Business challenges abound as the shipping industry and wider economy are buffeted by COVID 19, but I have been hugely encouraged by our members pushing ahead with their projects, the continued growth of industry interest in wind propulsion and a growing realisation among policymakers that they have a key technology segment ready for action that could remove up to 1/3 of fleet emissions by 2050. We have seen a surge of interest in IWSA, with 19 new members from across the industry and also recent announcements from big industry players such as Wartsila, Cargill, Michelin, Total etc. of their engagement. A clear sign of Progress!

One of the biggest recent shifts has been increased calls for carbon levies or taxes. A $2/ton fuel levy supported by ICS and key industry players, the EU vote to include shipping into the ETS scheme (currently €28/t of CO2 – c. €85-90/t of fuel) and most recently the major charterer Trafignera IMO proposal calling for US$250-300/t of CO2 – US$775-900/t of fuel). From an uptake of wind propulsion technology perspective, IWSA naturally supports all decarbonization efforts, especially internationally agreed ones, but we will engage with all initiatives and proposals on the table. However, we are especially gratified to see that these proposals are ‘ring-fenced’ in part or as a whole, i.e. returning the proceeds in way of innovation support, subsidizing installations and hopefully helping to soften the impact on developing countries and small shipping operators. We have supported this approach since our formation as a way to gain acceptance for carbon levies and to turbo charge the impact of any charges, while also not punishing operators and LDCs in the process.

Over the past 6 months we have been increasingly engaging with policymakers and decarbonization pathway developers with a focus on three key areas: (i) Decarbonization requires a ‘green propulsion’ mindset not just a ‘green fuel’ mindset, thus including wind propulsion at its core. (ii) View wind as a ‘propulsive energy provider’ not simply as an ‘energy efficiency’ measure, thus unlocking its full potential in combination with other operational and vessel changes (iii) Adopt the hybrid WAVE concept (Wind + Activity or operational optimisation + Vessel optimisation + Eco-fuels) as a critical decarbonisation pathway which is scalable today.

**WIND as** Facilitator for Eco-Fuels – lower demand, less storage space, less cost.

**WIND as** Ready for Installation Now

**WIND as** Free Energy Supplied at Point of Use

**WIND as** Autonomous - available worldwide without new infrastructure

The wind propulsion transition is underway with 12-14 large wind-assist ocean-going vessels in operation by the end of 2020 (Ferry to VLCC) + over 20 smaller cargo sail cargo vessels and cruise vessels also powered by the wind. A robust pipeline of technology and installations being announced, likely doubling that number of installations over the next 12 months and again by the end of 2022, even without additional commercial contracts orders during that period. The Change is in the Wind!

Gavin Allwright  (IWSA Secretary General)    secretary@wind-ship.org

**Newsletter Sections**

1. Secretary’s Message
2. Project Updates & Wind Propulsion Developments
3. New Members & Registered Supporters
4. Other News, Recent IWSA Activities & Articles
5. Key IWSA Programs for 2020-2021+
6. Upcoming Events - Notice
7. Recruitment and Training Courses
8. Membership & Membership Fee Structure
2. Project Updates & Wind Propulsion Developments

Norsepower (Finland)

A Norsepower Rotor Sail installation was completed on the Scandlines hybrid ferry MV Copenhagen this summer. The 169.5m long vessel (460 cars/96 truck/1,300 passengers capacity) services the crossing between Rostock and Gedser. The 30m x 5m Rotor Sail was fitted in Rostock overnight as the installation is part of the EU Interreg North Sea Region funded WASP project. It is predicted to reduce emissions by 4-5% percent (<20% in optimal wind conditions). The steel foundation (21t) for the Rotor Sail (42t) was added during an ordinary yard stay back in Nov 2019. Read more...

Agreement to install two of Norsepower’s largest Rotor Sails (35m) that are also tiltable on board SEA-CARGOs SC Connector, a side door Ro-Ro in Q4, 2020. The agreement also heralds the installation of the world’s first tiltable Rotor Sail enabling them to tilt to almost horizontal when required. The SC Connector is a 12,251 GT Ro-Ro cargo vessel operating in the North Sea. This project will be the fifth vessel installed with Norsepower’s Rotor Sail with eight rotors of varying sizes in operation in the tanker, Ro-Ro, general cargo and ferry/cruise segments. Read more... Watch Video

At the end of June, Norsepower CEO Tuomas Riski joined representatives from Maersk Tankers, Shell and LR to discuss the Maersk Pelican LR2 product tanker with verified fuel savings of 8.2%. Watch Video

Airseas (France) & “K” LINES (Japan)

Airseas Seawing design has acquired preliminary approval from ClassNK. Kawasaki Kisen Kaisha, Ltd. (“K”LINE) President & CEO: Yukikazu Myochin and AIRSEAS President Vincent Bernatets announced that they have jointly obtained "Approval In Principle (AIP)" from Nippon Kaiji Kyokai (ClassNK) in line with ClassNK’s Wind Assisted Propulsion Systems guidelines for the design of the “Seawing” kite system. The kite system which assists vessel propulsion by harnessing natural wind power through its dynamic flight. A simple switch launches or recovers the kite which unfolds, operates and refolds autonomously. The “Seawing” system collects and analyses meteorological and oceanic data in real-time, then adapts its flight to this information in order to optimize its performance as well as to ensure maximum safety.

Obtaining the AIP marks the completion of the initial design related to the kite structure and controls and the team is now carrying out further detailed engineering, with the target of installation and operation on the first “K”LINE vessel. “K”LINE Press release CLASSNK Press Release
Anemoi Marine Technologies has announced installation of the world’s first “Wind Ready” vessel, Blue Planet Shipping’s m/v Axios. “Wind Ready” is a notation that describes a ship that has been prepared to be fitted with wind propulsion technology, such as Anemoi Rotor Sails.

Making the m/v Axios “Wind Ready” for up to 8 Rotor Sails included carrying out the ship structural and electrical integration for the foundations, rail deployment, cabling and associated outfitting. This nature of work requires lower investment from shipowners and stakeholders, while future-proofing the ship and providing flexibility regarding decision making and CAPEX. Once complete, it is a simple turn-key operation to ‘lift’ the Rotors in place when the timing is right for the owner. This can be done in a matter of hours during a standard port visit. This turn-key approach extends to the wider fleet; owning or chartering numerous “Wind Ready” vessels makes it easy to deploy Rotor Sails from one vessel to another. Anemoi Rotor Sails have a design life of 25+ years and in the case of retrofits may outlive the installation vessel.

Anemoi and Wärtsilä have also announced a further significant move with the signing of a Memorandum of Understanding (MoU) tied to a License and Cooperation agreement for the future sales and servicing of Anemoi Rotor Sail solutions to the shipping industry. Read more...

Anemoi has also recently released video of their folding Rotor Sail and their UK test facility, allowing the Rotor to be lowered from vertical to horizontal in less than 10 minutes. Watch Video

Wallenius Marine (Sweden)

Wallenius Marine has unveiled their Oceanbird car carrier design. The vessel is under development in Sweden carried out by a group including the KTH Centre for Naval Architecture, SSPA and Wallenius Marine, with funding support from the Swedish govt through to 2022. The 200m long, 32,000t Oceanbird wind-powered car carrier (wPCC) can carry up to 7,000 vehicles, with retractable 80m high wings made of a blend of metal and composite which can be lowered in high winds. The vessel is designed for an average speed of 10knots under sail power alone and on favourable routes will reduce emissions by up to 90%. The estimated travel time across the Atlantic is 12 days, compared with about seven for fuel-powered car carriers. Shipping lines will be able to order a wPCC at the end of 2021 with the first operational vessel slated for 2024. Read more... Watch Video

Two Chalmers University of Technology students have also released their analysis of the project from a life cycle perspective when you compare with other fuels! The result shows that green investments and the economy can go hand in hand towards a more sustainable future. Download Thesis
BAR Technologies (UK)

BAR Technologies, Deltamarin and Cargill have jointly announced their collaboration to deliver wind-assisted tanker and bulker vessels starting in 2022 using BAR Technologies’ WindWings, large, solid wing sails that measure up to 45 meters in height. BAR Technologies has also developed its Ship System Efficiency Analysis Tool (ShipSEAT), that combines accurate simulation and interaction of complete hydrodynamic and ship propulsion systems with bespoke optimising multiple objective performance prediction and routing software.

BAR Technologies have utilised the ShipSEAT to design and optimise the WindWings. With solutions available for tankers and dry carriers. The WindWings system and ShipSEAT offer 30% + fuel savings (on average) on global routes. The number of wing sails can be tailored to the size of the vessel and the route it will take. Read more... Watch Video

Nayam Wings (Israel)

NAYAM WINGS has completed scientific and engineering calculations of their system which will reduce fuel consumption and emissions by 12% - 20%. NAYAM WINGS technology is utilizing aircraft wing with asymmetrical 3 element airfoil with high lift and low drag, and can reduce the ship's heeling induced by all wind propulsion systems."

It has now established a consortium of five companies for installing its wind propulsion system on a prototype ship in the second quarter of 2022. The consortium is composed of an aircraft wing manufacturer, a shipping company, a company expert in CFD analysis of hydrodynamics and aerodynamics and another company for design and manufacture the telescopic mast with multiaxial connection to the wing and to the deck. The consortium has applied for the EU Horizon 2020 program. NAYAM WINGS is also in negotiations with three potential investors but is still looking to expand those numbers and is also looking for additional ship owners interested to install its systems on their vessels. Read more...

The company has also been recruiting, including a new Co-CEO (a retired high ranking officer from the Israeli Navy) MBA and COO and BD (also another retired high ranking officer from the Israeli Navy) and industrial engineer.
Econowind (Netherlands)

Boomsma Shipping is preparing for installation of twin Econowind VentiFois on their M/V Frisian Sea, a 6400DWT MPP/General cargo vessel. The Econowind-units are both integrated in a specially designed Flatrack from which a folding VentiFoil can be deployed, these are ridged aspirated wing profiles acting as sails. The Flatrack is designed to optimize the handling of the VentiFois. Read More...

eConowind and Tharsis Sea-River Shipping have announced their agreement to install two of their 3x9m TwinFoil units on the 88m, 2,364 dwt diesel-electric general cargo vessel, MV Tharsis. The new installation will take place in February 2021 as part of the EU Interreg WASP project Read more...

Neoline (France)

NEOLINE In July, Groupe Beneteau entered into a framework Transatlantic transport contract with NEOLINE, to transport Beneteau boats and due to the garage height of 9.80m they will be able to transport their larger units of over 40ft. Read more...

Manitou Group has also signed the contract to transport all of their aerial work platforms and telehandlers manufactured in France for the North American market. There is a planned fortnightly transatlantic service between Nantes, Baltimore, Halifax and St-Pierre & Miquelon. Manitou exports around 1,000 machines to the US each year and will have a load capacity of 40 units per departure Read more...

Windship Technology (UK) & Cape Horn Engineering (UK)

Windship Technology has presented its Net Zero Solution with the rigs operating as an auxiliary power system. Each rig is a three-wing foil set of 35-45m in height, depending on the size of the ship, providing a significant thrust to propel the ship through the water. The Windship team has been working closely with Cape Horn Engineering, specialists in yacht and ship design, using CFD to optimise designs for critical elements such as weight saving, performance predictions, reducing emissions and design optimisation. Read more...
IWSA Small Vessel Publication (Call for Papers)
Bringing together a wealth of experience, best practice and insights into projects, the ships, tech, trade and business models that are making the sector grow. Expected length c.100-150 pg, available as pdf and print on demand. Not the definitive guide but a collection of essays/pieces updated every 12-18 months. Small vessel = nominally < 1,000 GRT. Call for Papers

Micronesian Center for Sustainable Transport (RMI & Fiji)
On 26th August 2020 - The Design Review Team of the Cerulean Project has been joined by VPLP, a French marine engineering firm, to provide the preliminary design and cost estimates for the Cerulean vessel design. The Business Case & Operational Plan has been delivered to Swire, and is now being finalized in accordance with requirements to prepare for the potential Phase Two activities. Read More... Contact: Andrew Irvin

Ecoclipper (Netherlands)
Half hull model prototype EcoClipper500– presented to EcoClipper B.V. founder Captain Jorne Langelaan, at the Maritiem Museum Rotterdam by the constructor, ship carpenter Leo Boogerd with Bert van Baar (bootbouwschool) and Cadhead’s Marijke de Jong. Constructing a half hull model used to be common practice in shipbuilding used for the design of the hull and considered the first step in the building process. Read more... Press Release

SAIL CARGO INC. (Costa Rica)
S/V Ceiba vessel building is progressing well - In August the team finished the stern deadwoods, the aftermost massive timbers that create the backbone portions of the Ceiba. There are 12 deadwoods in total, counting the stern post knee. The keelson has been bolted into place. Massive bolts hold the keelson, frames, and the keel together. Fastening the keelson included drilling & bolting 30 holes, one for every frame. Read more...

GO SAIL CARGO (Australia)
Three New Ships from Go Sail Cargo: The first is a version of our Clipper 100, designed for mass production. Essentially an early 20th C steel ketch with a finely tuned hull, electric auxiliaries and solar panels. Over three years we’ve worked on every single aspect of the ship. She’s now slightly bigger, carries more cargo and the topsails have been reinstated. Lithium batteries will power the engines but crew-powered block and tackles can still stand in for faulty winches. The same common-sense parameters are applied to the second ship, a new three masted schooner Read More... Contact Derek Ellard

Lo Entropy (Denmark)
Pleased to announce we have an investor in place for the initial funding of the liner service between Oostende and Ramsgate, due to operate from May’21. We continue to look for regular palletised cargo suppliers for the service. Skilled volunteer helpers are welcome in Denmark for the refit and interested to talk with sailing crew looking for full time employment. Read More... Contact Geoff

Timbercoast (Germany)
The cargo sailing vessel AVONTUUR has started its sixth voyage. The 100-year-old gaff schooner was a guest in Hamburg for refit work. Now the AVONTUUR under Capt. Bockermann is heading for the Atlantic Ocean again. The mission: to transport goods over sea without emissions. The first leg takes the ship: Bay of Biscay to Trapani in Sicily. On board: art and coffee. Newsletter
We are delighted to welcome the following new members to IWSA:

### Full Members

**“K” LINE** (Japan) Kawasaki Kisen Kaisha, Ltd. (“K” LINE): Japan-based integrated logistics company that operates 468 vessels, or nearly 40 million DWT.

**BAR Technologies** (UK): world leading naval architects & optimisation specialists, fluid dynamists, mechanical, structural/composite engineers & control strategy & system specialists.

**Wallenius Marine AB** (Sweden): Family owned company with 80 years+ experience that has designed and built over 70 vessels since mid-90’s with a strong focus on sustainable shipping.

**NAOS Ship and Boat Design** (Italy): Ship design company with specialization in Ro-Ro Ships & RoPax-Ferries. Est.1993, now heads a group of companies in Italy, Spain, Croatia & Sweden.

**Advanced Wing Systems** (Australia): Developer of SRW (Semi Rigid Wing) sail, a unique design using a pair of fully battened sails operating in unison to create a rigid aerofoil structure.

### Associate Members

**Liebherr Components AG** (Swiss): Offers solutions for a wide range of requirements, incl: gearboxes, slewing bearings, winches, generators, motors, freq. converters & hydraulics.

**D-ICE Engineering** (France): focusing on scientific challenges: hydrodynamics, optimization, control & data science. Developing solutions - decarbonizing shipping & producing clean energy.

**XP Sea** (France): Working with expert network, coordinating complex projects, solid experience and strong tech. knowledge. Now managing Grain de Sail design team for new sail cargo vessel

**Enkhuizen Nautical College** (Netherlands): Specializes in the training of sailors to become Officer or Captain on large sailing vessels including a new WASP-module to start in 2021.

### Registered Supporters

**Cape Horn Engineering Ltd** (UK): Industry leading CFD consultancy, specialising in design optimisation of commercial ships, renewables & racing yachts (America’s Cup/Volvo Ocean).


**Canard Wingsail** (UK): Developing a canard configuration wing that is bigger than ‘Zephyr’ wing sails already in use for large ships and smaller coastal & inland ships & boats.

**Berrens Maritime** (Netherlands): Provides consultancy, interim- and project management services in shipping, off shore and innovative sustainability projects.

**Times Up** (Austria): Creates imaginations of possible & preferable futures through workshops/events. Experiential futures; imaginations of a possible future as a physical space.

**Falls of Clyde** (UK): Returning the Falls of Clyde to the sea as a working ship – Cargo, training, campus, ocean clean up, etc.

### Individual Registered Supporters

**Derian Boer** (Research PhD Student, Johannes Gutenberg University Mainz, Germany)

Enric Julià Lluis (Gothenburg, Sweden)  
Dougal Anderson (Port Jackson, Australia)

Raffaele Frontera: C-Job Naval Architects (Netherlands)
Rescheduled: MEPC 75 – Wind Propulsion Submission
This submission was accepted for MEPC75 in January, submitted by the Comoros flag. Due to the pandemic, MEPC75 has been delayed until mid-November and we look forward to further discussion on wind propulsion. MEPC75 Inf.26 is available from IMO docs or here.

Sadly, our scheduled side event at MEPC 75 has been postponed as the meeting is now online, we hope that there will be an opportunity to hold that event at MEPC76 with French delegation support. IWSA has also submitted our application for IMO consultative status, and applications are being deferred until the following Council meeting next year. We continue our engagement with the MTCC network, supplying updated information to the regional centres. We have also delivered our updated Wind Propulsion Briefing sheet (Sep 2020) to both the MTCC teams and to Council members. Further technical submissions will be made at subsequent IMO MEPC sessions tackling remaining barriers and challenges to develop a level-playing field that fully values the substantial propulsion contribution delivered by wind propulsion solutions.

European Union
At the European Level, IWSA has stepped up its activities both through secretariat level engagement and also through WASP project activities. In Sep 2020, a Wind Propulsion Briefing sheet was distributed to all EU MEPs and national transport ministries (along with others worldwide) followed by policy discussions with shipping and emissions related teams. IWSA also contributed to the STEERER Group Strategic Research and Innovation Agenda (SRIA) for the co-programmed Partnership zero-emission waterborne transport (see below), IWSA and IWSA Europe – Atlantic hub, French Assoc. Wind Ship (APTMD-IWSA) also jointly submitted to the FuelEU Maritime Initiative on CO2 emissions from shipping – encouraging use of low-carbon fuels IWSA Submission

Wind Propulsion 2021 Conference (16-17 Feb 2021)
Call for Papers for the Wind Propulsion 2021 conference to be held at the Royal Institution of Naval Architects UK headquarters in association with IWSA. Download Wind Propulsion 2021 – CALL FOR PAPERS The deadline for abstracts was originally 02 Nov, now extended until 20 November.

For a list of the 2019 presentations, check the last conference programme: Wind Propulsion 2019 Programme If you are interested in sponsoring the event, then please contact RINA or IWSA directly to discuss that. Read More...

IWSA is really looking forward to another quality and impactful event in February.

International Renewable Energy Agency (IRENA) Coalition of Action
IWSA are now members of the IRENA Coalition for Action, with a vision for its members to work together to advance renewable energy (RE) in order to drive the global energy transition in line with the SDGs on energy. The Coalition forms a key international network to discuss and determine action on RE industry trends, share knowledge, and exchange best practices for the global energy transformation. The Coalition mission is to convene a global dialogue amongst nongovernmental and governmental stakeholders to develop actions to drive the energy transition forward by increasing the share of renewables in the global energy mix. We look forward to contributing our unique perspective on the drive to decarbonise through renewable energy development and the place that direct energy use has in the transformation of the shipping transport sector.
INNOV’SAIL 2020 (Gothenburg – Online 15-17 June)
IWSA teamed up with INNOV’SAIL 2020 organisers, Chalmers Univ. of Technology, to deliver an insightful series of papers and presentations on commercial wind propulsion. The first time for INNOV’SAIL to include commercial applications of WPT and it spurred much discussion around the synergies and wealth of experience in both segments. Video presentations

IWSA: Annual General Meeting 2020 (Online 28 May)
Many thanks to the over 30 IWSA members that joined us for the first online event. We had a very successful meeting, with a clear pathway forward for wind propulsion developments. There was a strong emphasis on further pushing the policy engagement and a keen eye kept on decarbonisation approaches across the industry. There was also general support for the scoping of the Wind Propulsion Accelerator, IWSA SG, Gavin Allwright stated: “The key message coming out of the market continues to be for the wind propulsion segment to deliver the projects & technology, conclude sea trials and get verified fuel saving results and we will invest.” adding; “...securing the place for wind propulsion in the maritime decarbonisation strategy going forward is of primary concern and we feel that the assoc. is well placed to bring about that change this year.”

8th Natural Propulsion Seminar (Online 28 May)
Held as part of MARIN’s annual Blueweek conference. This was also moved to an online event, however the high quality of presentations was maintained, and IWSA SG moderated the Q&A and discussion sessions and presented a broad outline of the Wind Propulsion Accelerator project. Presentation videos available online.

Wind Assist Ship Propulsion Project (WASP) – North Sea Region
The project, funded by Interreg North Sea Europe, part of the EU Regional Development Fund (ERDF) [€5.4 million, launched Oct 2019] has already delivered two retrofit installations, firstly a suction wing (ventifoil) on the MV Ankie (Van Dam Shipping) and a rotor sail system on the MV Copenhagen ferry (Scandlines). Additional shipping partners include Reederei Rörd Braren, Boomsma Shipping that will install a rotor and ventifoil variant respectively and new partner Tharsis Sea-River Shipping to install a wingsail. Project experts will be monitoring and evaluating operations and developing pathways and applications to tackle the regulatory and business-related issues. Partners: Chalmers University of Technology, Katholieke Universiteit Leuven, Kühne Logistics University, Green Transition Denmark, Nord University, SSPA, HHX.blue and supported by IWSA & Netherlands Maritime Technology Foundation. Read More...
Download recent report: New Wind Propulsion Technology - Literature Review of Recent Adoptions

STEERER (Structuring Towards Zero Emission Waterborne Transport)
The STEERER project has released its draft Strategic Research and Innovation Agenda (SRIA) for the co-programmed Partnership zero-emission waterborne transport. IWSA has contributed an update of the WPT basket, market, performance etc. and we are very pleased to see that WPT is held to play a key central role in the decarbonisation pathway for the EU. Feedback (the report from the open public consultation) and the revised draft SRIA, are now online. The SRIA will lay the foundations for the activities of STEERER.
Wind Propulsion Hub Update: Europe-Atlantic hub: Association Wind Ship

Association Wind Ship, French affiliate to IWSA, jointly organised a one-day event with Armateurs de France Oct 15, Paris, about wind propulsion for commercial shipping. Over 100 delegates were gathered over the day, both virtually and at the Armateurs de France premises, the French ship owner’s association.

The morning session was dedicated to policy makers and ship owners, to discuss potentials and challenges at stake for wind to decarbonize shipping industry. High level speeches were given by key stakeholders such as Geneviève Jean-van Rossum, Permanent Representative of France to the International Maritime Organization and Jimmy Pahun, French MP. The afternoon was dedicated to Wind Ship and Armateurs de France members, demonstrating technologies and the applicability to attending ship owners’ cases. This was the first event of its kind in France, not the last, to foster wind propulsion adoption within the industry.

Charity Event: US$23,000 Raised!! Emergency Funding for Developing World Seafarers campaign raised £16,455 ($20,000+) to assist developing world seafarers impacted by COVID 19 Read More... Proceeds went to the International Seafarers’ Welfare and Assistance Network (ISWAN). Supported by World Ocean Council, NAMEPA, The Nautical Institute & Green Marine. In July the ‘Row4Seafarers’ challenge by Gavin (IWSA SG) & family rowing the Atlantic on their rowing machine raised £2,167 ($2,800).

Crowd Funding Campaign: Homecoming Sail – The Drua i Vola Sigavou - Be a part of the great journey for the Drua i Vola Sigavou to return to its ancestral home in the Lau Islands! Drua i Vola Sigavou, which means The New Rising Star, is a replica of the last surviving traditional Fijian sailing canoe or drua. The Drua Experience social enterprise built their replica drua based on the 1913 Ratu Finau Drua that has been housed in the Fiji Museum for decades. The goal is to revive Fiji sailing culture & traditional canoe building through awareness raising and youth training while also opening up sustainable sea transport and shipping, directly supporting the mitigation of climate change in the Pacific. Support the Campaign

Crowd Funding Campaign: Canard Wingsail - The ‘Zephyr’ wing sail, already in use, is the datum (reference point) wing sail for the purpose of designing a canard wing sail. The Zephyr established spatial properties of height & deck radius. The canard fits into this space. The canard configuration has a bigger wing. The control surface, the canard, is a drive area. This results in an increase of 40% more drive compared to the datum Zephyr. It can be used on large and smaller coastal & inland ships & boats Support the R&D Stage

Publications

Classification Society Guidelines

Publicly released guidelines and links to specific wind-propulsion classification documents

ClassNK Guidelines downloadable from www.classnk.com
DNV-GL Guidelines: Download
ABS Guidelines: Download
LR Guidelines: Sail Assisted Ships  Flettner Rotor Guidance  Guidance for Masts, Spars & Standing Rigging
**Wind Propulsion Principles (1st Ed.):** Konstantinos Fakiolas, **FINOCEAN** (May 2020) - overview of WPT application on ships. One of the first industry books concentrating on themes: physical principles of WPT’s operation, influence of the winds & waves etc. Provides guidance to ship operators & designers on the factors to be considered in retrofit and newbuilding projects. Aims to stimulate industry interest, especially from those not actively involved in the research/tech development, and those not knowledgeable of WASP basics, while being as comprehensive and simple as possible. 2nd edition under development. Download free-of-charge.

**New Articles & Interviews:** A recent set of wind propulsion articles & interviews

**Wind Propulsion: A Breath of Fresh Air in the Delivery of Zero Emissions Vessels**

**Green is the New Black: ... reconsidering wind power.**

**Underwater sound generated by human activity - WPT as part of the Solution.**

**Wind Assisted Ship Propulsion (WASP) Newsletter**

**Out On The Pull: Making Wind Assistance Work**

**Interview with Nicolas Abiven, Chantiers de l’Atlantique**

**Go(ne)ing with the Wind: 40 ships to have WPT by the end of ‘22.**

**A Hard Wind: Interview with BAR Technologies, BlueWASP & Airseas**

**Back to the Future: Wind Power Could Cut Shipping’s CO2 Emissions**

**Wingsail Technology Uses Wind To Reduce Ships’ Emissions By 30%**

**Arronax Podcast- Wind One: Interview: IWSA & Blue Technology**

**Arronax Podcast- Wind Two: Interview: Econowind**

**Decarbonisation – whose risk is it?**

**Wind Above: What Goes On Below?**

**Sail Power Enjoy a Second Wind**

**A Low Carbon Future**

**The Power of Wind (Drydock Magazine)**

**Why Wind Works: Interview Airseas CEO**
5. Key IWSA Programs 2020-2021+

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


IWSA Brochure: 36+ page colour brochure – feat. general wind propulsion info & IWSA activities + membership directory & advert space. Advert space is now available (next pdf revision Feb 2021) 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. Launch in mid-November


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

6. Upcoming Events & Conferences

NOTICE: due to the Covid 19 Pandemic almost all events have either been cancelled or are being held online. We hope that the Wind Propulsion Conference, currently scheduled for 16-17 February 2021 will go ahead as scheduled. IWSA is also launching a weekly recorded video interview series from the middle of November and a bi-monthly webinar from December. These will be available for free on the soon to be launched IWSA youtube channel. IWSA secretariat will continue to participate in online forums and conferences, submission of advance questions and wind propulsion updates to webinar organisers.

We look forward to the resumption of face-to-face events later in 2021 and fingers crossed for our AGM in the Spring. For webinar, conference and interview releases please keep an eye on the IWSA website.
7. Recruitment & Training

**Enkhuizen Nautical College**: In 2021 starting a new module "Wind Assisted Ship Propulsion, modern developments in sailing ships". It will be part of the 'Grote Zeilvaart' (GZV) course running from Oct thru Mar, but also be a stand-alone course for those interested in learning about WPT. Course: *background in necessary fluid mechanics and maths *survey of presently available WPT (Kites, suction wings, rotors, wings, soft sails, etc.). *Practical considerations for WASP design and operation *interaction effects between WASP-systems, the main propulsion engine, course keeping and routing, and finally commercial operation. *Performance Prediction * Maritime Awareness

*Ship building * Ship stability. The module will be held in Jan, Feb and Mar 2021 on Saturdays. Exact dates and school fees TBC. The module will be completed with a Certificate of Attendance WASP technologies. [Read More...]

**Anemoi Marine Technologies**: Naval Architect (London/S’hampton) – to lead design of the integration of our Rotor Sails onto retrofit/new build ships. Candidate: MSc NA & 5-7yrs experience. Electrical & Controls Engineer (London/S’hampton) – to lead the electrical, control and software design. Candidate: a relevant degree and be working towards chartership. Previous experience of electro-mechanical design for marine systems and sound understanding of vessel systems is required. Email CVs [HR@anemoimarine.com](mailto:HR@anemoimarine.com)

**Airseas**: Do you want to contribute to the protection of our planet? Join our adventure as we are currently recruiting in 5 positions, such as flight control laws engineer, flexible wing design engineer or simulator and design tools developer! Find all the job offers [here](mailto:recrutement@airseas.com)

**AYRO**: 3 offers for engineering positions & 1 internship available:

- **System Engineer**, **Mechatronical Engineer**, **Mechanical Engineer**, **Digital Marketing Intern**

If you interested in working for the decarbonization of the maritime industry, email us at [hiring@ayro.fr](mailto:hiring@ayro.fr)

8: Membership & Membership Fee Structure

IWSA welcomes all enquiries from companies/individuals supporting our objectives. Associate member & registered supporter categories are open to all. Full membership is reserved for companies with wind propulsion technologies or heavily involved in the sector. Contact: Gavin Allwright [secretary@wind-ship.org](mailto:secretary@wind-ship.org)

**Annual Membership Fees** – 01 Sep 2020 – 31 Aug 2021

<table>
<thead>
<tr>
<th>Membership Type</th>
<th>Description</th>
<th>Fee</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Full Member</strong></td>
<td>Large (more than 250 employees)</td>
<td>€5,000</td>
</tr>
<tr>
<td><strong>Full Member</strong></td>
<td>SME (more than 10 employees)</td>
<td>€1,000</td>
</tr>
<tr>
<td><strong>Full Member</strong></td>
<td>Individual/micro organisation/NGO (up to 10 employees)</td>
<td>€400</td>
</tr>
<tr>
<td><strong>Associate Member</strong></td>
<td>Large (more than 250 employees)</td>
<td>€2,500</td>
</tr>
<tr>
<td><strong>Associate Member</strong></td>
<td>SME (more than 10 employees)</td>
<td>€500</td>
</tr>
<tr>
<td><strong>Associate Member</strong></td>
<td>Individuals/micro orgs/NGO (up to 10 employees)</td>
<td>€300</td>
</tr>
<tr>
<td><strong>Registered Supporter</strong></td>
<td>Company – donation</td>
<td>€100</td>
</tr>
<tr>
<td><strong>Registered Supporter</strong></td>
<td>Individual/micro organisation/NGO – FREE + donation</td>
<td><strong>Voluntary ‘membership fee’ is welcome: €50/donation</strong></td>
</tr>
</tbody>
</table>

**Registered Supporter** – Individual/micro organisation/NGO – FREE + donation **

**Voluntary ‘membership fee’ is welcome: €50/donation**