferry MV Copenhagen, Norsepower will supply a similar sized rotor sail for the sister ship, MV Berlin to be delivered in the first half of 2022 [Read more...](#)

### WASP Project (North Sea Region)



The EU [WASP project](#) has seen two installations over the last six months with Tharsis Sea-River Shipping installing two [eConowind](#) retractable wing sails on their 88m, 2,364 dwt diesel-electric general cargo vessel, MV Tharsis at the Neptune Shipyard, near Rotterdam. [Read more...](#)

The MS Annika Braren, part of the Rörd Braren fleet had a 18m Ecoflettner rotorsail installed at the SEC shipyard in Leer, Germany [Press Release](#)

Finally it was announced that Scandlines will install their second [Norsepower](#) rotor sail onboard the MV Berlin (MV Copenhagen's sister ship), with foundation work completed and the rotor to be fitted in mid-2022. [Read more...](#)

### AYRO (France)



[AYRO](#) announced in May that their new wind-assisted containership design, the Trade Wings 2,500 has received an AiP from [Bureau Veritas Group](#). The vessel, which has been designed jointly by [VPLP](#) design, Alwena Shipping, SDARI and [AYRO](#), features six Oceanwing wingsails installed on a vertical sliding mechanism so they can be retracted partially while the vessel is in port. The wingsails alone will deliver c.20% of the total propulsive energy for the vessel. [Read more...](#)

AYRO went on to obtain the label "startup à impact" from BPI France and they were awarded the prestigious Evolen Innovation 2021 prize. They also announced they had secured €10.5 million in funding to help establish the AYRO factory in Caen, France. Production of the four Oceanwing units for the 121m RoRo MV Canopée (currently under construction) will start in December 2021 [Press release and media package available here](#)

## Mitsui O.S.K. Lines (Japan)



[Mitsui O.S.K. Lines, Ltd](#) and Tata Steel announced a partnership to develop a greener bulker, and this design will feature the Wind Challenger Sail system [Read more...](#)

MOL is also teaming up on an R&D project with Oshima Shipbuilding & Iknow Machinery to research and develop mounting sails on ships' cargo handling cranes and similar equipment to boost propulsion force. [Read more...](#)

They have also announced an agreement with Vale to conduct a joint study on the installation of a Rotor sail system from [Anemoi](#) on a 200,000-ton class in-service bulk carrier, which mainly transports iron ore for steel production. [Read more...](#)

## NEOLINE (France)



[Neoline](#) welcomed Clarins as it became the first cosmetics company to commit to move freight with Neoline, in line with their roadmap driving its CSR strategy and aimed at reducing its carbon footprint [Read more...](#)

In July, Neoline also announced that Longchamp, the luxury brand, has reserved space on their new primary wind vessels. Under the agreement, Longchamp has committed to shipping at least 50% of its annual container volume between France and the United States when the first ship begins sailing in the first half of 2024. [Read more...](#)

These commitments join the growing number of brands committed to the trans-Atlantic line, including Renault, Hennessey, Michelin, Beneteau and Manitou

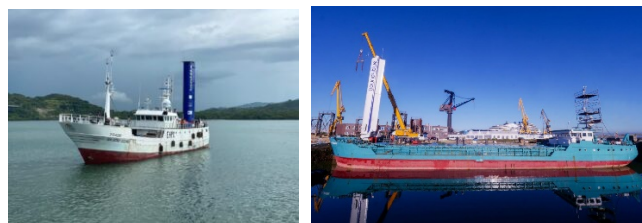
## Anemoi Marine Technologies (UK)



In May, [ANEMOI Marine Technologies](#) announced a project with Tufton Investment Management to install 3 large Rotor Sails on their TR Lady, a 82,000DWT Kamsarmax bulker due in mid-2022, will see Anemoi installing the Rotor Sails on their unique rail deployment system, allowing rotors to be moved during cargo operations. [Read more...](#)

In November, Anemoi and Tufton were delighted to win a coveted IWSA Wind Propulsion Innovation Awards and would like to thank everyone who voted for their support. In 2021, Anemoi has focussed on scaling up production in China to support increased client orders, aligning to their strategy of 50 installations/yr from 2025. With interest growing significantly they have nearly trebled staff since 2020 and opened new offices in Southampton and China. Other news includes a joint study into Rotor Sails with MOL and Vale and the completion of the Newcastlemax JDP with Oldendorff, SDARI and Lloyds Register.

## bound4blue (Spain)



[bound4blue](#) has just announced their second installation, this time a 18-metre-high eSAIL® on the 60m converted cargo vessel "La Naumon", the theatre vessel of the world-acclaimed La Fura dels Baus and the production company Elipsis [Read more...](#)

This month also saw Bertrand Charrier, co-inventor of the suction sail, partner with bound4blue to further enhance the company's innovative wind propulsion technology [Read more...](#)

Earlier in the year the company completed a further round of finance, raising an additional €5 million [Read more...](#) And subsequently they unveiled their first retrofit installation of their 12m eSAIL® system on the 40m, 539 GT Spanish flagged fishing vessel Balueiro Segundo. [Read more...](#)



## Wallenius Marine (Sweden)



[Wallenius Marine](#) & Alfa Laval have formalised their 50/50 joint venture, known as AlfaWall Oceanbird with Niclas Dahl as its new managing director. The Oceanbird concept is to install wing sails on a transatlantic car carrier with a capacity of 7,000 vehicles. The solution should cut emissions by up to 90% compared to today's most energy-efficient vessels at an average speed of 10 knots. [Read more...](#)

## Michelin (France)



[Michelin](#) announced the development of the inflatable WISAMO (WIng SAIL MObility) which is projected to improve ship fuel efficiency by up to 20%.

[Read More... \(English\)](#) [Read More... \(French\)](#)

## ADD Technologies (France)



In November, Hugo Lauras finished his 2021 Mini Transat arriving in Guadeloupe with an [ADD Technologies](#) installation to measure the performance & prove the maturity of our system in terms of performance, efficiency and endurance. (a big thank you to Hugo Lauras, NA). The system continues its development at scale with a wingsail equipped with the ADD Modules system hoisted on a Class40 at Lorient-La Base in July. End of the production phase with Voilerie Allard-Elvstrom and ADD Technologies : the prototype is ready to start the test phase. This is a 1/2 scale of this wingsail project supported by the Brittany Region (Inno R&D) and intended to decarbonize the fleet of new or existing ships of the maritime industry.

## BAR Technologies (UK)



[BAR Technologies](#) AiP from DNV has been awarded to BAR Technologies for their WindWings system ahead of the first installation of the system in 2022, and deployment as part of the EU Horizon CHEK research project. [Read more...](#)

New Virtual Showroom for WindWings: [Deltamarin](#), Cargill and BAR Technologies - [View here](#)

## eConowind (Netherlands)



Along with the [MV Tharsis installation](#), Schram Shipping has partnered with [eConowind](#) to retrofit 2 x 16m VentiFoil units on its 5,097 dwt general cargo vessel Anna, built in 2008. Installation scheduled by end 2021. [Read More...](#)

## Sail Cargo Inc. (Costa Rica)



[Sailcargo Inc.](#) has made leaps and bounds in 2021 - announcing a new fleet of ships, introducing hydrogen fuel cells and forming new cargo partnerships. While the [first ship, Ceiba](#) is still under construction a 2nd ship, *Pitaya*, has been commissioned (starting build after *Ceiba* launched in 2023, same design & built at the same regenerative shipyard in Costa Rica). Sailcargo is also working with renowned Costa Rican space rocket company [Ad Astra Rocket](#) to develop green hydrogen propulsion for the ships (both land-based infrastructure and onboard systems). A Canadian cargo partner, [Cafe William](#), an important importers of Fairtrade coffee in Canada, has made a generous investment and undertaken to fill all northbound cargo voyages. This financial support has allowed for a surge in construction and prompted the expansion of the fleet.

## Dealfeng New Energy Technology (China)



[Dealfeng](#) has successfully completed their 24m x 4m flettner rotor on shore, a major breakthrough in Dealfeng rotor technology, and also represents a large step forward in wind-assisted technology for China. By installing these rotors, ships can achieve a 5%-20% saving in fuel consumption. Dealfeng has specialized in R&D and manufacturing of marine energy-saving equipment for vessels for many years, and the rotor systems has received LR AiP certification.

Currently, Dealfeng is actively seeking partners for a Joint Development Project for installation and testing of the 24m rotor on a vessel.

## Zéphyr & Borée (France)



[Zéphyr & Borée](#) has been awarded Approval in Principle (AiP) by [Bureau Veritas](#) for its first wind-assist open-top 185m, 1,800 TEU containership. Propulsion means are compliant with IMO's Tier III requirements, and the vessel is equipped with shaft generators and a heat recovery system to minimize fuel consumption. The vessel's propulsion system will be assisted by eight sails provided by [Computed Wing Sails \(CWS\)](#).

## Trans Oceanic Wind Transport (TOWT) (France)



[Trans Oceanic Wind Transport \(TOWT\)](#) has secured a large number of transport orders from companies such as Cémoi (cocoa), Belco (coffee), Ethic Drinks (wine), Longuetau (wine), Drappier (champagne), Boisson Delame (wine) and Molienda Real (raw sugar). and their four proposed 80m vessels will operating as early as the end of 2022. The annual transport capacity will be in the region of 25,000 tonnes and this announcement outlines the routes (Europe-North/south America, Middle East & Africa) on which the vessels will be operating. There will also be space for 250 passengers per year to travel with the ships and of course TOWT has plans to grow further. [Read more...](#)

## Micronesian Centre for Sustainable Transport (MCST)



The Micronesian Centre for Sustainable Transport (MCST) [Project Cerulean](#) is progressing with China Navigation aiming to announce the signing of a newbuild contract for the first sail-assist pilot vessel shortly. The project is seeking to build the first low-carbon, low-cost sail-assisted inter-island cargo vessel to serve communities in the Pacific that lack cargo handling infrastructure for delivery in 2022. [Read More...](#)

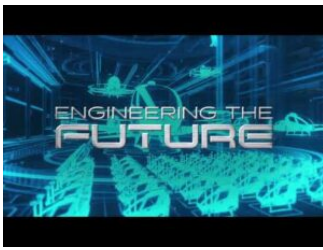
## Also in the News...



**A Historic Moment** - the two largest wind-assist vessels in the world meet off the coast of South Africa for the first time. The newly launched VLOC bulk carrier Sea Zhoushan chartered by Vale with five rotor sails in operation and the VLCC tanker, New Vitality operated by China Merchants Energy Shipping Co., Ltd. (CMES) and fitted with two retractable rigid sails.



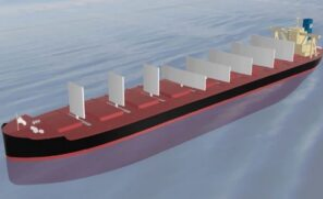
[ABS](#), [Wärtsilä](#) and [Hudong-Zhonghua Shipbuilding \(HZS\)](#) have partnered up to develop a flexible, future-proof, and modular LNG Carrier (LNGC) vessel concept that features a significant wind propulsion element. [Read more...](#)



**Engineering the Future – Maritime Documentary** – Wind Propulsion in Shipping features heavily in this episode from the excellent series. Released on Curiosity Stream in April & HBO in May with over 65 million subscribers between them. This documentary featured systems already installed on vessels showing what is being done today. We hope that the next series will have room for the many additional exciting tech/projects coming through the pipeline too. Now available on [Youtube](#)



[Cape Horn Engineering Ltd.](#) and [EcoClipper](#) have partnered up to push the Ecoclipper 500 vessel design work to the next level. Extensive CFD simulations for 4 different candidate hulls were performed and compared at different sailing conditions to aid the design process. [Read More...](#)



**Namura Shipbuilding** in Japan (in a joint project with operator NS United Kaiun) has announced that it is developed a concept for wind-assisted propulsion to be installed on bulk carriers. [Read More...](#)



**Wind Motion 120 AFS:** The most efficient passive wing (non-motor assisted) has an Asymmetric profile, with adjustable Flap and Slat (AFS) This project investigates the feasibility for ships to optimally operate such wings, for 100% wind propulsion target. More details here: [Mathis Rühl Naval Architecture](#)



**Northern Lights:** Shell's joint venture with energy majors Equinor and TotalEnergies, has placed an order for two, 130m long LNG-powered, wind-assisted CO2 carriers, with a 7,500m3 capacity at China's Dalian Shipbuilding Industry Co. (DSIC) to be delivered in mid-2024. [Read more...](#)



**Fosen Shipyard** in Emden has signed construction contracts for six 88-metre-long mini-bulkers for use in Europe and will be particularly low-emission, including wind-assist systems. The construction of the ships is planned from Q2 2022, with all vessels delivered in 2023 (more details to be released shortly)

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### 3. New Members & Registered Supporters

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We are delighted to welcome the following 20 new members to IWSA.

#### Full Members



**Michelin** (France): The Wing Sail Mobility (WISAMO) project is an automated, telescopic, inflatable wing sail system that can be fitted on both merchant ships and pleasure craft. A collaboration between Michelin R&D and two Swiss inventors [Press Release](#)



**Yara Marine Technologies** (Norway): Since 2010, a frontrunner in the emission reduction industry and providing a portfolio of green technologies, in order to ensure a healthy planet for future generations. [Press Release](#)



**Bluewater Engineering** (UK): Contributing highly impactful carbon reduction technologies. The Skytug project is the current sole focus, aiming to bring significant primary wind propulsion to the whole trans-oceanic shipping sector.



**D-ICE Engineering** (France): Based in Nantes and Paris focusing on scientific challenges about hydrodynamics, optimization, control and data science. Highly motivated team developing solutions for decarbonizing the shipping industry and producing clean energy.



**Wind Support NYC** (US): Founded in January 2021 to promote and support projects utilizing sail and wind propulsion to reduce fuel consumption for a greener commercial shipping and maritime public transportation.



**Grain de Sail** (France): Completed at the end of 2020, a 80ft schooner-type cargo sailboat with a payload capacity of 50 tons and a state-of-the-art climate and stability-controlled hull for the goods. Route from St Malo, France – NYC – Dominican Republic – France.



**Dealfeng New Energy Technology** (China): Focus on marine energy saving and emission reduction products. Dealfeng has developed Flettner rotor sails – 1m×3m on the 100T test ship and 4m×24m on ground. [10%-20% fuel reduction].

#### Associate Members



**Zéphyr & Borée** (France): Combines wind energy and cutting-edge innovation to design modern sail cargo ships and promote eco-friendly transport. Low emission engine and a new type of wind propeller: articulated «wing-sails».



**Vesconite Bearing** (South Africa): A world leading manufacturer of advanced grease-free, low friction bearing materials for bushings & wear components in commercial & recreational marine applications, pump bearings & low maintenance renewable energy applications.



**Azolla** (Singapore): New shipping consultancy interested in wind propulsion technology and vessel installation opportunities in the world fleet.



**Vaisala** (Finland): A global leader in weather, environmental, and industrial measurements with 85 years of experience with wide range of innovative observation and measurement products and services. [Blog: The winds of change are blowing in shipping markets](#)





**Blue Schooner Company** (France): Dedicated to sailing and selling selected cargo across the globe. Only transporting and importing goods that cannot be produced locally (quality, produced ethically & ecologically with a complete transparency on their origin and delivery.)



**GT Green Technologies Ltd** (UK): Wind propulsion experts offering independent consultancy services on wind propulsion installations. Guiding clients through the decision-making processes involved in entering and investing in the wind propulsion market.



**Pacific Green Technologies Group** (UK): The Pacific Green Technologies Group is becoming a world leader at providing sustainable cleantech solutions to help solve climate warming, green energy and resource scarcity challenges.

### Registered Supporters



Seven Ocean Research Ltd

**Seven Ocean Research** (Australia): Provides independent advice to the maritime industry using science-based approaches to bridge science with policy. All research is peer reviewed.



**Beyond the Sea** (France): Created by Yves Parlier in 2014, a company specializing in the towing of ships by kite. Efficient, universal & essential kite traction for all vessels.



**Prospect Law** (UK): An energy specialist firm which has built a leading reputation for work in the renewable energy sector.



**Hexcel Corporation** (UK): advanced material solutions for wind energy and high-performance marine applications available for use in WASP programmes.



**Nantes Saint-Nazaire Développement** (France): An international & economic development agency. Hosts a driven ecosystem developing wind propulsion & Wind for Goods Expo.

**Individual Registered  
Supporter**

**Satchel Douglas, Naval Architect (USA)**

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## 4. Other News & Policy Developments

### Wind Propulsion Innovation Awards 2021

**Congratulations to all of the shortlisted projects and the winners of the Wind Propulsion Innovation Awards 2021.**

The award ceremony was held following the key transport day at the COP26 on 11 November and kindly hosted as part of the MALIN Spotlight series. The aim of the awards was to underscore the importance of positive, maritime decarbonisation projects and messages. While there were winners of each of seven categories from innovation, technology user, projects and small vessel awards through to two research categories and one for outstanding contribution to the sector, it is wind propulsion itself that is the winner and we thank the shortlist panel of judges, many from leading industry stakeholders, that were given the difficult task of whittling down the 84 entries to only the 39 shortlisted. Altogether these have received over 40,000 votes over a two period – thank you to all who voted: <https://www.wind-ship.org/en/wind-propulsion-innovation-awards-2021/>





**Wind Propulsion Innovation**  
(sponsored by ABS)  
Presented to developers of innovative technology and installations.

**Winner:** Anemoi Marine Technologies & Tufton Investment Management Ltd for the installation of rotor sails on Tufton's TR Lady with the system to be installed on a rail system to allow cargo operations on the bulk carrier to continue uninterrupted.



**Wind Propulsion Technology User**  
(sponsored by Thordon Bearings)  
Presented to a company championing the use of wind propulsion through installing systems on their ships.

**Winner:** Vale SA for the five rotor sails installed on the MV Sea Zhoushan, VLOC (Very Large Ore Carrier) 325,000 dwt, which is currently the largest ship in the world to have WASP installed.



**Wind Propulsion Projects**  
(sponsored Wärtsilä Marine Power)  
Spotlighting innovative projects, tackling barriers, or developing new hybrid systems.

**Winner:** Oceanbird project, a 7,000-unit primary wind propulsion car carrier with up to 90% reduced emissions, Now, JV Wallenius Marine & Alfa Laval named AlfaWall & Wallenius Wilhelmsen has announced intent to order a car-carrier called Orcelle Wind (delivery by 2025)



**Small Vessel**  
(sponsored by MARIN)  
. Vessels & technology for small vessels; traditional. sail cargo, fisheries, small inter-island ferries etc

**Winner:** Advanced Wing Systems which has developed a flat panel morphing, semi rigid wing sail system which has tried and tested high aerodynamic performance system & which is reportedly robust and cost effective for various rig configurations and can be automated



**Completed Research**  
(sponsored by Royal Institution of Naval Architects (RINA), Kühne Logistics University: Hapag-Lloyd Center for Shipping & Global Logistics (CSGL), Dealfeng New Energy Technology & eConowind)

**Winner:** CE Delft & team behind the EU commissioned report, 'Study on the Analysis of Market Potentials & Market Barriers for Wind Propulsion [IWSA Members Vote]



**Proposed Research**  
(sponsored by Green Marine, Norsepower & Yara Marine Technologies)

**Winner:** Martina Reche Vilanova and North Technology Group for an upcoming research project which will focus on the modelling, design, and cost optimization across a wide number of wind propulsion systems. [IWSA Members Vote]



**Outstanding Contribution to the Wind Propulsion Sector**

**Winner:** Diane Gilpin, CEO of Smart Green Shipping for her long-standing commitment to wind propulsion and continued advocacy work for the overall technology segment. [IWSA Members Vote]

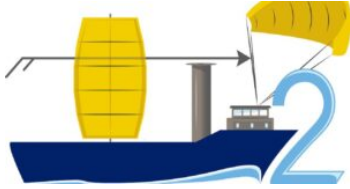


More details of all of the shortlisted projects and submission videos, sponsors and shortlist judges can be found at <https://www.wind-ship.org/en/wind-propulsion-innovation-awards-2021/>



## Release of the Wind Propulsion Strategy Workshop Report

40+ leading experts and industry stakeholders came together to assess the progress made over the last five years of wind propulsion developments for large scale commercial vessels. A key focus on barriers and challenges identified in the 2016 EU commissioned Wind Propulsion study and the work that still needs to be done in the technical, business and policy areas: Download (7-page pdf) [Wind Propulsion Strategy Workshop : Summary](#)



## WiSP2 Project Launched

[WiSP phase 2](#) was launched under co-ordination by MARIN and co-initiator ABS for another project with a duration of 2 years. This follows the earlier successful WiSP1 project, which, despite its modest size, was used as one of the main inputs for the recent updates to the EEDI/EEXI methods for wind propulsion.

WiSP2 continues on the WiSP1 legacy with the following objectives:

- Extended & improved knowledge base for performance prediction
- Investigation of prediction methods and compliance to common manoeuvring and seakeeping criteria with substantial wind propulsion
- Proposals for improved standards and rules & regulations for (modest) wind assistance and new ones for wind as main propulsion on performance and potentially other topics as following from investigations

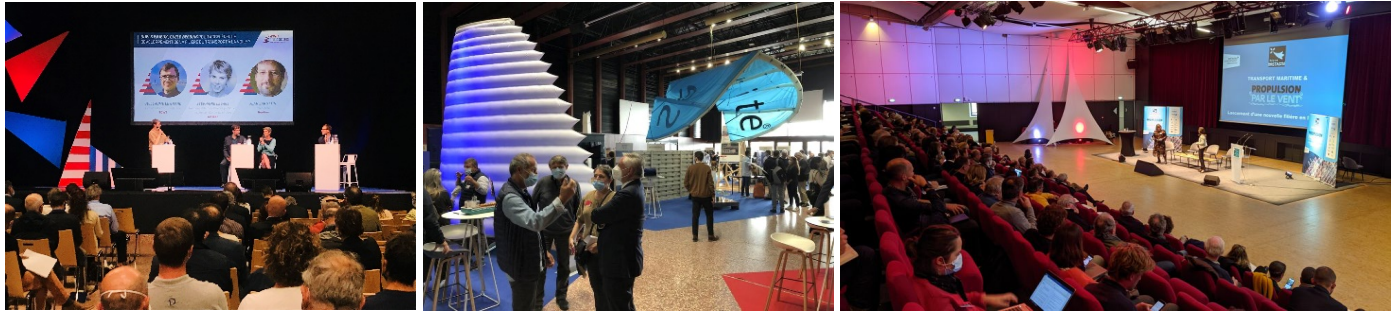
These objectives were defined to support the more broad ambition of WiSP2 to reduce the uncertainty and cost for a more broad introduction of wind propulsion in shipping. The work includes detailed sensitivity studies on modelling accuracy for about 4 to 5 design cases. The modelling is extended compared to WiSP1 with wind used as main propulsion, routing, new wind propulsion device types, and alternative propeller drive configurations. Also, validation is part of the scope. On modelling, also new time domain simulations will be compared to previously conducted scale model tests in the WindLab project. Software will be delivered for wind assistance to participants. Proposals will be made for updates and new standards, rules and regulations based on questionnaires and the preceding modelling. This includes follow up on the first update of EEDI/EEXI making that standard more accurate where necessary and simplified where possible. WiSP2 is also planning new proposals for wind as main propulsion, as well as other rules and regulations where deemed necessary based on the WiSP2 investigations.

This extended scope compared to WiSP1 was made possible because of the larger number of participants, for which we are thankful. New participants are still welcome, allowing an extension of the scope.



## IWSA Regional Hubs & Centres of Excellence

The development of IWSA regional hubs will be taking a higher priority in 2022 as the association aims to both expand geographically but also create a framework for cooperation and coordination in these regions. We will be holding regular bi-monthly hub coordination and development meetings from this year. Contact details can be found in the slide here or you can contact [admin@wind-ship.org](mailto:admin@wind-ship.org) for more information



**IWSA Europe-Atlantic Hub News:** In France, the association Wind Ship has been busy these last months with the organisation of 2 events dedicated to wind propulsion. The first one took place in Saint Nazaire on the 21st of September. It was the first national event dedicated to wind-powered maritime transport. Wind for goods was the chance to discover solutions and innovations that contribute to the decarbonisation of freight transport, and to discuss the key challenges of this sector which aims to preserve the environment. The majority of French projects have been gathered as well as shipowners, cargo owners, institutions and government ([Watch here](#)) The second one took place on Lorient on 10th of November and was focussed on the Brittany ecosystem. Brittany Region held a survey to better know the wind propulsion sector and unveiled the results during an interesting session. Several testimonies and two panels highlighted the assets of the Breton value chain, but also identified its limits, in order to reflect on the synergies to be put in place to ensure the proper development of this booming sector. ([Watch here](#))

Besides, Wind Ship is on the verge of publishing a white paper on Wind propulsion to get the interest of the maritime sector and people who decide in France. Moreover, Wind Ship participated in numerous local, national and international events, often with IWSA, and gave information to media, newspapers, radio and TV. A French website has been launched to relay IWSA information and newsletters are (more or less) regularly released to give public information on the development of the sector. New members have joined Wind Ship such as ECO TRANS OCEAN, MICHELIN, TOWT, MAXSEA, SYROCO as well as some individuals.

In October, Wind Ship launched a 2-year program to develop wind propulsion training reference for seafarers, in a consortium with French Maritime College (ENSM) and D-ICE Engineering. The first phase is dedicated to get feedback from experienced WASP, so any interested shipowner of seafarer is invited to get in touch with us to participate in the work. The aim is to provide a short training course to reassure all stakeholders and help remove this barrier to the deployment of wind propulsion. As a result, Wind ship has an increasingly legitimate place in official consultations, among the traditional stakeholders and contributors to maritime-related decisions. [Newsletter Wind Ship](#)

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## WASP (Wind Assisted Ship Propulsion) project Update

Along with the two final ship installations on the newly built MV Annika Braren (Rord

Braren) and the MV Tharsis (Tharsis River & Sea) the project has continued with performance evaluations and business model analysis. WASP held a general meeting in Denmark in early December to discuss progress and plot the next 12 months of activities. In June, the project released: **Socio-Economic Impacts of Wind Propulsion Technologies**: a policy brief directed at IMO and EU representatives and focused primarily on the positive impacts that wind propulsion systems can have on emissions, fuel use and health impacts [Download](#)



As part of the WASP Project seminar series, Craig Eason, editor of Fathom media moderated an Engineering panel with Johan Boomsma, CEO, Boomsma Shipping (the shipowner), Frank Nieuwenhuis, CEO, eConowind (the tech provider) & Prof. Joshua Lacey, KU Leuven Faculty of Engineering Technology (the third-party expert). [Watch Here](#)



**WASP July 2021 Newsletter:**  
[Read online](#)  
[Download PDF](#)



## Wind Propulsion 2021 Conference

We were delighted to eventually be able to hold the Wind Propulsion 2021 Conference in September this year, in collaboration with and hosted by the Royal Institution of Naval Architects at their London Headquarters. RINA is committed to the promotion of Wind Propulsion and continues to support IWSA activities. A thank you also goes out to the event sponsors; Yara Marine Technologies. The hybrid conference featured 15 high quality technical presentation papers spread over two days and welcomed 60+ attendees, with roughly a half of those joining us in person. [Program](#) // [Abstracts](#) If you would like to purchase a copy of the conference papers, please contact RINA directly at: [publications@rina.org.uk](mailto:publications@rina.org.uk)



## Reduced Harbour Fees for Wind Propulsion Vessels

Update from Port of Vancouver that they have recently added wind-assist technologies to their [EcoAction Program](#). They now specifically call out “Cleaner fuels and technologies” and have examples of natural gas, bio/renewable fuels, wind assist, solar as being able to apply for a discount under the EcoAction Program, an opportunity to reduce Harbour fees up to 47%. They would love to be welcoming more wind-assisted, innovative vessels at the Port of Vancouver.



## Wind for Goods 2: International 2023

Nantes Saint-Nazaire Développement organized their first national event dedicated to wind-powered maritime transport, called [Wind for Goods](#) in September 2021. This was a chance to discover solutions and innovations that contribute to the decarbonisation of freight transport, and to discuss the key challenges of this sector. With more than 30 exhibitors and 500 visitors, this event was a huge success. They are now looking to produce a second international event, in partnership with IWSA in June 2023.



## IWSA: Annual General Meeting 2021

We held an interim IWSA General Meeting on 15 Dec and once again this was an online event. We had a good attendance with c.40% of our full and associate members able to join us on the day, and all members received the recorded version. Key priorities; policy, hub development, program delivery and the Wind Propulsion Accelerator program were all high on the discussion list. A positive meeting to conclude year one of the ‘Decade of Wind Propulsion’. More details: [secretary@wind-ship.org](mailto:secretary@wind-ship.org)





## Call for Contributions for Blueweek 2022

The independent and 100% sustainable forum covering waterborne transport, ocean energy and maritime infrastructures.

Present and share your projects, get inspired to challenge climate change in the seminars on: Natural Propulsion (wind, solar and waves to power Ships) // Zero emission (sustainable alternative power for Ships) // Ocean Energy (making smart use of the ocean to power our future) // Blue Life (preserve our life on the blue planet) Rotterdam, 13-17 June. More information: [www.blueforum.org](http://www.blueforum.org)



## Recent Publication: Hydrodynamic testing of wind-assisted cargo ships using a cyber–physical method

SINTEF Ocean reports the first free-running hydrodynamic test of a wind-assisted cargo ship with highly-controlled wind loads. The wind loads were computed from lift and drag coefficients obtained from prior CFD analyses, combined with a non-uniform and non-steady incoming wind field, and accounted for instantaneous ship motions. The resulting loads were applied on the ship with high precision and repeatability by a cable robot. The paper presents the method in details, followed by a case study on an open bulk carrier geometry, equipped with four rotor sails running at constant rotational speed. This method is then expected to become a key element in the toolbox of designers and researchers, as radically new concepts of hulls,

centboards, daggerboards, rudders, and propulsion systems are currently being proposed to exploit optimally wind assistance. The present approach enables a holistic validation of the performance of these new designs, with a focus on hydrodynamic aspects. Furthermore, this approach enables rapid comparative assessments of various sail types, arrangements, or sail reefing/control strategies, and enables investigating course stability under sails, loss of maneuvering capabilities under sails, beneficial effect of sails to damp motions in waves, and consequence on added resistance in waves. Available: Ocean Engineering Vol 243, 1 Jan 2022 [Read more...](#)



## Obituary : Farewell to Wind Propulsion Visionary, Mr. Aloys Wobben, founder of Enercon and father of the E-ship 1

IWSA members were very sad to hear about the passing of Mr. Aloys Wobben, 69, after a long illness. His vision for a new build wind-hybrid cargo vessel with four Enercon-designed Flettner rotors was launched in 2010 and has been in operation since saving c.20% of fuel. His vision was encapsulated in the choice of name, E-ship 1, the first of a fleet of vessels that unfortunately wasn't replicated at the time, but

which helped inspire a new industry and all of us at IWSA. We hope that we will be able to deliver on a wind powered fleet during this decade of wind propulsion, and that will form a small part of Mr Wobben's legacy. Our condolences to the Wobben family and to the Enercon team and E-ship 1 crew.



## Reminder – Decade of Wind Propulsion Campaign

The International Windship Association and our 150+ members have declared the period 2021-2030 as the “Decade of Wind Propulsion”, a decade of **delivering** wind propulsion installations, **optimising** the technology solutions and helping to **facilitate** a quicker, deeper and ultimately cheaper transition to a fully decarbonised fleet. Campaign Website: [www.decadeofwindpropulsion.org](http://www.decadeofwindpropulsion.org) [Press Release \(PDF\) – Driving the Decade of Wind Propulsion](#)

## Policy Developments



### MEPC 77 Adopts New EEDI/EEXI Guidance for Wind

MEPC adopted the updated and improved guide *Guidance on Treatment of Innovative Energy Efficiency Technologies for Calculation and Verification of the Attained EEDI and EEXI*. The Committee approved MEPC.1/Circular 896 providing updated

guidance to manufacturers, shipbuilders, shipowners and other verifying parties relating to the application of EEDI and EEXI methodologies to innovative energy efficiency technologies. The circular provides a method of categorization for different energy efficiency technologies, including a significant update for wind-assisted propulsion systems. While this guidance update is significant this is a living document and measures will be reviewed as their impact is further assessed and additional reference vessel data becomes available. Other news from MEPC 77 included: no change to the current ambition level for IMO2050, *Carbon Levy* discussions have restarted and there is a growing understanding that this is either desirable or inevitable. The industry backed IMRB/IMRF R&D fund of \$2/ton fuel (\$500mill/yr) was deferred again and of course continued work in underway to implement the EEXI/CII proposals.



### COP26 & Maritime Announcements

While many were disappointed with the lack of concrete action and higher ambition in general in the face of the climate crisis, there was quite a bit of movement in the maritime world. This progress included a general call to bring down (and ultimately eliminate) fossil fuel subsidies and this was further compounded by the **Global Methane Pledge**: well to wake 30% reduction for LNG by 2030 [100 countries]. There was the **Call to Action for Shipping Decarbonisation**: which called for IMO to adopt Zero CO2 by 2050 [200 corps] which has added quite a bit of pressure on IMO to deliver higher ambition goals. This message was taken further industries and nations not prepared to wait for regulators by

the **Declaration on Zero Emission Shipping by 2050** [14 countries], the **Clydebank Declaration**: forming green corridors between ports [20+ countries] and the **First Movers Coalition**, which saw low emissions purchasing commitments [US & WEF + 30 large corps]. In addition, the lead up to COP26 saw the development of the **Glasgow Financial Alliance for Net-Zero (GFANZ)** - transitioning to net-zero portfolios by 2050 - \$130trn+ in assets under management. [with 450 firms from 45 nations = 40% of total finance committing by COP26]. One further announcement was for the establishment of the **Transition Maritime Task Force** [Just Transition] to ensure decarbonisation also benefits seafarers.

These are of course declarations of intent and will require concerted action and delivery, but a decarbonisation framework (along with progress at IMO, EU levels and existing industry initiatives) is starting to take shape.



### IRENA Coalition for Action – Renewable Energy & Employment

IWSA were signatories to the International Renewable Energy Agency (IRENA) Call For Action at COP26. The International Windship Association and 130 other leading Renewable Energy bodies represented at COP26 and part of the IRENA [Coalition for Action](#), are calling for “Immediate Actions to Accelerate Renewable Energy Jobs.” COP26 delegates should embrace the urgent and large-scale scaling of

renewable energy, as it brings huge potential for growth in quality employment and can help deliver a just and inclusive energy transition. Our Secretary General is quoted here saying “There is huge potential for sustainable, quality employment in the renewable energy sector. This includes the transition towards direct wind propulsion in the shipping sector that will generate hundreds of thousands of direct and indirect jobs adding to those in the zero-emissions fuel sector – it is vital that we have a just and inclusive energy transition – we call that a Win-Win-Wind situation.” [Call to Action COP26 Press release](#)



### IWSA Receives Interim IMO Consultative Status

We have been granted interim IMO Consultative Status as a technical organisation by the 40 member IMO council in November and we are awaiting formal confirmation of that status from the IMO General Assembly that held proceedings last week



## European Sustainable Shipping Forum: Ship Energy Efficiency

IWSA has joined the EU DG Move ESSF sub-group on Ship Energy Efficiency measures, bringing a clear wind propulsion voice to the proceedings. We really appreciated the warm welcome from the existing group members at the first meetings we have attended since September and the detailed deliberations on wind propulsion and the many other areas of development in this subject area. We look forward to continuing working with esteemed colleagues at DG Move & industry representatives.



## FuelEU Maritime Proposal

We are pleased to see that the FuelEU Maritime proposal includes provisions for wind propulsion and this was also precluded by the inclusion of Wind Propulsion in European Parliament resolution of 27 April 2021 on technical and operational measures for more efficient and cleaner maritime transport (2019/2193(INI)) Section 21 in particular: The European Parliament...Calls on the Commission, shipowners and ship-operators to ensure the implementation of all available

*operational and technical measures to achieve energy efficiency, in particular speed optimisation, including slow steaming where appropriate, innovation in hydrodynamics optimisation of navigable routes, the introduction of new propulsion methods, such as **wind-assist technologies**, vessel optimisation and better optimisation within the maritime logistics chain.* There is increased awareness among EU stakeholders and policy makers of the significance and immediate emissions benefits to be gained from wind propulsion. FuelEU Maritime proposal: [Read Full Text](#)



## Wind Propulsion Multi Stakeholder Working Group

In Q1/Q2 2022, IWSA will be launching a permanent working group focused on the policy, regulatory, legal and decarbonisation pathway developments from a wind propulsion perspective. [This will also include other operational, finance and technology issues too.] The multi-stakeholder group will include c.30 representatives from across the industry and the work will feed into international, regional and national bodies involved with delivering a decarbonised shipping fleet. For more information contact: Gavin Allwright [secretary@wind-ship.org](mailto:secretary@wind-ship.org)

## Reminder - Open Letter: Level Playing Field Needed in Shipping Decarbonisation

Over 90 maritime corporations, shipowners, designers and technology providers all involved with wind propulsion have come together to release this open letter, calling for all maritime industry decision-makers and the entire shipping community to fully assess and utilise all available power solutions that deliver the necessary deep, swift cuts in carbon emissions over the next decade commensurate with responding to the climate emergency. To that end, readily available and proven wind propulsion solutions must be integrated at the very heart of decarbonisation deliberations, which is currently not the case. We have received a good response from policy makers and we are moving forward with establishing a working group. [Chinese](#) // [Dutch](#) // [English](#) // [French](#) // [German](#) // [Italian](#) // [Japanese](#) // [Korean](#) // [Spanish](#)





## Classification Society Guidelines

There are an increasing number of publicly released guidelines and links to specific wind-propulsion classification documents:

**Bureau Veritas Guidelines:** [Download](#)

**ClassNK Guidelines** are downloadable from [www.classnk.com](http://www.classnk.com)

**DNV-GL Guidelines:** [Download](#)

**ABS Guidelines:** [Download](#)

**Lloyds Register Guidelines:** <https://www.lr.org/en/rules-for-sail-assisted-ships/>  
<https://www.lr.org/en/guidance-notes-for-flettner-rotor-approval/>  
<https://www.lr.org/en/guidance-notes-for-masts-spars-and-standing-rigging/>

## Media - New Articles & Interviews

### Publications

**IWSA Newsletter Back Issues:** Download back issues of the IWSA public newsletter

[April 2021](#) // [October 2020](#) // [April 2020](#) // [December 2019](#) // [July 2019](#) // [February 2019](#) // [October 2018](#)

**IWSA Youtube Channel:** Launched in December 2020 – Listening to the Wind – Weekly Interview Series – soon to be expanded to members videos and other event and presentation recordings.



Wind Assisted Ship Propulsion (WASP) Newsletter – July 2021 [Read More...](#)

How shipping industry can go from global polluter to carbon neutral [Read more...](#)

RINA Magazine: Maritime fuel and other subsidies: wind up or wind up? [Read more](#)



Leaders Magazine Interview – IWSA Secretary General [Read more...](#)



New York Times Magazine: Can Massive Cargo Ships Use Wind to Go Green? [Read more....](#)



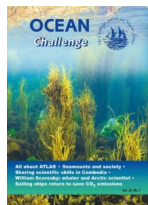
Ship.energy podcast – Interview with IWSA Secretary General. [Read More...](#)



**Asia Pacific Boating:** It's time to harness wind power for commercial shipping [Read more...](#)

**Seatrade Maritime:** ESG and carbon pricing to propel surge in wind power. [Read more...](#)

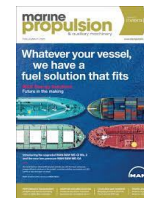
**UK Maritime Foundation Magazine:** The answer is blowin' in the wind [Read more...](#)



**Ocean Challenge:** Powering the shipping world by wind (p8-11) [Read more...](#)



**Driving the Decade of Wind Propulsion.** IWSA Spearheads a Coordinated Initiative to Accelerate Shipping Decarbonisation (Arabic) [Read more...](#)

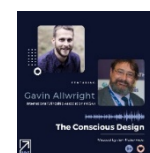


**Marine Propulsion & Auxiliary Machinery Magazine:** Wind propulsion developments (p13-17) [Read more...](#)



**TEDx Cowes talk** by IWSA Secretary General, Gavin Allwright [Watch here](#)

**EU SEArca Webinar – Maritime Transport: Going with the Wind:** Potential of Wind to contribute to EU Green Deal [Watch Here](#)



**Conscious Design Podcast - Interview** with IWSA Secretary General Gavin Allwright [Listen Here](#)

## 5. Education Program



**Enkhuizen Nautical College:** The college is launching its 2nd edition WASP course in February 2022. Last year, saw the first edition of the Wind Assisted Ship Propulsion Course, the first of its kind in Europe. The course is part of the senior year in the school, the so-called 'Grote Zeilvaart', where students are taught the theory of sailing large square-rigged vessels, together with exam subjects like astro-navigation and cargo handling and stowing of sailing vessels. The course can be followed online, which makes it possible for people other than our students to join.

**Course topics:** History & future of WASP // WASP vessel performance // Stability of Sailing & WASP vessels // Aerodynamics // Hydrodynamics & Manoeuvring // Shipbuilding WASP // Velocity prediction & weather routing

The course is 22 hours, divided over four days: Fri, Feb 11 // Sat Feb 12 // Fri, Feb 18 // Sat, Feb 19 More info and fees will be published at [www.ezs.nl](http://www.ezs.nl) Registration: <https://www.ezs.nl/online-application-wasp.html>



**Research: Tack to the future: how feasible is weather routing for wind-assisted ships?** A new fellowship conducted by Dr James Mason at [Tyndall Centre for Climate Change Research](#) will investigate the real-time feasibility of combining wind propulsion with weather routing to cut carbon in international shipping. Building on previous Tyndall Centre research that highlights

how weather routing can amplify savings from Flettner rotors by over 1.5 times, the new fellowship aims to understand how well savings translate when used in a real-time operational environment. The Tyndall Centre are looking for stakeholders to participate in the project to identify barriers and challenges that prevent sail manufacturers, operators, ship owners and others from adopting this measure. While participation will involve discussions and interviews, participants will also have direct access to the researchers focusing on the decarbonisation agenda within the Tyndall Centre, alongside early sight of the results. Over the last decade, the team at Tyndall have published world-leading research on low-carbon shipping and have been a key influence in driving the decarbonisation agenda. Any level of participation is welcomed. Contact: [Dr James Mason](#)

## 6. Key IWSA Programs 2021/22+

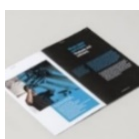
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**Wind Propulsion Accelerator Program:** Multi-stakeholder project including a technology incubator, test fleet and installation program giving all tech members access to funding, tech & business support, training & research opportunities + newbuild support. Interested to learn more [Contact](#)



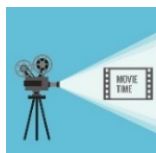
**Wind Propulsion Market Report:** 30-page report on developments in the market, technology information & other technical information. + Short – 2-page Briefing paper for policy makers. Sponsorship & Advert space available + inserts for pamphlets. [Contact](#)



**IWSA Brochure:** 36+ page colour brochure – feat. general wind propulsion info & IWSA activities + membership directory & advert space. Advert space is available (next revision Q2/Q3 2022) [Contact](#)



**Awards Program:** Technology Readiness Level (TRL) Award Program for wind propulsion tech providers will be launched as part of Accelerator program. Designated levels set by transparent 3rd party criteria + approved by expert panel. Also, small number of voting Awards: research & life time contributions to wind propulsion. *Interested in getting involved?* [Contact](#)



**Short Film:** Professionally produced 2-3 min film with the goal of introducing wind propulsion tech and developments to the logistics and shipping industry, but also to the general public. Include: need for change, wind propulsion can deliver, tech, barriers/drivers etc. *Interested in funding this?* [Contact](#)



**Webinar & Podcast Series:** Quarterly webinars: leading experts/panels discussing wind propulsion tech, latest research, market, policy, logistics etc.



**Small Vessel Publication:** A 50+ page pdf report on the small cargo sail vessel sector, available technologies, economic/business plans, routes & cargos. Small vessel project profiles, updates + expert input. Call for Papers Now - Sponsors & contributors – interested? [Contact](#)



**Industry & Policy Surveys:** Assessing the level of technical knowledge and sector development understanding for the wind propulsion segment in the shipping and wider logistics chain and among national, regional and international policy makers.



**Education Program:** IWSA secretariat and members engage with University, Maritime training centres and School programs whenever possible – seminars, lectures, & project visits + providing materials for the wider education network. Sponsors – interested? [Contact](#)

## 7. Upcoming Events

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NOTICE: due to the recent Covid 19 Pandemic developments many of the events may be held online/hybrid events. The events listed here are only the main events, there will be quite a number of additional IWSA, EU and third party webinars/events announced as Q1, 2022 progresses. Please keep an eye on the IWSA website/social media postings.

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Date	Event	IWSA Activity	Location
13 Jan	IRENA Assembly's Public-Private Dialogue Renewable energy and circular economy	Attend	Online
17 Jan	Coalition for Action 6th Annual Strategy Meeting	Attend	Online: 12pm – 4pm CET
27-28 Jan	World of Shipping, Portugal	IWSA Presentation	Online
February	WASP Webinar - 3	(Supported by WASP)	Online (tbc)
March	Green Ship Technology Conference	Official Supporting Organisation - Panel discussion + IWSA Presentation	Copenhagen, Denmark
March	IMO Intersessional Working Group – GHG 11	Attend	Online
29-31 Mar	CMA Shipping Conference	Attend/Presentation (?)	Connecticut, USA
4-7 Apr	Norshipping 2022	Attend/Panel Discussion	Oslo, Norway
19-20 May	EU Maritime Day	Proposed Wind Propulsion Workshop	Ravenna, Italy
6-10 Jun	Posidonia	Attend	Athens, Greece
6-12 Jun	IMO MEPC 78	Attend	Online (?)
08-10 Jun	Green Tech 2022 - Green Marine	IWSA Presentation	Montreal, Canada
13-17 Jun	Blueweek & Natural Propulsion Seminar	Host: MARIN, co-organised with IWSA + IWSA Members Meeting	Rotterdam, Netherlands

[IWSA News page](#) // [IWSA Events page](#) // [Decade of Wind Propulsion](#) // [Linkedin Page](#) // [Linkedin Group](#) // [Twitter](#)

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## 8: Membership & Membership Fee Structure

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IWSA welcomes all membership enquiries from companies/ individuals that support our objectives. The associate and supporter categories are open to all, while the Full member category is reserved for those heavily involved in the sector. For further details: contact Gavin Allwright [secretary@wind-ship.org](mailto:secretary@wind-ship.org)

**Annual Membership Fees (No VAT) – 01 September 2021 – 31 August 2022**

**Full Member** – Large (more than 250 employees) – €5,000

**Full Member** – SME (more than 10 employees) – €1,000

**Full Member** – Individual/micro organisation/NGO (up to 10 employees) – €400

**Associate Member** – Large (more than 250 employees) – €2,500

**Associate Member** – SME (more than 10 employees) – €500

**Associate Member** – Individual/micro organisation/NGO (up to 10 employees) – €300

**Registered Supporter** – Company – €100 (donation) // Individual/micro organisation/NGO – FREE + donation \*

\*NOTE: Supporter – No Charge – [Voluntary 'membership fee' to cover costs is welcome – €50 or donation]

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