



CONFERENCE REPORT 2023



**WIND
FORGOODISI**
SAINT-NAZAIRE | NANTES

**Nantes.
St-Nazaire**
DÉVELOPPEMENT



WIND FORGOODS

SAINT-NAZAIRE | NANTES

The international summit for
wind powered maritime transport
JUNE 1ST AND 2ND 2023



Saint-Nazaire submarine base

- 2nd edition over two days
- **900** participants
- **16** conferences, round tables and pitches
- **35** speakers
- **More than 50** exhibitors > [full list](#)
- **450** businesses
- **400** businesses meetings
- **15%** international participants
- **21** countries represented



The sustainable economic development agency for Nantes and Saint-Nazaire, organizer of Wind for Goods, has supported over **670 companies** in the past 8 years, helping create more than **8,500 jobs** in the region.

The agency focuses on strategic sectors of the region:

- **digital activities**
- **sustainable industries** (renewable energy, wind-powered transport and yachting)
- **creative industries**
- **health**

EVENT OBJECTIVES



Discover concrete solutions that contribute to the decarbonization of maritime transport.



Share ideas on the key issues faced by the industry, which aims to protect the oceans.



Connect with ecosystem stakeholders such as shipowners, technology developers, financial backers, shippers, experts, carriers, and manufacturers.

ECO-DESIGN

The event is designed with eco-friendly practices and is applying for certification as an «**Eco-Engaged Event**» in partnership with REEVE (level 2).

Several awareness-raising initiatives have been set up for young audiences:

- discounts and special hours for schoolchildren.
- student volunteers from the IUT working at the event.
- a visit by glaciologist Heidi Sevestre to two primary school classes in Saint-Nazaire.
- young reporters from the VLIPP association present to cover the event.



«WIND POWER IS A PROMISING SECTOR IN THE EFFORT TO DECARBONIZE MARITIME TRANSPORT IN FRANCE AND INTERNATIONALLY. »

Join us!

Wind for Goods issued an appeal on June 1, 2023

We are gathered for the second edition of Wind for Goods in Saint-Nazaire, an event organized by the Nantes Saint-Nazaire Développement Agency in collaboration with the Wind Ship Association. This international event dedicated to wind-powered maritime transport is a unique moment for professional networking and inspiration. Its aim is to bring together all the stakeholders involved to focus on concrete solutions and help develop a sustainable cargo sector in line with the climate emergency.

Over 80% of goods, amounting to 11 billion tonnes, are transported annually by sea. The 100,000 ships criss-crossing the globe are responsible for 3% of global greenhouse gas emissions. The International Maritime Organization has committed to reducing greenhouse gas emissions by 50% by 2050 compared to 2008.

Wind has long been absent from these considerations, but it was the wind that powered the first long-distance voyages. As a free, entirely renewable energy source abundant on our planet, emitting no pollution or underwater noise during navigation, wind is readily available to drive the ecological transition of maritime transport.

Harnessing wind power for ship propulsion gives rise to a promising French and European industrial sector aimed at reducing the environmental impact of maritime transport. France is home to a number of ambitious and determined businesses aiming for a prominent position in this sector.

Technological solutions such as wing sails, suction sails, rotors, and kites are reaching maturity, with around twenty existing vessels already testing them and others under construction. One-third of the companies developing these technologies are French, and French shipowners and shippers are also embracing this path. Over 500 direct jobs have been created in France, with 15,000 projected by 2030, and several production plants are already being built throughout the country.

However, there are still many challenges to overcome in deploying these solutions. Equipment manufacturers, engineering firms, architects, shipowners, and shipyards are working tirelessly, supported by an entire value chain including shippers, investors, suppliers, the government, ports, and local authorities. In Pays de la Loire, Brittany, Nouvelle Aquitaine, Normandy and along the Mediterranean coast, emerging ecosystems are consolidating at the national level to supply one-third of the global market.

The industry needs support as well as spaces for networking, dialogue, and visibility. Today, we are gathered in Saint-Nazaire to affirm that we, private and public stakeholders in the French sector, are ready. We are ready to take on the challenges for the development of the wind propulsion sector and enable France to become a global leader.

Join us!





CONFERENCE REPORT

INTRODUCTION

By Cécile PETIDENT, animator



To begin, here are some key figures as a reminder:

« In March 2023, the IPCC made it clear that the Earth's temperature will have increased by **+1.5°C** in 2023 (or just before). If we do not make more changes, by the end of the century, it will have increased by **+3.2°C** compared to the pre-industrial era! So, yes, there is an urgent need to decarbonize our world, our business activities, and particularly transportation.

Today, **90%** of global trade is carried out by maritime transport, which is responsible for **3%** of global CO2 emissions. If nothing changes, this figure could rise to **17%** by 2050!

Wind is clean and free. Wind opened up our world, enabling our ancestors to engage in trade, explore new cultures and exchange knowledge and ideas. The use of wind to transport our goods is making a big comeback. The wind propulsion sector is incredibly dynamic, innovative, determined, and represents an obvious response to the climate challenges of our planet. »

Welcome to the 2nd edition of Wind for Goods!



THURSDAY
1
JUNE

OPENING SPEECHES

Claire HUGUES

Vice President of the Regional Council of Pays de la Loire, responsible for maritime affairs

Francky TRICHET

Vice President of Nantes Métropole and City Councillor of Nantes

David SAMZUN

President of Saint-Nazaire Agglomeration (CARENE) and Mayor of Saint-Nazaire

Yann TRICHARD

President of the Nantes Saint-Nazaire Chamber of Commerce and Industry



KEY ISSUES

Wind for Goods is being held in Saint-Nazaire for the second time, and for good reason. The region is particularly fertile and inventive!

The local authorities are fully committed to supporting the wind propulsion industry and the ecological transition.

KEY TAKEAWAYS

1

Local authorities' interest in the wind energy sector and the Wind for Goods event

For the public authorities, it was not just important to attend and support the Wind for Goods event, it was self-evident! «We can only meet the challenges of energy transition and climate change through industry and innovation,» says David Samzun. The carbon-based economy is no longer sustainable. Together, we must find a new model.

How can we decarbonize the economy, especially maritime transport? It is a crucial issue for the entire region. And to address it, «we are fortunate to have businesses here that are committed to the wind propulsion sector and are increasing its visibility internationally: manufacturing companies, research laboratories, startups, institutions like Wind Ship that support these emerging initiatives, etc.,» adds Francky Trichet. «France also has the opportunity to assert its national sovereignty in this regard.»

Elected officials and businesses are therefore mobilizing to support and develop this sector that will help decarbonize maritime transport and advance the ecological transition. And everyone knows it is urgent.

2 What can local authorities do to support the wind propulsion sector?

Concretely, what can local authorities do to support the wind propulsion sector?

Facilitate long-term access to land:

« We must make our land resources, which are becoming increasingly scarce, available to the industry: there must be space to accommodate and grow these companies in the wind propulsion sector,» indicates David Samzun.

Provide infrastructure: including a port, public transportation, housing, etc.

Support research: by supporting researchers and engineers in their efforts to develop technical solutions. According to Francky Trichet, when the government invests in the pioneering, one-of-a-kind French wind propulsion sector, «they are investing in the future and ensuring that we maintain a competitive edge.»

Support the projects financially: «For example, help production units get started in the region,» explains Claire Hugues.

Create connections between companies in the sector and potential investors.

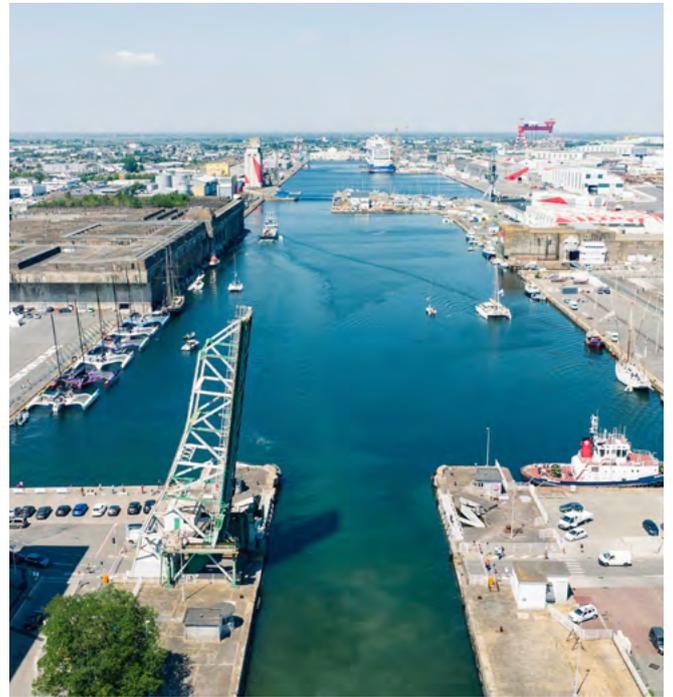
Promote innovation: that is, «support the innovation projects of businesses, through competitiveness clusters and the Meet2050 Institute (Maritime Eco-Energy Transition towards 2050), whose future headquarters should soon be built in Pays de la Loire,» adds Claire Hugues.

Support businesses internationally:

«For example, by sending business groups to Seattle, Scandinavia, or Asia,» says Claire Hugues.

Coordinate and collaborate: «For businesses in this sector, we know that project financing is already a key issue. On this point, our institutions can support and guide them towards appropriate funding programs,» explains Yann Trichard.

Exert influence at the European level: «Our role also involves lobbying at the European level for better regulations and financing schemes to support businesses in the wind propulsion sector, and requesting a dedicated program from our European institutions,» explains Francky Trichet.



3 Local authorities committed to addressing the climate emergency:

«In light of the climate emergency, our mantra is go faster,» says Claire Hugues. The message is clear! Immediate action is needed. Every day, public authorities demonstrate their commitment to various initiatives such as designating land for environmental preservation, developing sustainable transportation options like new bus lines in Saint-Nazaire, mitigating heat islands in cities, promoting local production and short supply chains through networks like Neopolia in Pays de la Loire, and implementing waste reduction measures. Additionally, energy independence is a key priority in response to the energy crisis and the need to decarbonize the economy. Efforts include the installation of new district heating networks and the creation in January of Estuaire Énergies, a cooperative company established by the Nantes Saint-Nazaire Chamber of Commerce and Industry. This initiative aims to enable companies to collaborate on energy purchases and regain control over their energy consumption and costs. **The overall goal is to accelerate progress while minimizing reliance on fossil fuels.**

OPENING LECTURE

What the glaciers tell us

Dr. Heïdi SEVESTRE

Glaciologist and member of The Explorers Club



THE OBJECTIVE

To understand that everywhere in the world, even here in Saint-Nazaire, our future depends on that of the glaciers and that we can still save them!

THE GUEST OF HONOR

Born in a small village in Haute-Savoie, Heïdi Sevestre leads several expeditions to glaciers around the world every year. She received the first Shackleton Medal in 2022 for the protection of polar regions. Passionate about scientific communication, she gives numerous lectures and also presents scientific documentaries on France 5 and Ushuaïa TV.

KEY TAKEAWAYS

1 Glaciers on the verge of extinction

The first glacier that Heïdi Sevestre studied was the Trient Glacier in the Swiss Alps. With supporting photos, the glaciologist shows how it has shrunk to a mere remnant today. This glacier is «on the verge of extinction,» like the glaciers in the French Alps that will disappear by the end of the century if we continue on the same carbon-based trajectory. «And when these glaciers melt, they disrupt entire ecosystems and even attack us directly!»

2 Why do we still need glaciers?

In France, glaciers keep our ecosystem cool by reflecting the sun's rays. Additionally, they provide numerous services during the summer when they melt. Their freshwater cools and quenches our thirst, serves sanitation needs, generates electricity, cools nuclear power plants, and irrigates crops. «We still need glaciers today!» It's not just the glaciers in the Alps that matter; there are also glaciers in the Himalayas, the Andes, Alaska, and other regions worldwide. Approximately 2.5 billion people globally depend

on freshwater from glaciers. But why should we in Saint-Nazaire be concerned about the glaciers in the Himalayas? «Because they support cotton and rice production in India and China. In the end, no matter where we are, we are all connected to these glaciers through the Global Supply Chain!»

3 The reality of climate change in Svalbard

Heïdi Sevestre resides a large part of the year in Svalbard, a Norwegian archipelago located in the Arctic Ocean, about 1,000 km from the North Pole. Known for its global seed vault, Svalbard is a Frozen realm dominated by ice and permafrost. The problem is that «climate change is attacking Svalbard like never before. It has become the fastest-warming place on Earth, heating six to eight times faster than the global average!» As proof, the temperature has already risen by 4 to 5°C, resulting in landslides, winter rains and avalanches in the middle of the city.

4

Why is Svalbard warming up so fast?

It's because the shrinking sea ice can no longer fulfil its crucial role as a giant air conditioner. Sea ice helps keep the Arctic cold and the winds stable. However, it has shrunk by 40% in the past 40 years.

The polar ice caps in Greenland and Antarctica are also melting. And the more fossil fuels we burn, the faster the ice caps melt. Everything is accelerating at a staggering pace. Every year, Greenland releases 270,000 trillion tonnes of ice into the ocean, while Antarctica contributes 151,000 trillion tonnes. If Greenland were to melt entirely, sea levels would rise by 6 to 7 meters, and for Antarctica, it would be 58 meters!

Additionally, the thawing permafrost, which covers 25% of the northern hemisphere, exacerbates climate change by releasing greenhouse gases (GHGs). «It's a vicious cycle. Today, permafrost regions emit as much GHGs as Japan. If the Earth's temperature increases by 1.5°C, they will emit as much GHGs as India for approximately 150 to 200 years.»

5

How melting sea ice affects the oceans:

The melting of sea ice causes severe wind instability between the northern hemisphere and Antarctica (called the «Polar Vortex» in the US), leading to extreme weather events. The warming of polar regions also impedes ocean currents. The Gulf Stream, in particular, may slow down and requires close monitoring. Moreover, as polar oceans absorb more CO₂, they become more acidic, preventing the formation of gastropods and disrupting the marine food chain.

6

Taking action to avoid reaching climate tipping points

«The climate tipping point for Greenland and West Antarctica will be reached if the Earth's temperature increases by 1.5 to 1.7°C.» However, if nothing changes, it will increase by 3.2°C by the end of the century. Our greenhouse gas emissions must decrease dramatically, far beyond the climate commitments made by countries! Seen from Saint-Nazaire, the polar regions and the actions of the wind propulsion sector are closely connected: «Decarbonizing the maritime sector will help us stay below the tipping point.»

CONCLUSION

«Without a doubt, future generations will judge us based on the decisions we make today. We have a choice: continue accelerating climate disruption and investing in fossil fuels or take action to stop this runaway train.»





THURSDAY

1

JUNE

MASTERCLASS

Advancements in wind propulsion for ships.

Lise DETRIMONT

General Delegate of the association Wind Ship, established in 2019 to accelerate the ecological transition of the maritime sector, based in France and Belgium.

Gavin ALLWRIGHT

General Delegate of the association Wind Ship, established in 2019 to accelerate the ecological transition of the maritime sector, based in France and Belgium.



KEY ISSUES

An overview of existing solutions and advances in the wind propulsion sector.

KEY TAKEAWAYS

1 A thriving wind propulsion sector

«At the first edition of Wind for Goods in 2021, there were 10 to 15 large wind-assisted cargo ships. Today, there are 25. This number is expected to double each year and reach 10,000 vessels by 2030,» says Lisa Detrimont. Everything is accelerating! A significant signal of this momentum? «We are tackling container ships.» A French consortium of shippers has ordered five wind-assisted container ships from Zéphyr & Borée. Other notable advancements include the construction of Grain de Sail's second ship (50m), the first wind-powered ro-ro ship by Neoline, two wind-powered cargo ships by TOWT, and the launch of the wind-powered cargo ship Canopée. Gavin Allwright also sees the same enthusiasm internationally, whether in Asia (particularly in Japan and Korea), Europe, the United Kingdom or the United States.



2 Technological maturity, but not yet commercial viability

The industry has reached a certain technological maturity. The challenge now lies in achieving commercial viability. The goal is to «transition from prototypes to initial orders, then to the industrial scale production of the first series to bring costs down. It's always a tricky phase because it's the moment when the plant needs to be built, and investments in production tools need to be made,» explains Lisa Detrimont. Therefore, it is crucial to find financing schemes to overcome these challenges and accelerate progress.

3 Regulations not yet up to par

Should regulations be more stringent to accelerate progress? According to Gavin Allwright, it's mainly about «an entire ecosystem moving forward simultaneously,» with public policies, regulatory frameworks discouraging fossil fuels and promoting the use of green fuels, appropriate funding, and special insurance contracts. «Regulation is the final step because technology needs to advance first.» An excellent example is the establishment of an indicator at the European level to measure the carbon footprint of the fuel used on board ships. «In this regulation, wind power was not considered. We managed to obtain a reward factor, but it is still not enough. We still have work to do!» adds Lise Detrimont.

4 The major challenge of scaling up the industry

According to Gavin Allwright, scaling up the wind propulsion sector is crucial; it must not remain a niche market! Glaciologist Heidi Sevestre mentioned that we are dangerously close to the tipping points. «We currently have 24 wind-powered ships.

It's not enough. There are 50,000 merchant vessels that, with their 11 billion tonnes of cargo on board, produce about a billion tonnes of carbon dioxide pollution every year, a steep climate cost for the planet. We need to change our mindset!»

5 The positive impact of wind propulsion systems on the planet

Wind propulsion on ships equipped with kites, rotors, rigid wing sails, etc. reduces fuel consumption by approximately 5 to 20%. The Neoline project, a wind-powered ro-ro ship, aims for a 90% reduction in fuel consumption and associated emissions. «But let's not forget that maritime transport also has an impact on the water surface, not to mention noise pollution, soot, and smoke,» says Gavin Allwright. The latest key innovation in decarbonization: «In France, ambitious new shipowners are also addressing pre- and post-delivery phases, which produce large amounts of emissions, by bringing their ships as close as possible to delivery and production areas,» explains Lise Detrimont. It's a very exciting change in practices!



Ships, sails, goods... What if it were just common sense?

Yves PARLIER

Navigator and engineer, President and Founder of Beyond the Sea (kite traction for vessels)

Nelly GRASSIN

Head of Quality and Technical Affairs, Environment, Safety, and Security at Armateurs de France

Jérôme NAVARRO

CEO of Compagnie Maritime Nantaise (industrial maritime transport)

Mikaël COROLLER

Administrator at Biocoop, a cooperative engaged with Arcadie for wind-powered spice transport

Louise CHOPINET

Operational Director at Windcoop (the first wind-powered maritime transport cooperative, established in May 2022 by Arcadie, Zéphyr & Borée and Enercoop, based in Lorient)



KEY ISSUES

Providing evidence and demonstrating the efficiency of wind-powered transport.

KEY TAKEAWAYS

1 Wind, an obvious solution for everyone?

According to Yves Parlier, given the urgency to move away from fossil fuels that emit greenhouse gases, «wind, which was already used by Homo Sapiens 50,000 years ago, is the obvious solution: it will once again become a major energy source for ship propulsion.»

However, it's not that simple for shipowners. Nelly Grassin believes that decarbonization is the obvious solution instead. While many shipowners are venturing into wind-powered solutions, it is often driven by regulatory requirements (e.g., the International Maritime Organization's goal of reducing GHG emissions by at least 50% by 2050).

Similarly, for Jérôme Navarro, «it's not that obvious.» Changing ships involves a significant investment, and «we mustn't choose the wrong technology!» Hence, his interest in monitoring and testing various

innovations at sea (including Michelin's Wisamo wing sail). «What we're interested in is decarbonization. It's not necessarily about using sails. That's just one option among others.»

Nelly Grassin goes on to point out the risk involved for shipowners: «The technologies are mature, but scaling up requires huge investments from shipowners, while there is still very little feedback on the robustness and efficiency of these solutions. The Canopée wind-powered ro-ro ship by Zéphyr et Borée won't be equipped with its wing sails until July.





2 Consumers care about carbon footprints

Is wind power also the obvious solution for cargo shippers? There is certainly a lot of activity going on, as demonstrated by the recent calls for tenders issued by a number of coalitions.

Let's take a closer look at Biocoop, which has been conscientious about the carbon footprint of its stores for the past 15-20 years. After putting an end to the use of air transport, optimizing truck loading, and promoting local products, this activist cooperative is now partnering with Arcadie to facilitate wind-powered transport of coffee, spices, and chocolate. According to Mikaël Coroller, «consumers are the key. The carbon impact of the final product can be a significant factor in purchasing decisions, just as organic products were a few years ago.» Ultimately, the obvious solution may be dictated by consumer activists.

3 Wind-powered solutions and cost stability

Yves Parlier confirms the profitability of Beyond the Sea's kites once they are scaled up to industrial production levels. These kite sails are projected to save shipowners around 20% of their fuel consumption,

a notable achievement considering the potential introduction of new carbon taxes and the higher cost of biofuels compared to heavy fuel oil.

Windcoop is willing to pay the higher cost associated with a more resilient mode of transportation, which offers better stability and long-term predictability, as it is independent of oil price fluctuations.

4 Strategic decision-making by shipowners

According to Jérôme Navarro, shipowners' choices are not solely driven by financial considerations. «The maritime profession is having trouble recruiting. To motivate and give a sense of pride to our sailors, we must be activists as well as shipowners. We mustn't forget that as entrepreneurs we need to demonstrate our capacity for innovation and change.»

Nevertheless, we are now facing a moment of truth, where shipowners will need to make choices. Jérôme Navarro adds, «While wind power may not always be the obvious solution for the operational phase of existing ships, it is a fundamental factor, and sometimes even a requirement for certain clients, when designing and engineering future ships.»

Is the wind propulsion sector a risky business for financial backers?

Corinne FOURNIER

Blue Growth Project Manager at Otoktone, the investment bank of Banque Populaire Grand Ouest

Marine LEDUC-ESVELIN

Manager West Region at Howden Marine (an insurance brokerage company specializing in maritime and transportation sectors)

Karine MERERE

Executive Director of Ademe Investissement

Thomas DAUGER

Hull & Machinery Underwriter at AXA XL

Olivier RAYBAUD

Director of Blue Ocean Fund at Swen Capital Partners (a leading provider of sustainable private equity)

Jean ZANUTTINI

President of Neoline, a shipowner that launched the construction of its first 136m wind-powered cargo ship for transatlantic navigation last January



KEY ISSUES

Given the limited experience we have with new wind propulsion technologies, what stance do financial backers and insurers take? What are their expectations? What are the obstacles? How can the obstacles be overcome?

KEY TAKEAWAYS

1 The concept of risk from the perspective of financial backers and insurers

Ademe Investissement, with a budget of 400 million euros for investments in innovative companies for energy transition ranging from 5 to 40 million, focuses on risky projects or those perceived as such. «However, European regulations require us to act as informed investors. This means we seek economic and financial profitability and conduct risk analyses just like private investors,» explains Karine Merere. The risks they take are carefully assessed and considered reasonable. At Swen Capital Partners, specialized in Series A investments, which involve proven technologies with demonstrated market interest, the risk is also considered reasonable. The same mindset applies to Banque Populaire: «Risk and banking are somewhat contradictory,» says Corinne Fournier. Banks only lend to projects that seem a safe bet,

and they feel more secure when investors are involved. On the other hand, for Howden Marine, risk is an integral part of the brokerage business.



2 More concrete evidence needed

Since the first edition of Wind for Goods, wind propulsion has made significant progress. «Several projects that were in the 3D projection stage are now under construction... and in two years, they will be here!» enthuses Jean Zanuttini. Investing in wind propulsion seems less unusual today than yesterday, but there is still a long way to go to gain the trust of financial backers and insurers. «Once several boats have completed voyages, it will no longer be an issue,» says Corinne Fournier. Meanwhile, the maritime industry appears cautious and favours solutions that have already been proven to work. In contrast, Swen Capital Partners tries to step in at the right moment, when initial tests are providing conclusive data, to open up markets and support the most promising technologies with investments ranging from 1 to 6 million euros.



3 More and more insurers

In the past year, new insurers have entered the scene. Marine Leduc-Esvelin notes that «decarbonization has become unexpectedly popular: many insurers are gradually moving away from fossil fuels in favour of greener energy.» This is a good thing, because risks often need to be shared among multiple insurers, usually between 10 to 15. And everyone knows that without insurance, you can't get financing!

4 Reverse risk assessment

What is AXA XL's method for assessing risks? «Risk is our business, we know how to manage it. What we don't like is the unknown. And what is novel in these boats, different from what we usually insure (engines, hulls), is the sail and how it will react under real conditions. This way, we can start building a risk assessment.» Thomas Dager, however, looks at things in a more positive light, focusing on the risk factors that are avoided in wind-powered ships: «For example, the engine rooms will be cleaner. And as we know, engine room fires represent the most costly and frequent risk in ships powered by heavy fuel oil.» Karine Merere concludes: «Yes, there are risks. But if we sequence them and address them one by one, there are solutions for each one. The potential of the wind propulsion sector is so great that it's worth looking into the matter. If we wait for the ships to be in the water before financing them, we'll miss the boat!»



How did shipowner Neoline manage to inspire investor confidence?

Ademe Investissement joined Neoline's adventure with their first wind-powered cargo ship. Why? «Because it's a showcase project on an industrial scale that will incorporate several innovative French technological solutions,» says Karine Merere. Another key factor that influenced the decision was: «Neoline managed to bring together an entire ecosystem of stakeholders: suppliers, a leading industrial partner (CGA-CGM), committed shippers (Manitou, Bénéteau, Michelin, etc.)» However, it took Neoline 12 years to get other businesses on board and successfully launch the construction of their first vessel! According to Jean Zanuttini, the current context and the visible evidence of global warming have undoubtedly accelerated the engagement and risk-taking of both public investors (Ademe Investissement, BPI, Caisse des Dépôts, Pays de la Loire region, etc.) and private investors (CGA-CGM, Corsica Ferries, etc.). He also emphasizes the importance of the support of public partners: «Without them, this project would not exist!»

When will there be a national/European strategy for the deployment of the wind propulsion sector?

Cristina ALEIXANDRI
Co-founder of Bound4blue

Catherine CHABAUD
Member of the European Parliament
and sailor

Frédéric RAVILLY
Regional Delegate of Pôle Mer Bretagne Atlantique

Camille VALÉRO
Legal affairs manager at the Institute of Maritime
Economics (ISEMAR)



KEY ISSUES

For now, France has a lead in wind propulsion technologies. However, to maintain this leadership position, the sector needs a clear national or European strategy to support and coordinate its development. Without political, financial, and industrial support, we could very well be overtaken by international competitors.

KEY TAKEAWAYS

1 Seize opportunities arising from stricter decarbonization regulations:

In light of the climate emergency, regulations are becoming increasingly stringent for decarbonizing the maritime sector.

Regulations, a source of opportunities:

- The EU Green Deal, which aims for carbon neutrality by 2050, and the ETS
- The European carbon market, which will extend to maritime transport for vessels over 5,000 tonnes starting in 2027.

Competition from alternatives to heavy fuel oil:

While the regulatory framework sets objectives, it does not specify how to achieve them! «Regarding the energy mix, the EU does not need to intervene; the market will make the decision. However, certain alternative solution providers, particularly in hydrogen and biofuels, have a strong lobbying presence,» explains Camille Valéro.



2 Make the wind propulsion sector more visible among decarbonized alternatives:

While these regulations are an opportunity, we need to make it loud and clear that wind propulsion is indeed a viable solution for decarbonization!

Convincing the highest authorities: For years, Catherine Chabaud has been working diligently. «We need to convince the EU that alternative fuels will not be enough to achieve carbon neutrality by 2050. The message is starting to get across. As evidence, I point to the FuelEU Maritime Initiative* creating a reward factor for the use of wind propulsion.» Wind propulsion technologies are also beginning to emerge on a global level: «This is one of the topics that will be addressed in February 2024 at the MEPC of the IMO*,» adds Catherine Chabaud. At the national level, DGAMPA* has produced a roadmap for decarbonization, and wind propulsion is definitely in the mix. «Furthermore, the Meet2050* program should provide good prospects for the sector.»

100% decarbonized energy: In terms of visibility, wind propulsion holds a significant advantage: «We can proudly state that wind propulsion is a Pure Zero-Emissions Energy Source. No other transportation sector can claim that!» exclaims Gavin Allwright from Windship, present in the room.

Mature technologies: «If we compare all the 'low-carbon' technologies, such as hydrogen-based fuels, e-fuels, or biofuels, we see that wind propulsion is the most mature technology today. «We already have demonstrators, and it has been proven to work!» adds Frédéric Ravilly.

3 Understanding what funding is available:

Funding exists, even if it is not directly earmarked for wind propulsion. It's important to identify and explore all the potential financing schemes for the wind propulsion sector.

- «In addition to private funding, Bound4blue has managed to obtain funding from the European fishing fund, EASME*, the EIC Accelerator*, and the Innovation Fund,» says Cristina Aleixandri.

- «We are fortunate to have several wind propulsion projects funded within the framework of the Corimer Call for Expression of Interest,» says Frédéric Ravilly.

- Businesses in the wind propulsion sector can also benefit from programs such as the EU's calls for projects under the Horizon Europe* program and its Starfish 2030 mission.



4 The wind propulsion sector, an opportunity for local reindustrialization:

After the Covid crisis and the war in Ukraine, the focus is on relocating industry, especially around green energy, all over the world.

Global protectionism and European response:

«The international context is marked by protectionism and massive subsidies. The USA has implemented the Inflation Reduction Act, and China is pursuing a highly protectionist policy. In response, the EU has introduced the Net Zero Industry Act, which directs investments towards green industries. Unfortunately, wind propulsion is not yet included in this basket,» laments Camille Valéro.

Create a European Green Maritime Alliance?

«It's a shame to see Zéphyr & Borée building boats in Korea, Neoline in Turkey, and Grain de Sail in Ho Chi Minh! We are missing out on a huge opportunity to regain European industrial sovereignty! It is time to cooperate within the EU to propose solutions,» insists Catherine Chabaud.

Propose ambitious national and/or European projects:

««There are several thousand new boats to be built within the next ten years to achieve the energy transition in the maritime sector. However, in France, we no longer have the capacity to build mid-sized vessels. We need to do better on this issue and present ambitious national and/or European projects. Our local businesses, particularly with organizations like Neopolia, will undoubtedly be able to lead them,» promises Frédéric Ravilly.

CONCLUSION

«The wind propulsion sector still faces too many difficulties in organizing collectively. Unlike the aerospace industry, there is no major contractor leading the way with everyone else following. It's a shame because it makes it hard to gain visibility and speak with a single voice,» concludes Frédéric Ravilly.

MEPC* : Marine Environment Protection Committee, part of the International Maritime Organization

Horizon Europe* : European program for research and innovation

DGAMPA* : General Directorate for Maritime Affairs, Fisheries, and Aquaculture

Corimer* : Orientation Council for Research and Innovation in Maritime Industries

Meet2050* : Lean organization whose function is to define and manage the "Zero emission vessels and ports" program

EASME* : Executive Agency for Small and Medium-sized Enterprises of the European Union

EIC Accélérateur* : Funding programme under Horizon Europe

Innovation Fund* : European fund for low-carbon technologies

Discussion on the wind propulsion sector, consumption patterns, and the call to slow things down

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Founder and CEO of Grain de Sail

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CEO of Neoline



KEY ISSUES

In our rapidly changing world impacted by the climate emergency, it is crucial to decarbonize maritime transport. However, to do so we need to rethink our consumption patterns and development models. What role can the wind propulsion sector play in raising awareness about these issues and inventing new models?



KEY TAKEAWAYS

1 Embracing innovative approaches

Bringing coherence and purpose to the project:

Olivier Barreau: «Grain de Sail has been bold in disrupting traditional models and adopting a holistic approach to give our project coherence and purpose. We have become an integrated company, in control of all aspects of our operations. Environmental considerations have been paramount, including optimized production plants, sustainable agroforestry products, highly insulated holds, an aluminium hull for Grain de Sail 2 to reduce weight, and hydrogenerators and solar panels for onboard electricity. In addition, we prioritize employee satisfaction by offering employee shareholding and implementing an ethical salary policy.»

A 12-year journey!

Jean Zanuttini: «Our project was conceived 12 years ago, and it required extensive work, motivation, and ambition to gain the support of various stakeholders such as shipyards, shippers, and financial backers.»

2 Demonstrating the effectiveness of wind-powered transport solutions:

Continuous improvement in crossing times:

Olivier Barreau: «At first, Grain de Sail 1 took 26 days for a crossing, but now it only takes 21 days. Advancements in routing have significantly contributed to the efficiency of wind-powered transport. With Grain de Sail 2, we expect to go even faster, completing a crossing in just 15 days!»

Wind, an inexhaustible resource...

Jean Zanuttini: «By utilizing wind propulsion on our vessels, we expect to reduce fuel consumption by more than 80%. The wind offers a unique advantage in that we can «negotiate» with it, or in other words navigate to where it is most favourable. Unlike other resources, wind is an inexhaustible energy source. If there is no wind today, there will be wind tomorrow. No other resource has this capability!»

... 100% renewable and free:

Olivier Barreau: «The wind is a renewable energy source that is free, abundant, and 100% renewable. No other alternative, such as 'biofuels,' can match its production efficiency.»

3 Continuing to improve the performance of wind-powered ships

Scaling up to industrial production:

Jean Zanuttini: «We are just scratching the surface of research and development in this field. Technological advancements have already shown tremendous improvements. It is impossible to predict how far we can push the boundaries.»

Reaching the critical ship size is not the primary challenge:

Olivier Barreau: «With Grain de Sail 2, we have reached the critical size for a 100% decarbonized cargo sailboat. However, the real challenge lies not in ship size but in addressing the level of global maritime traffic, which is totally out of control.»

4 Slowing down consumption... and maritime transport:

Embracing conservation and rethinking consumption patterns:

Olivier Barreau: «Without rethinking the global economic engine, we are headed for disaster! It is vital to embrace conservation efforts and rethink our consumption patterns. For instance, at Grain de Sail, we refuse to transport fast fashion products.»

Balancing performance and environmental impact:

Jean Zanuttini: «Conservation is a fundamental element of our project. This involves finding a balance between ship capacity, speed, and minimizing environmental pressure.»



News from Grain de Sail

Grain de Sail 2 ready to sail in 2024:

The cargo sailboat was launched in May and will be rigged in Lorient in September, with sea trials scheduled for the end of the year. In 2024, it will complete five transatlantic crossings. Three additional cargo sailboats will be under construction by the end of 2023.

Scaling up:

Grain de Sail 2 will measure 52 meters (compared to 24 meters for Grain de Sail 1). It will increase cargo capacity tenfold and transport 100% of Grain de Sail's coffee and cocoa requirements (compared to 53% for Grain de Sail 1).

The creation of Grain de Sail Logistics:

Offers a decarbonized transport solution open to other companies. We provide transportation services that also include delivery to the ship. jusqu'au bateau.

5 Is it up to the wind propulsion sector to change people's behaviours?

Leading by example:

Jean Zanuttini: «We are 11 co-founders with strong convictions about what progress in maritime transport means. However, reducing consumption goes beyond our role as shipowners; it requires collective decision-making among individuals. But we can lead by example and develop coherent, reasonable, and efficient solutions for clean and sustainable transportation.»

Showing a different way of doing things:

Olivier Barreau: «I truly believe that our ships will make engine-powered ships obsolete. In 30 years, children looking at pictures from today's era will be surprised not to see sails on all the ships.»



News from Neoline

Production of the first ship to begin in November: Financing was secured at the end of 2022, and the design and engineering phase will conclude in September 2023. RMK Marine will start manufacturing the first ship in early November for commissioning in June 2025.

An extra-large ship primarily propelled by wind: This roll-on/roll-off ship will measure 136 meters. It will connect Saint-Nazaire to Baltimore, via Halifax and Saint-Pierre-et-Miquelon.

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- > [LIST OF EXHIBITORS](#)

- > [PRESS COVERAGE](#)
- > [PRESS RELEASE ON THE STUDY](#) «Developing Wind-Powered Transport, a Promising Sector in the Effort to Decarbonize Maritime Transport»
- > [PRESS RELEASE](#) «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»

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LET'S STAY IN TOUCH!

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