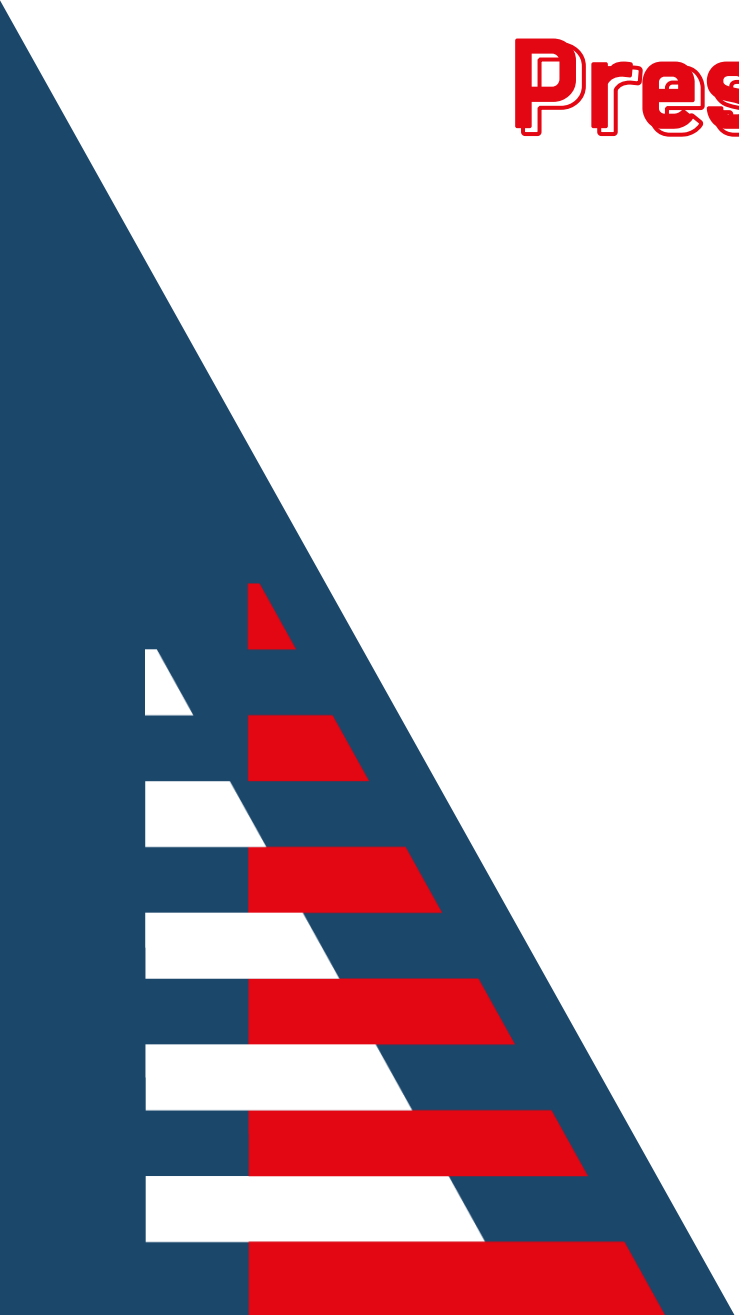




The international
summit for wind
powered maritime
transport

Press kit



Key numbers

In 2023, Wind for Goods it is:

- 2 days
- 16 conferences, round tables, workshops, pitches
- 900 attendees
- 21 countries represented
- 15% international attendees
- 400 companies
- Over 400 business meetings scheduled
- More than 50 exhibitors including:
 - **Airseas** with its automated kite based on the aeronautical expertise of Airbus,
 - **Les Chantiers de l'Atlantique** with their SolidSail, which will equip the boat built by **Neoline** (also present)
 - **CWS** with its rigid, invertible and asymmetrical kite capable of riding upwind
 - **Norsepower**, a Finnish company and a major international actor, will present its rotary sail
- 35 high-quality speakers, including:
 - **Heidi Sevestre**, glaciologist and member of The Explorers Club
 - **Yves Parlier**, president, and founder of Beyond the Sea
 - **Catherine Chabaud**, sailor, and member of the European Parliament
 - **Lise Detrimont** from Wind Ship
 - **Gavin Allwright** from IWSA

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Presentation

In September 2021, the first Wind for Goods event brought together more than 500 visitors, 17 companies and 20 innovations in sailing transport in Saint-Nazaire to highlight the actors and concrete solutions contributing to the decarbonisation of international maritime transport and the fight to preserve the environment on a large scale.

For the 2023 edition, the event will take place over two days and will be international in scope. The leading companies in the sector will be taking part in this unifying event, organised by the Nantes Saint-Nazaire Développement agency. While the 2021 event showcased the early stages, with prototypes and demonstrators, this year's event will feature the first boats equipped with sails and innovative technologies at sea. Chantiers de l'Atlantique (Solidsail), Norsepower, Airseas, Neoline, Wisamo, Farwind, Zéphyr & Borée and others will also be present.

The two-day programme includes conferences, round-table discussions, workshops, etc. to discuss the main challenges facing wind-powered shipping. It's also an opportunity for the international players present to talk about the wide-ranging responses they are planning to meet the challenges of the ecological transition. Visits to the sea and the key sites of Nantes & Saint-Nazaire as well as BtoB meetings are also being organised.

Website: www.windforgoods.fr/en

About Nantes Saint-Nazaire Développement

Nantes Saint-Nazaire Développement, organiser of the Wind for Goods event, has supported more than 670 companies over the past 8 years, particularly in the region's strategic sectors such as digital activities, sustainable industry (new energies, sailing transport and water sports), creative industries and health. Since its creation, the agency has helped to create more than 8,500 jobs in the region. Funded by Nantes Métropole, the Communauté d'agglomération de la région nazairienne (CARENE) and the CCI Nantes St-Nazaire, it is headed by Nicolas Debon and currently has a staff of 30.

Website: www.nantes-saintnazaire.fr/en

Press release

Do not release until June 1st, 10 :30 am

Leading the Way in Wind-Powered Maritime Transport in France, the Nantes & Saint-Nazaire Region Will Account for Over 50% of Jobs in the Sector by 2030

Saint-Nazaire, 1 June 2023 - To coincide with Wind for Goods, the international event on wind-powered transport, taking place on June 1 and 2, 2023, in Saint-Nazaire (Pays de la Loire Region), the Nantes Saint-Nazaire Développement Agency has commissioned a study on the development potential of the wind propulsion sector worldwide, pointing to significant opportunities for France, especially in the Nantes & Saint-Nazaire region.

- **The emergence of a new generation of shipowners designing ships powered 100% by wind is unique to France. Among the 31 pioneering companies in wind propulsion worldwide, 11 are French.**
- **Out of these 11 innovative French companies in wind-powered transport, 6 are located in the Nantes and Saint-Nazaire region.**
- **42% of the jobs in the wind-powered transport sector are concentrated in the Nantes & Saint-Nazaire region in 2023, a figure projected to reach over 50% by 2030.**

Currently, 90% of global merchandise trade is done by sea, accounting for 3% of global greenhouse gas emissions. If no action is taken, the International Maritime Organization (IMO) estimates that CO2 emissions from maritime transport could increase by 50%. Consequently, the IMO has adopted a strategy aiming to reduce greenhouse gas emissions from the world fleet by 50% by 2050.

Wind propulsion, an opportunity for France

As the second largest maritime country in the world in terms of surface area, with a historical ecosystem of expertise and pioneering companies - both SMEs and startups - working on developing innovative technologies, France has a significant advantage in wind-powered maritime transport.

- France has 20,000 km of coastline and 10.2 million km² of territorial waters under its jurisdiction or sovereignty.
- Maritime transport is already a large component of France's economy.
- In addition to technical and naval expertise, France has historical expertise in the aerospace, shipbuilding, yacht-building, and digital tech sectors, enabling it to position itself among the leaders in maritime decarbonization.

Market share from 20% to 30% for France

Currently, there are 25 large cargo ships equipped with wind propulsion technology worldwide. According to the study conducted by Avisa Partners, around 10,000 ships could be equipped with this technology by 2030, and up to 40,000 by 2050, which would represent 45% of the global fleet. Considering its strengths and technological lead, France could play a significant role in the development of this sector and capture a market share ranging from 20% to 30%, as indicated by the study.

A fully developed ecosystem attracts businesses and jobs to Nantes / Saint-Nazaire

In France, the majority of businesses in the wind propulsion sector are already located in the Nantes & Saint-Nazaire region. This dominant position is confirmed by the study. The Nantes and Saint-Nazaire region possesses numerous advantages to meet the challenge of maritime decarbonization.

Thanks to the historical expertise in shipbuilding and aerospace, combined with more recent knowledge in yacht-building, renewable energy, and digital tech, businesses can find technological solutions to their structural

questions. The region boasts a complete value chain composed of competitiveness clusters, R&D centres, technology centres, engineering schools, networks of economic actors, Nantes Saint-Nazaire Port, and the French branch of the international federation IWSA, known as Wind Ship, which has been based in Nantes since 2019.

In recent years, developers of various promising technological solutions in the field of wind-powered transport have chosen to set up operations in the Nantes & Saint-Nazaire region. Long-standing Saint-Nazaire shipyard Chantiers de l'Atlantique has developed its SolidSail technology. New businesses have also moved here. Airseas, a spin-off from Airbus, decided to relocate their headquarters from Toulouse to Nantes in early 2020. Wisamo, an initiative of the Michelin group, opened in Nantes in July 2022 in the Le Brick building. Neoline, based in Nantes, announced at the beginning of this year the construction of their first wind-powered cargo ship, the Neoliner, set to be launched in mid-2025. Paris-based CWS, which develops rigid wing sails, recently announced plans to open a production plant in Saint-Nazaire. Lastly, at the Ecole Centrale de Nantes, Farwind is initiating the construction of a rotor prototype for ship propulsion.

50% of jobs in the wind-powered transport sector in Nantes & Saint-Nazaire by 2030

All these opportunities demonstrate that wind propulsion is a robust and fast-growing industry with substantial job creation potential, particularly in Nantes & Saint-Nazaire. According to the study, the wind-powered transport sector currently employs 720 people directly in France in 2023, with over a third of them located in Nantes & Saint-Nazaire. By 2030, the number of jobs could increase by 5 to 10 times, with over 50% of the employment in the sector located in the region. The businesses already located here have significant growth prospects in the region by 2030: just among the equipment manufacturers, Airseas in Nantes is expected to create 1,500 jobs, CWS 500 jobs, Chantiers de l'Atlantique 200 jobs, and Wisamo 50 jobs.

Strong involvement of local stakeholders

All of these companies have benefited from the strong support of local stakeholders. The Pays de la Loire region, the Nantes Metropolitan Area, and the Saint-Nazaire Metropolitan Area play a key role in supporting and fostering this ecosystem. The success of Wind for Goods, the unique international event in this sector, is just one example of their dedication.

At Wind for Goods, businesses in the emerging wind propulsion sector, members of the Wind Ship association and public stakeholders issued a resounding call for enhanced support to consolidate the sector's foundations, empower companies to grow their businesses, hire and train new employees and finance their projects, and ultimately catalyse the rapid deployment of wind propulsion solutions from France. "The sector needs support, as well as spaces for meetings, dialogue, and visibility. Today, at Wind for Goods, as private and public sector actors in the field, we can proudly say that we are ready. We are ready to tackle the challenges involved in developing the wind propulsion sector to enable France to take a leading position," affirm the 50 exhibitors and institutional representatives at the event.

"We are delighted to host Wind for Goods in Saint-Nazaire, the only international event on wind-powered transport. This event is part of Saint-Nazaire's industrial history, with our expertise in shipbuilding, aerospace, marine renewable energy, and tomorrow, maritime decarbonization. New companies are joining the wind-powered transport sector and creating jobs in the region. Here, we firmly believe that industry is the solution to the challenges of ecological transition!" says David Samzun, Mayor of Saint-Nazaire.

"The second edition of Wind for Goods demonstrates the uniqueness and strength of wind-powered innovation throughout the Nantes Saint-Nazaire region. Our region has everything it takes to be at the forefront of this sector and boasts a rich ecosystem that creates jobs across the entire value chain, from research and innovation to industrial production. This event also symbolizes Nantes Saint Nazaire's steadfast commitment to promoting the environmental transformation of the entire maritime industry," says Johanna Rolland, Mayor of Nantes, President of Nantes Métropole and President of Nantes Saint-Nazaire Développement.

"The urgent need to decarbonize our economy represents both a challenge and a real opportunity for our businesses and industries. By leveraging local historical expertise in shipbuilding and aerospace, as well as the innovation ecosystem, the wind-powered sector is a fantastic illustration of the ongoing industrial transformation in our region," says Yann Trichard, President of the Nantes St-Nazaire CCI.

> Link to the [full study on the sailing transport sector](#)



Raising environmental awareness among young people

Several initiatives have been organized to raise awareness among young people about maritime decarbonization.

- A drawing contest: The associations Wind Ship and IWSA (International Windship Association), in partnership with Nantes Saint Nazaire Développement, have organized a contest on the theme "The Wind-Powered Ship of the Future." The competition is open to young artists wishing to design a poster or a short video depicting a future where all cargo ships are wind-powered. Deadline: 7 June 2023
- An educational session will be offered by Heidi Sevestre, glaciologist, for 2 primary school classes in Saint-Nazaire.
- Discounts and special hours for schoolchildren
- Students from the IUT (University Institute of Technology) in Saint-Nazaire are part of the organizing team.
- Budding reporters from the association VLIPP will produce content and video to raise environmental awareness among other young people.





Press release

CWS opens operations in Saint-Nazaire to produce rigid wing sails designed to decarbonize maritime transport and create over 200 jobs by 2025.

Saint-Nazaire, 1 June 2023 - Nantes Saint-Nazaire Développement, a responsible economic development agency, and Nantes Saint-Nazaire Port are pleased to announce that CWS will be opening operations at the port of Saint-Nazaire, in a 10,000 m² building in what was once the fruit terminal. They will be producing, assembling and testing a new generation of fully rigid, reversible and asymmetric wing sails, designed to decarbonize maritime transport. CWS plans to create over 200 direct jobs in Saint-Nazaire by 2025.

CWS offers an innovative propulsion system for the marine sector. "Our system is the result of extensive research and development to best address the challenges of hybridization and decarbonization in maritime transportation," explained Bruno Toubiana, co-founder of CWS. Its patented rigid wing sail system provides regular propulsion with limited drift effects, even at high speeds. "We have developed and successfully wind tunnel-tested an optimal asymmetrical profile that provides more power and better upwind performance. Our patented inversion system enables the deployment of a fully rigid asymmetrical wing on both the port and starboard sides while reducing the height by half and virtually eliminating drag in a symmetrical position." The wing sail developed by CWS reduces the vessel's fuel consumption by assisting the main engine and can be deployed on both existing fleets (retrofit) and newbuild ships (direct integration).

50 wing sails produced per year at the Saint-Nazaire plant

The Saint-Nazaire plant will produce the composite wing components and assemble the wing sails. They plan to start production in 2024 and ramp up to one wing sail a week by 2026. The first series of wing sails will equip an entire fleet of new container ships starting in 2025. Ultimately, the aim is to equip more newbuilds and retrofit existing ships in circulation.

Winner with Zéphyr&Borée in 2022

In 2022, a series of positive developments further affirmed the viability of the project. Tests conducted under quasi-real conditions in a 3D wind tunnel yielded performance exceeding expectations. CWS was also awarded Corimer's government-led call for projects, with the "Mervent 2025" project to produce a 6-wing, wind-assisted container ship with a consortium comprising Zéphyr&Borée, GTT and Ecole Centrale Nantes, making it Corimer's biggest project (40% of the total budget allocated). At their Saint-Nazaire plant, CWS will produce and assemble the 60 wing sails that will equip the ships to be built by Lorient-based Zéphyr&Borée for a coalition of shippers for transatlantic sea routes.

"Saint-Nazaire offers a combination of quality infrastructure and expertise in composites."

Among several cities in consideration, Saint-Nazaire emerged as the optimal choice for anchoring the company's operations. In June 2023, CWS will open their production plant in the port of Saint-Nazaire, near the submarine base. "Saint-Nazaire offers three key advantages: large docks for vessel mooring, substantial lifting capabilities, and high-quality expertise in composite materials." For the time being, CWS will maintain their research and development activities in Paris.

Over 200 jobs created in Saint-Nazaire

Founded in 2016, the startup currently employs 25 individuals with complementary skills in aerodynamics, materials, mechanics and automation. Supported by Nantes Saint-Nazaire Développement, CWS has begun discussions with local partners to help ramp up their workforce. The company plans to hire over 200 employees by 2025, encompassing various profiles such as quality engineers, technicians, mechanical engineers, and more.

Specifications:

- Wing length: 36 meters (when deployed) and 21 meters (when folded), with a width of 9 meters.
- Wing area: 324 m²
- 60 wings to be delivered between 2025 and 2026
- CWS will be present at [Wind for Goods](#) on June 1-2, 2023 in Saint-Nazaire.

"I'm delighted to welcome CWS to Saint-Nazaire. The expertise and skills that Saint-Nazaire has developed in aeronautics, shipbuilding, and offshore wind power will be instrumental in decarbonizing maritime transportation. This further demonstrates that Saint-Nazaire is at the forefront of the environmental transition," said David Samzun, Mayor of Saint-Nazaire.

"CWS' choice of Saint-Nazaire is clear evidence of the importance of the wind-powered cargo transport sector in the Nantes Saint-Nazaire region. With the second Wind for Goods expo, our region is reaffirming its ambition to meet the challenge of decarbonizing the maritime industry, one of our strategic sectors," said Johanna Rolland, Mayor of Nantes and President of the Nantes Saint-Nazaire Développement agency.

"Our aim is to support innovative projects that work towards the decarbonisation of maritime and port activities, and that help to make Nantes Saint-Nazaire Port a major player in the energy and ecological transition of the Greater West. We are delighted to be able to provide CWS with a solution for the production, storage and handling of XXL wings on our port facilities in Saint-Nazaire. This is the first concrete step in the establishment of an industry with a promising future, one that will create jobs in the port area, at the heart of an attractive region for the development of this activity." said Olivier Trétout, President of the Management Board of Nantes Saint-Nazaire Port.

"Decarbonizing maritime transport is one of the key factors in the ecological transition: a transition that is both respectful of the environment and a creator of jobs and wealth. The arrival of CWS and their wind-assisted propulsion system in Saint-Nazaire, home to some of the largest French and European shipbuilding enterprises, is a source of great pride for the region and its elected representatives" said Christelle Morangais, President of the Pays de la Loire Region.

> Learn more about CWS : <https://computedwingsail.com/en/>



Le rendez-vous
international du
transport maritime
à la voile

Appendix

Exhibitors

Solutions

exhibited indoors and at sea (boats, sails, prototypes, models, demonstrations)



ACC WING

ACCWing is a high performance flexible thick wing for all types of sailboats, including the largest ones. An ACCWing is lightweight and stowable with a relative simplicity of design, with few metal components. By accentuating the camber to its maximum, the lift is up to 2.5 times that of a conventional rig of the same surface.

It comes in two different versions:

- the Yachting version is made of sail fabric and composite parts, compatible with light headsails (Spinnaker, Gennaker, Code Zero...)
- the telescopic Merchant Marine version, made of exceptionally durable composite panels.

Sirehna, a subsidiary of Naval Group, joined the ACCWing project by bringing its expertise in naval system & platform automation.

<https://www.accwingsail.com/>

Aeroforce

Aeroforce, based in Lorient, France, designs and manufactures an inflatable, airtight, retractable and fully automated wing system. The Aeroforce system is the result of the collaboration of multiple innovative companies' expert in their respective fields to address the challenges of reducing the shipping industry carbon footprint.

The innovative combination of the high aerodynamic performances of an asymmetrical wing and the ability to be fully retractable offers a highly relevant solution both for retrofit and newly built ships. A first implementation of two 125 m² Aeroforce wings will be operational by the end of 2023 on the MODX 70, first 100 % electric and 100 % renewable energies yacht.



<http://www.aeroforce.fr/>



Airseas

Airseas was founded in 2016 in Toulouse by two Airbus engineers, with the ambition of transferring their aeronautical expertise to develop Seawing, an automated kite system designed to tow ships using the power of the wind. Airseas has received an initial order from Airbus, followed by five orders from Japanese shipowner 'K' Line between 2019 and 2022.

The company is based in Nantes since 2021, and Seawing is currently finalising its first tests on a Louis Dreyfus Armateurs ship, chartered by Airbus.

<https://www.airseas.com/>

Anemoui Marine Technologies

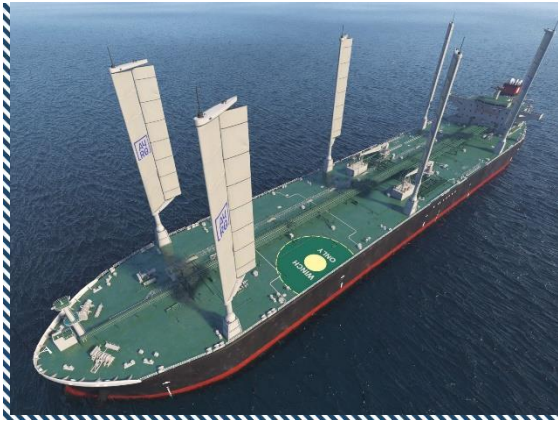
Anemoui is committed to accelerating the maritime industry's transition to zero emission shipping by delivering market-leading wind technology. Rotor Sails, modern mechanical sails, were first installed on a vessel over 100 years ago.

Through research and innovation, Anemoui have reimagined the technology for commercial use on modern ships to reduce fuel consumption and lower emissions by 5-30%. Our proven technology has been uniquely designed to work alongside complex vessel operations, making it suitable for most ship types as retrofit and newbuild.



As other energy-saving devices and alternative fuels become market-ready, Rotor Sails can also be used in conjunction to achieve enhanced environmental benefits.

<https://www.youtube.com/watch?v=a2jyOgg-T64&t=7s>



Ayro

Founded in 2018 by Marc Van Peteghem, AYRO is a French industrial company that designs, manufactures and delivers Oceanwings®, a wind propulsion system dedicated to the decarbonization of maritime transport. Our technology is an automated, lowerable and patented wing sail which enables the hybridization of the new build and retrofit vessels, saving up to 45% of fuel consumption and carbon emissions.

The wingsail has a unique design, with a two-element aerodynamic profile, offering unmatched aerodynamic lift with limited drag. The advantages of our system are numerous: optimized weight, small deck space and simplicity in its structure allowing a quick installation on ships. All of these elements will support a wide range of commercial vessels in their technological transition.

<https://www.linkedin.com/company/ayro-oceanwings/>

Beyond the Sea

Created by Yves Parlier, Beyond the Sea® develops and markets kites, designed to tow all types of vessels (from pleasure boats to the largest maritime transport vessels).

Our towing systems use the force of the wind in addition to the engine. Our kites reduce the fossil fuel consumption of ships and their greenhouse gas emissions by an average of 20%.

Our SeaKite system is fully automated, from sending to retrieving the kite. It is installed on our laboratory catamaran and demonstrator The SeaKite. It is intended for professional use (fishing, transport...) as well as for pleasure boating. LibertyKite is a self-stable kite intended for recreational and/or safety use as it is a simple to install emergency propulsion system.



<http://beyond-the-sea.com/>



Bound4Blue

Bound4Blue develops automated suction sails as a turnkey solution for all shipowners and shipping companies seeking to reduce fuel costs and polluting emissions. Bound4Blue's eSAIL® system is an efficient and validated solution for saving fuel and emissions, completely autonomous, with low maintenance and easy installation onboard.

The company, founded in 2014 with a vocation clearly focused on the renewable energy sector in the maritime field, has its headquarters in

Cantabria (Spain) and offices in Barcelona and Singapore. During 2021, the company installed its eSAIL® system on two ships and has signed additional agreements with other shipowners (Louis Dreyfus Armateurs, Amasus Shipping and Marubeni Corporation) to install the system on their fleets.

<https://bound4blue.com/en/>

CWS

CWS proposes an innovative wind propulsion system for the maritime sector. Our patented system, based on a rigid, invertible, asymmetric profile provides regular propulsion even on fast ships with limited drift effects; operation is automatic and maintenance minimum.

Our wing reduces the ship's fuel consumption by helping the main engine and can be deployed both on existing fleet (retrofit) and on newbuild ships (direct integration). CWS can provide integration, fuel savings and EEDI analysis according to best practices.



<https://computedwingsail.com/en/>



Chantiers de l'Atlantique

Thanks to the expertise of its teams, its network of subcontractors, and its first-rate industrial facilities, Chantiers de l'Atlantique is a key leader in the fields of design, integration, testing and turnkey delivery of cruise ships, naval vessels, electrical substations for offshore wind farms and services to the fleets.

By designing and building ships whose environmental performance exceeds the most drastic standards, as well as equipment for offshore wind power, the company plays a significant role in the energy transition.

Developed by Chantiers de l'Atlantique, the SolidSail system comprises a sail made of 100% composite materials and a fully automated rig with a balestron that can rotate 360 degrees and masts that can rotate or tilt 70 degrees to go under bridges.

<https://chantiers-atlantique.com/>

Eco Trans Ocean

Created in 2021, Eco Trans Ocean aims to transport freight from the port of St Malo to the Antilles and Polynesia. Ours targets are local and regional goods, highlighting people and partner companies. This line dedicated to these historic marine territories is zero carbon, respectful of the environment, and presenting a positive image.

Our ship will be integrated with superior criteria's to environmental standards, integrating the latest technologies. The 3 partners: 2 sailors and 1 sales representative are carrying out this ambitious project which combines a low environmental footprint, compliance with the rules of maritime trade and a circular economy.



<http://www.ecotransocean.com/>



Ecoclipper / Attendance cancelled

EcoClipper is a specialist shipping company, which focuses on developing and launching a line of emission-free, square-rigged, sailing cargo ships. In order to realise this, EcoClipper has finalised the design for the prototype of an engineless, sailing cargo ship, influenced by the 'state of the art' clipper ships of the 19th century.

A multitude of one-ship shipping companies will be launched, that will all be using this design. These shipping companies will be marketed through an on-going marketing campaign, meant

to attract investors who strive to expand their sustainable investment portfolio.

This way, we create a company based on good ethics, with the application of an unprecedented adventurous story, the offer of true sustainability, in a potentially booming, global market.

<https://ecoclipper.org/shipping/>

Farwind Energy

Farwind Energy designs, develops, commercializes and operates solutions for far-offshore wind energy - an exceptional reservoir currently unexploited - conversion, storage and delivery. These solutions are based on wind-propelled energy ships, which generates electricity stored on-board (batteries, hydrogen or e-fuel).

With its energy ship, Farwind Energy has devised a remotely controlled solution capable of taking advantage of far-offshore wind conditions.

Farwind Energy solutions can deliver energy where and in the form which is needed and are particularly well suited to non-interconnected areas. The energy supplied has four major advantages: clean, no conflict of uses, low geopolitical risks and increased energy independence.



<https://farwind-energy.com/fr/>



Grain de Sail

Grain de Sail is a shipowner, maritime company, freight forwarder, logistics provider and freight transporter. Born in 2010, feet in the water in Morlaix, Brittany, the original idea for Grain de Sail was to retrieve coffee and chocolate from the other side of the world and to limit to the fullest the CO2 emissions, thanks to a unique mode of transportation: the cargo sailboat.

Since then, the company has proven its business model that combines land-based and ocean-based activities. Grain de Sail has constructed the first modern cargo sailboat in the world in 2020 and will launch in January 2024 a second cargo sailboat measuring 52 meters and featuring a payload capacity of 350 tons.

In becoming a freight forwarder, Grain de Sail is offering a unique service on board its cargo sailboats and provides regular and low carbon maritime routes between Europe and the Americas.

<https://graindesail.com/fr/content/14-notre-voilier-cargo-grain-de-sail>

Iliens

Iliens' goal is to establish carbon-free maritime transport by creating the first regular maritime link by sailboat between Quiberon and Belle-Ile-en-Mer in one and a half hours. It helps to reduce transport carbon emissions - which make up 30% of global emissions - in a user-friendly and fun way.

The link between Quiberon and Belle-Ile-en-Mer is currently used by more than 900,000 passengers per year.



Our ship is designed to ensure an enjoyable journey: efficient, comfortable and quiet. Designed by a French company, it is a catamaran with a capacity of 68 passengers.

<https://iliens.fr/>



IRT Jules Verne

IRT Jules Verne is a mutualized industrial research centre dedicated to manufacturing. Working closely with production equipment manufacturers and integrators, IRT Jules Verne caters to 4 strategic industrial sectors: aeronautics, shipbuilding, the automotive industry, and RME.

The IRT team works hand in hand with the absolute best industrial and academic resources in the manufacturing field. Its vocation is to improve the competitiveness of strategic

industrial sectors in France by creating disruptive technologies for manufacturing processes. Its mission is to speed up innovation and technology transfer to factories. In its bid to provide comprehensive solutions up to scale-1 demonstrators, the institute installs and utilises a wide range of exclusive state-of-the-art equipment.

<https://www.irt-jules-verne.fr/>

KaapKargo

The shipping company KaapKargo currently has two operating sailing vessels - De Ide Min and De Lun II. These ships mainly sail in Europe and the Transatlantic area, carrying goods around Europe or the Caribbean solely by wind.

KaapKargo is interested in bringing (organic) products from South and Central America to Europe and vice versa, creating a circular chain where products can be transported back and forth.



De Ide Min has a length between the load lines of 26.12 m and is 38m long, has a hold of 84m³ and can take 16 crew members, including trainees. Sailing cargo ships are also being built in Kaap de Groene Hoop, the company's harbour, so that they can ensure that the most sustainable and innovative choices are used.

<https://kaapkargo.com/>



Neoline

Founded in 2015 by a group of merchant marine professionals, NEOLINE is developing energy-efficient, responsible and more environmentally friendly shipping solutions based on a main sail propulsion.

Leading French companies such as Renault Group, Beneteau Group, Manitou Group, Michelin, Jas Hennessy & Co, Clarins, Longchamp and Rémy Cointreau have signed up as the first clients of the transatlantic pilot line open to all shippers, which will link Saint-Nazaire, Saint-Pierre-et-

Miquelon, Baltimore and Halifax as early as 2025, with the first ro-ro cargo ship under sail, 136m long, which will enable them to reduce the impact of their supply chain on this route by 80 to 90%.

<https://www.neoline.eu/>

Neopolia

Neopolia is a network whose vocation is to build and carry multi-expertise commercial offers on the main mobility markets (Aerospace, land mobility, marine) and energies (energy and offshore wind & MRE).

Neopolia Marine federates and makes companies work together to respond to your Projects. With 85 member companies and 60 business expertise, Neopolia Marine offer a comprehensive and customised solution for all your maritime and river projects. Expert in complex and innovative projects, Neopolia Marine has been meeting the needs of the sector for 20 years.



At the heart of the Wind propulsion Projects, we will accompany you on:

- Technological Development
- Studies and Design
- Integration,
- Ship Building, Refit
- Vessels Fitting
- Supervisory test

<https://www.neopolia.fr/>



Norsepower

Norsepower Oy Ltd is a Finnish clean technology and engineering company pioneering modern auxiliary wind propulsion for the global maritime industry.

The Norsepower Rotor Sail™ has been used by customers for over eight years and has been proven as a low-maintenance, easy to use, and reliable fuel saving technology, which is supporting the decarbonisation of the shipping industry.

<https://www.norsepower.com/>

Reel

REEL is an industrial group specializing in complex lifting and handling equipment as well as integrated systems solutions. REEL is involved at all stages of the product cycle, from design to maintenance, including production phase. REEL has a client-based culture, with its strength based upon an in-depth understanding of their industries and their processes, with geographical proximity undergoing constant evolution.

REEL in partnership with CRAIN is developing an auxiliary wind propulsion device for cargo. This system consists of a thick and solid wing, equipped with a rear flap. An internal fan makes it possible to suck up the boundary layer and achieve an extremely high coefficient of lift. The wing thus sucked produces force and propels the ship in combination with the main engine.



<https://www.reelinternational.com/>



Seawitlab

Thanks to its patented technology, the very innovative company SEAWITLAB designs and realizes since 2019 flexible and inflatable structures with controlled geometry (non-parallel faces). SEAWITLAB has produced several prototypes of varied sizes and models around the propulsion of vessels (3 to 15 m²).

Thanks to the proficiency in its new process and its know-how for the realization of 3D textiles with controlled geometry, SEAWITLAB is now fully focused on the decarbonization of maritime transport.

This young and dynamic company proposes to integrate its technological brick within a collaborative project for the realization of flexible and inflatable wings of large sizes for the velocity propulsion of commercial ships.

<https://www.seawitlab.fr/>

Syroco

Based in Marseille, Syroco supports the energy transition of maritime transportation.

The startup stems from a moonshot-driven research & innovation lab (with the goal to shatter the world sailing speed record at 150 km/h, using only the wind). It develops Syroco EfficientShip, a software platform that builds digital twins of ships by leveraging physics modelling, data and AI.

Deployed on board, the digital twins empower core applications for optimising the operational and energy efficiency of the fleet.

<https://syro.co/fr/>





Terre Exotique

The spice producer Terre Exotique is committed to reducing its carbon footprint through a more environmentally friendly means of transport.

For the past two years, the company has been transporting its products around the Mediterranean and the Atlantic aboard an 18-metre monohull racing boat (IMOCA). This commitment aims to give a second life to a sailing boat that was condemned to stop sailing and to contribute to the renewal of a mode of transport that uses only the force of the wind.

<https://www.terreexotique.fr/blog/le-programme-eole/>

VPLP Design

The firm was founded by Marc Van Peteghem and Vincent Lauriot-Prévoist in 1983, after studying at Southampton Solent University.

VPLP Design is now a world-renowned young international team of French-based Naval Architects, Engineers and Designers working from Vannes, Nantes and Paris in sail and motor yachts projects across the world, for 40 years.

One of the VPLP's most recent innovations involves the development of the reefable automatic wingsail Oceanwings (patented), a veritable "wind drive" for reducing the fuel consumption of freighters and cruising boats. Development and marketing have now been entrusted to the startup Ayro.



In subsequent years, VPLP have structured the organization into 3 divisions to focus on separate sectors of the yacht market: Racing, Cruising and Maritime.

<https://www.vplp.fr/>



Wind Ship

Wind Ship Association promotes a clean and low-carbon shipping based on wind-powered ships.

International shipping emits 1 billion tonnes of CO2 per year, almost 3% of global emissions. These emissions could increase by a further 50% by 2050 if the current trend continues. Few alternatives to fossil fuels are immediately available except wind, a renewable, abundant, predictable and primary energy source available onboard ships.

Created in 2019, Wind Ship gathers pioneering companies in wind propulsion emerging sector and is acting locally, nationally and internationally to unleash the potential of this solution as a major and already available route to decarbonising shipping and fishing industries.

<http://www.wind-ship.fr/>

Wind Support NYC

Wind Support NYC promotes projects and companies accelerating the adoption of wind propulsion in maritime transport.

Information - on the podcast *Hoisting the Sail*, we interview professionals to document the transformation of maritime transport, focusing on its decarbonization. We introduce to our audience innovations, both in technologies and business models, that accelerate the race to zero emission.



Education - we organize workshops and conferences with maritime schools in the US to expose wind propulsion and clean shipping to future maritime professionals.

Business development - we develop communication and lead generation campaigns for technology developers and innovative ship owners through activation on trade shows and events organization.

<http://www.windsupport.nyc/>



Windcoop

Windcoop is changing maritime transport on a social, ecological and financial level. Windcoop operates container ships under sail, propelled mostly by wind power, which is inexhaustible, clean and free.

These innovative ships contribute to develop a low carbon transport. Our first sailing cargo will go into building in 2023. Our ambition is for it to be owned by a host of shipowners wishing to accelerate the transition of maritime transport.

Windcoop is structured as a cooperative, and offers everyone (individuals, companies and communities) the opportunity to become a member in order to offer a new shipping company model. This progressive project will allow all stakeholders to develop a low-carbon transport model, concerned about people and the environment.

<https://www.wind.coop/>

Wisamo MICHELIN

WISAMO is an initiative from Michelin Group and aims to contribute to maritime transport decarbonization.

WISAMO introduces an innovative hybrid solution which harnesses free and universal wind energy. This solution is an inflated, foldable and automated wing sail allowing to cut shipping costs and CO² emissions. Simple, robust and economical, WISAMO wing is particularly efficient in upwind conditions.



"Engineered by Michelin, Powered by Wind", WISAMO accompanies its customers from the beforehand phase to study implementation feasibility on new vessels as well as on existing ones.

WISAMO aims to help humans to conquer new frontiers for the planet, with a sustainable growth approach aiming to contribute to a green supply chain.

<https://www.linkedin.cn/showcase/wisamo>



Yara Marine Technologies

Since 2010, YMT has been at the forefront of maritime emissions reduction, working closely with ship-owners, yards, and naval architects as partners in our effort to drive the change towards sustainable shipping.

Today, Yara Marine offers a portfolio of green technologies, such as SO_x scrubbers, fuel optimization systems, turnkey shore power solutions, and the cutting-edge, advanced wind-assisted propulsion system WindWings.

Designed by the naval architects at BAR Technologies, the WindWings system combines rotating multi-element wings and advanced route optimization to harness the power of the wind. This leads to significantly improved fuel efficiency, reducing fuel consumption c. 1.5 tonnes and CO₂ emissions by c. 4.7 tonnes per WindWing per day. The system is designed for straightforward operation and low maintenance, which results in low operational expenditure. Yara Marine is headquartered in Oslo, Norway, with offices in Sweden, Poland, and China.

<https://www.linkedin.com/company/yara-marine-technologies/>

Zéphyr et Borée

Zéphyr & Borée is a young shipping company, based in Lorient - France which specialized in the fitting and operating of low-carbon merchant ships and is a pioneer in modern sailing maritime transport.

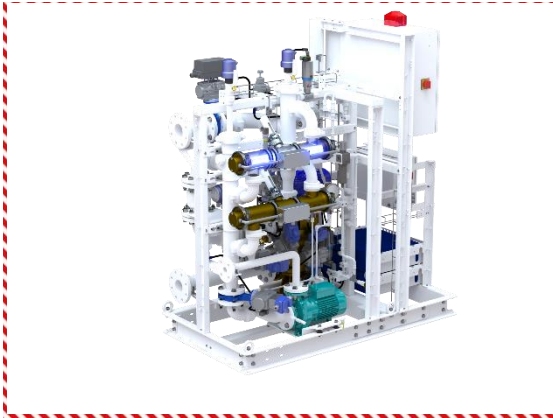
Co-operator of the vessel Canopée, the very first modern sailing freighter in operation, Zéphyr & Borée is now developing a fleet of 10 container ships equipped with rigid wings which will be operated from 2025 between Europe and the United States.



<https://zephyretboree.com/>

Technologies

associated with the wind-powered marine transport sector (sensors, routing software, equipment maintenance, monitoring systems).



Bio-Sea

BIO-UV, an innovative industrial SME, French manufacturer of UV-C water treatment equipment, designs, manufactures and markets systems and concepts of water disinfection adapted to a large number of applications.

BIO-SEA by BIO-UV Group is the only French supplier of ballast water treatment systems compliant with both IMO convention and USCG certification.

The ballast water treatment system BIO-SEA from BIO-UV Group combines mechanical filtration and high UV dose disinfection, without any chemical treatment. It allows to fight against the proliferation of invasive species and to preserve the natural ecosystem, with high quality marine components.

<https://www.ballast-water-treatment.com/>

Blue Wasp Marine

Blue Wasp Marine is dedicated to wind assisted propulsion as a solution for the decarbonisation of the maritime industry.

Blue Wasp aims to support vessel owners & operators as well as naval architects and shipbuilders through the journey to wind assisted propulsion, from preliminary assessment to installation, eliminating risks and ensuring optimal benefits.

Based on over a decade of PhD research, Blue Wasp has developed Pelican, a unique piece of design decision software that offers rapid, reliable performance predictions. With its highly flexible and customisable character, Pelican informs the correct decision making and ensures the best results in wind assisted propulsion.

Blue WASP
Wind Assist Specialists

<https://bluwaspmarine.com/>



CRAIN

CRAIN is an independent consultancy located in La Rochelle which has been focused since its foundation in 1984 on wind propulsion.

CRAIN has a strong background in naval architecture, fluid mechanics and energy efficiency which have been acquired by being involved in a variety of projects. CRAIN has a specific approach, based on a step by step and multidisciplinary method. It masters a large set of tools, from the evaluation of order of magnitude up to experimental methods.

CRAIN's services are ranging from the evaluation of the aerodynamic properties of an isolated wind propulsion device up to the savings of a set of interacting devices fitted on a ship along its operating routes.

<http://site.craintechnologies.com/index.php/fr/>

D-ICE-Oceanics

D-ICE is a deeptech company offering software solutions and embedded systems to help the maritime sector meet the challenges of its energy transition.

D-ICE Engineering articulates its offer around the following 4 products/services:

- OCEANiCS, new generation onboard navigation & control system
- BLADiCS, controller overlay for the optimisation of the control (production and stabilisation) of floating wind turbines
- SATORI, online statistical routing study service
- Marine engineering, validation studies of the operational capacities of offshore supports (CTV, offshore service vessels, etc)



<https://dice-engineering.com/>



Fouré Lagadec Marine

Fouré Lagadec Marine is a French company based in Le Havre, specialized in design, fabrication and maintenance of marine equipment.

Fouré Lagadec Marine specialized in manufacturing and maintenance of antiroll stabilizers, retractable daggerboard and covers for bow thruster. With more than 150 vessels equipped all over the world and an orderbook of newbuilding deliveries until 2027, Fouré Lagadec Marine is on track to innovate with new systems and continue improvement of existing equipment.

With knowledge on ship stabilization, mechanics, hydraulics and automatism, relying on a full design office and a dedicated workshop Fouré Lagadec Marine service is independent to develop innovative solutions that answers customer needs.

<http://www.fourelagadec.com/>

LCJ Capteurs

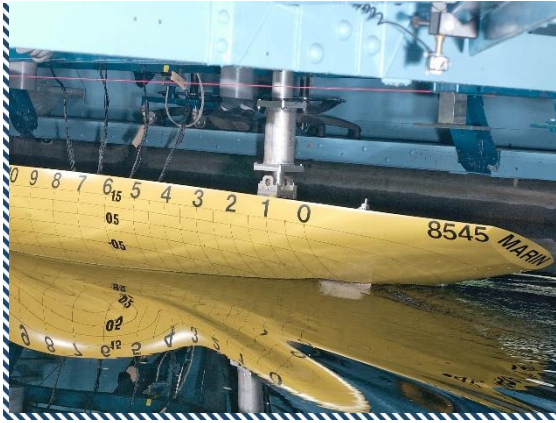
LCJ Capteurs was created in 1999 with the aim of designing a robust, static wind speed and wind direction measurement sensor that is marinated, lightweight, discreet, compact, accurate and with low energy consumption.

Its first patented CV3F model is designed for all-weather professional vessels. The other patented CV7 version is designed for recreational sailing, power vessels and racing boats.



LCJ Capteurs equips various members of the WIND SHIP French association, which aims to accelerate the ecological transition of the maritime sector. LCJ Capteurs is keen to continue providing their ultrasonic wind vane-anemometers to help these actors developing green solutions to reduce the ecological impact and thus decarbonise maritime transport through wind-powered navigation.

<http://www.lcjcaptors.com/>



MARIN

MARIN is a recognised top maritime research institute. Our mission is 'Better Ships, Blue Oceans': a clean, smart and safe shipping and sustainable use of the sea. We are an independent knowledge partner for the maritime sector, government and society.

We offer concept development and design to operation, making optimal use of our test facilities, computer simulations, simulators and full-scale measurements.

Since 2011 MARIN promotes research in re-implementation of wind propulsion in commercial shipping with various EU projects, Joint Industry Projects, IMO contributions and service to clients. In order to judge whether wind propulsion is relevant for your ship design and operation MARIN can perform an independent feasibility study and, at a later stage, design optimisation and verification.

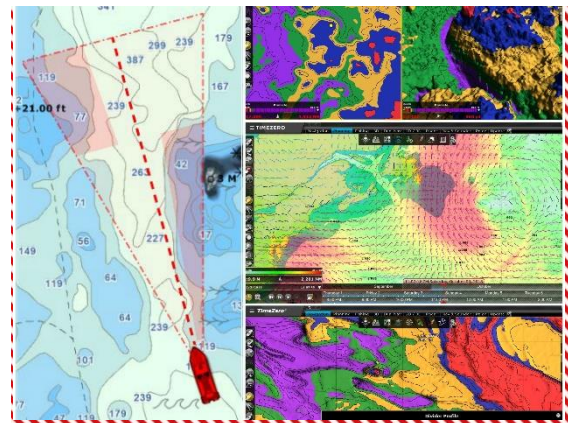
<https://www.marin.nl/en>

Maxsea

Thanks to 30 years of working in marine navigation, TIMEZERO boasts a proven powerful technology that was developed with a unique vision allowing for continuous innovation.

TIMEZERO's innovative design was developed to answer the needs of recreational sailing, cruising and regattas as well as a professional solution to fit the needs of all the maritime industries.

To ensure our continuing relevance, we put the utmost importance on collaborating with professionals leading in their respective industries to put our software to the test against the unique needs of each market.



<https://mytimezero.com/fr>

RIO Instruments - VAF Instruments



RIO Instruments is an instrumentation dedicated company focused on liquid, gaseous or vapor fluids measurements.

Regarding marine instrumentation, our historical partnership with VAF Instruments allows us to offer the only optical propeller thrust measurement available on the market. And thus, to have by comparison at similar speed, the contribution of the velic propulsion via the

measurement of the decreasing value of the conventional propulsion. Regardless the engine is conventional or hybrid

Moreover, comprehensive transverse solutions are available to optimize energy efficiency of the boat, including the hull. From the most basic fuel consumption measurement to the viscosity of an HFO or the more advanced measurement of the propeller thrust, RIO Instruments is at your side on these diverse topics.

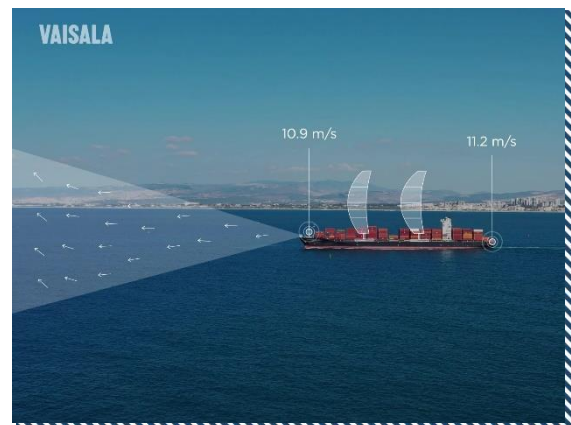
In addition, we also have experience in measurement and monitoring of corrosion/thickness of piping.

<https://www.vaf.nl/products-solutions/overview/tt-sense-shaft-power-thrust-meter/>

Vaisala

Vaisala is a global leader in weather, environmental, and industrial measurements with over 85 years of experience serving our customers with the most accurate, reliable and dependable weather monitoring solutions.

In Vaisala Maritime segment we provide diverse portfolio of weather monitoring instruments and systems to shipping, ports, coastal monitoring, helideck, and offshore operations enhancing their safety and efficiency. We are also serving globally most of the world meteorological organization with our weather products and services.



We have a range of reference-grade wind technologies including robust wind sensors, weather stations and remote wind lidars that can be harnessed to support better performance and optimization of modern sailing technologies utilizing wind-assisted propulsion.

<https://www.vaisala.com/en/lp/wind-assisted-vessels-future-cleaner-shipping>

Funding / Insurance



Banque Populaire Grand Ouest

Banque Populaire Grand Ouest, together with its Crédit Maritime brand, is a major player in blue economy development projects.

In 2022, more than 150 million euros of funding dedicated to supporting the maritime sector. The challenge of decarbonizing maritime activities, including transport, is a priority, and Banque Populaire Grand Ouest wishes to provide its expertise and support for sailing projects.

Whether in financing or in strengthening equity, Banque Populaire Grand Ouest has the essential tools to place sailing propulsion at the heart of the priority issues of tomorrow and to support its players: equipment manufacturers, shipowners, etc. It's the sea that unites us.

<https://www.labanquebleue.fr/>

Bpifrance

Bpifrance finances companies at every stage of their development with credit, guarantees and equity. Bpifrance assists them with their innovation and export projects.

Bpifrance also provides a wide range of export insurance products. Consulting, training, networking and an acceleration programme for start-ups, SMEs and mid-sized companies are some of the other services it offers to entrepreneurs.



Thanks to Bpifrance and its 50 regional offices, entrepreneurs have a single local contact to help them through the challenges they face.

<https://www.bpifrance.fr/>



Crédit Mutuel Loire Atlantique Centre Ouest

Involved in the regional economy, Crédit Mutuel Loire-Atlantique Centre Ouest offers comprehensive solutions for individuals, farmers, companies, associations and local authorities, etc.

With a reason to be included in its articles of association since 2020, "Together, Listen, Act", Crédit Mutuel Loire-Atlantique Centre Ouest shares the commitments formalised by the

Caisse Fédérale Crédit Mutuel as part of its status as a mission in response to societal and environmental challenges.

With the will to serve the interests of its members and customers, to contribute to the development of territories, to put innovation and technology at the service of the human. A bank that belongs to its customers, it changes everything!

<https://www.creditmutuel.fr/fr/groupe/banque-solide/federation.html?amcf55=1>

Howden Marine

Howden Marine is the marine, inland waterway and transport insurance broking arm of Howden France, formed from the acquisition of Guian and SeaSecure. Our experts are able to provide solutions to your needs, particularly in the fields of marine, inland waterway and transport and logistics operators.

Howden France has a nationwide presence and strong technical expertise covering the full range of insurance industry services (Financial Risks, Motor Fleet, Property, ...).

howden

About the Howden Group: With over 13,000 employees worldwide, Howden is a leading independent provider of insurance and reinsurance broking, risk consultancy and employee benefits consultancy.

<http://www.howdenfrance.com/>

Support



CCI Nantes Saint-Nazaire

Our mission: supporting company growth, promoting territorial economic development, representing local businesses and industries among public authorities.

Providing business support related to various issues such as digital and energy transitions, finance, expansion into new markets, business performance

Entrepreneurship and company buyouts: Maison Création Transmission Entreprises - Sup'Porteurs de la création

Skills development: higher education programs, vocational training programs and executive education programs, apprenticeship programs (Ile Campus de Nantes), higher education programs (Audencia group, Ecole de design ...).

<https://nantesstnazaire.cci.fr/>

PASCA

PASCA is a professional network, pole of expertise and collaborative platform for Supply Chain professionals. The association plays a strategic role in the logistics sector of the Pays de la Loire region. Its mission is to help the stakeholders in matters of Supply Chain issues, industrial development and competitiveness.

The field of action is divided in five areas of expertise:

- Research and Innovation
- Education and Skills
- Project management
- Networking
- Promotion of the sector

<http://www.pasca.fr/>





Pôle Mer Bretagne Atlantique

Pôle Mer Bretagne Atlantique aims at meeting the new challenges of the maritime sector.

By supporting and stimulating innovation within the maritime ecosystem of Brittany and Loire, it contributes to economic growth and the development of employment in its territories. It has 440 members and has labelled, by the end of 2022, 503 projects (which correspond to €366 million of public financing)

<https://www.pole-mer-bretagne-atlantique.com/fr/>

Région Pays de la Loire

The Pays de la Loire has chosen in 2023 to focus on ecology. The Region is accompanying all sectors towards the decarbonisation of their activities and supports all initiatives aimed at reducing environmental impacts.

The sailing transport sector is becoming increasingly important in the decarbonisation of maritime transport, and the Region is proud to partner with the organisation of Wind for Goods to showcase concrete and innovative solutions to meet the challenges of the ecological transition.

<https://www.paysdelaloire.fr/>





Saint-Nazaire Agglomeration

Saint-Nazaire Agglomeration - La CARENE brings together 10 municipalities that are aiming to collectively build a future project for their territory, one that is based on solidarity and sustainability, and which serves its residents

The Nazaire agglomeration benefits from a solid foundation of internationally renowned major industrial players, complemented by local companies with unique « savoir-faire ». It aims to establish itself as a leading territory in energy transition, the blue economy, and as an

accelerator of the decarbonisation of the industrial sector

Given the strategic position of its historical sectors, including shipbuilding, energy, port economy, and aeronautics, the region is committing resources to support the emergence of marine renewable energy, marine bio-resources, wind-powered shipping and H2 low carbon.

<https://www.agglo-carene.fr/>

Nantes Métropole

As an estuary and port city, Nantes has always had a strong relationship with the Loire River and the maritime industry. Today, it is committed to supporting and inventing a sustainable, low-carbon and accessible maritime industry. With its excellent higher education training courses, competitive clusters, innovative companies and events dedicated to the nautical industry, Nantes is now the epicentre of tomorrow's maritime sector.



To enable this new maritime ecosystem to flourish, Nantes Métropole has been transforming the Lower Chantenay site (an industrial district at the Loire River and within the city of Nantes) for several years. Launched last Summer, "Le Brick" is the first visible achievement: a 6,000 m² hybrid space composed of industrial workshops and office space for innovative companies

<http://www.entreprises.nantesmetropole.fr/>

Press contact

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