

# Wind-Assisted Propulsion Market - A Global and Regional Analysis: Focus on Application, Technology, Installation Type, Vessel Type, and Region - Analysis and Forecast, 2023-2032

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## Abstracts

This report will be delivered in 2-3 working days.

### Wind-Assisted Propulsion Market: Industry Overview

Wind-assisted propulsion is classified within energy efficiency indices as an "energy harvesting" technology, given its utilization of wind to directly augment thrust. Nevertheless, operational costs remain subject to weather-related uncertainties. However, the advantages of sailing can be amplified through the application of weather routing algorithms, which can chart optimal routes tailored to specific vessels. Nonetheless, the widespread adoption of wind-assisted propulsion systems (WAPSs) faces several hurdles, including the imperative need for reliable and efficient technologies capable of functioning effectively across diverse environmental conditions.

While there is a prospect for wind propulsion systems to become more cost-effective in the future, these presently represent substantial investments. The absence of a standardized approach to designing, constructing, and integrating wind-assisted propulsion systems on board vessels makes it challenging to attain the economies of scale and consistent production required to reduce costs. Wind-assisted propulsion systems is expected to boom over the next decade as it acts as a substitute to fuel types such as green methanol, biofuels, green hydrogen and others.

### Market Lifecycle Stage

The wind-assisted propulsion is in its initial stage of commercialization, while some of the technologies, such as hull form, are in their developing stage. The ecosystem of the wind-assisted propulsion market comprises wind-assisted propulsion manufacturers, technology providers, ship-building companies, and shipowners. The market is still developing, with Europe at the forefront, followed by other regions such as Asia-Pacific and Japan, China, Rest-of-the-World, North America, and the U.K.

## Industrial Impact

Sea shipping is a cornerstone of global trade and the primary mode for transporting goods across the world. However, the maritime industry has long been recognized as a significant contributor to greenhouse gas (GHG) emissions, largely due to the use of fossil fuels for propulsion. In light of the urgent need to combat climate change and reduce carbon emissions, the maritime sector is experiencing a profound transformation. Wind energy, harnessed through innovative technologies such as kite propulsion systems and other wind-assisted solutions, is poised to play a pivotal role in helping the marine shipping industry achieve its ambitious goals for GHG emission reduction. By tapping into the inexhaustible and clean power of the wind, the maritime sector can significantly enhance its sustainability and reduce its carbon footprint. This transition aligns with global efforts to create a more environmentally responsible and sustainable future, making wind energy a crucial ally in the journey toward greener and more efficient maritime transportation.

## Market Segmentation:

### Segmentation 1: by Application

Cargo Ships

Tankers

Car Carriers/Ro-Ro Vessels

Container Ships

General Cargo Vessels

Passenger Ships

Fishing Vessels

Bulk Carriers

Wind-assisted propulsion is expected to have a high penetration in cargo ships, among other applications, over the forecast period 2023-2032, owing to the increased initiatives by the maritime industry related to decarbonization.

### Segmentation 2: by Technology

Towing Kites

Sails

Soft-Wing Sails

Hard-Wing Sails

Flettner Rotors

Suction Wings

Others

Based on technology, the wind-assisted propulsion market is estimated to be led by the sails segment during the forecast period of 2023-2032.

### Segmentation 3: by Installation Type

Retrofit

New Installation

Based on installation type, the wind-assisted propulsion market was led by the retrofit segment in 2022.

#### Segmentation 4: by Vessel Type

Wind-Assisted Motor Vessels

Purely Wind Vessels

Based on vessel type, the wind-assisted propulsion market is estimated to be led by the wind-assisted motor vessels segment during the forecast period of 2023-2032.

#### Segmentation 5: by Region

North America

Europe - Germany, Greece, France, Norway, Finland, and Rest-of-Europe

China

U.K.

Asia-Pacific and Japan - Japan, South Korea, Singapore, and Rest-of-Asia-Pacific and Japan

Rest-of-the-World

In the global wind-assisted propulsion market, Asia-Pacific and Japan and Europe are anticipated to gain traction in terms of wind-assisted propulsion production, owing to the increased need for decarbonization in the regions.

#### Recent Developments in the Wind-Assisted Propulsion Market

In May 2022, Econowind and Vertom jointly announced their partnership to equip multiple vessels with wind-assist VentoFoil units by the end of 2022. The initial installations would take place on the general cargo vessels MV Progress and MV Perfect, marking the first fleet order for Econowind.

In April 2021, BAR Technologies and Yara Marine Technologies entered into an exclusive agreement to collaborate on the design and deployment of wind-

assisted propulsion systems for the worldwide shipping sector. Utilizing solid wing sails, this innovative solution is expected to provide the shipping industry with potential fuel efficiency savings of up to 30%.

In June 2021, Alfa Laval and Wallenius revealed their plan to establish a new joint venture with a 50/50 ownership structure. This joint venture, named AlfaWall Oceanbird, would be dedicated to advancing and implementing technology for entirely wind-powered vessel propulsion.

In September 2023, Airbus plans to install new fuel-saving sails for its maritime operations. The company intends to outfit one of its vessels, which it uses for transporting aircraft subassemblies, and is chartered from shipowner Louis Dreyfus Armateurs, with wind-assisted propulsion technology. This technology harnesses wind energy to generate thrust, resulting in significant fuel consumption and CO2 emission savings.

## Demand - Drivers and Limitations

The following are the demand drivers for the wind-assisted propulsion market:

Increasing Need for Reducing GHG Emissions

Rise in Sea Trade

The market is expected to face some limitations due to the following challenges:

High Installation Cost of Wind-Assisted Propulsion Systems

Technical Challenges Resisting the Adoption of Wind-Assisted Propulsion

How can this report add value to an organization?

**Product/Innovation Strategy:** The product segment helps the reader understand the different technologies, installation types, and vessel types involved in the wind-assisted propulsion market. The technology segment has been segmented into towing kites, sails (soft-wing sails, hard-wing sails), flettner rotors, suction wings, and others. The

installation type segment has been segmented into retrofit and new installation. The vessel type segment has been segmented into wind-assisted motor vessels and purely wind vessels. Moreover, the study provides the reader with a detailed understanding of the wind-assisted propulsion market based on application, including cargo ships (tankers, car carriers/ro-ro vessels, container ships, general cargo vessels), passenger ships, fishing vessels, and bulk carriers. The increasing adoption of wind-assisted propulsion in bulk carriers and cargo ships is expected to fuel market growth in the future.

**Growth/Marketing Strategy:** The wind-assisted propulsion market has seen major development by key players operating in the market, such as business expansions, partnerships, collaborations, mergers and acquisitions, and joint ventures. The favored strategy for the companies has been business partnerships to strengthen their position in the wind-assisted propulsion market. For instance, in April 2021, BAR Technologies and Yara Marine Technologies entered into an exclusive agreement to collaborate on the design and deployment of wind-assisted propulsion systems for the worldwide shipping sector. Utilizing solid wing sails, this innovative solution is expected to provide the shipping industry with potential fuel efficiency savings of up to 30%.

**Competitive Strategy:** Key players in the wind-assisted propulsion market analyzed and profiled in the study involve wind-assisted propulsion manufacturers and the overall ecosystem. Moreover, a detailed competitive benchmarking of the players operating in the wind-assisted propulsion market has been done to help the reader understand how players stack against each other, presenting a clear market landscape. Additionally, comprehensive competitive strategies such as partnerships, agreements, acquisitions, and collaborations will aid the reader in understanding the untapped revenue pockets in the market.

### Key Market Players and Competition Synopsis

Wind-assisted propulsion technologies are increasingly garnering recognition within the maritime sector as a strategy to curtail fuel consumption and emissions. These innovative systems leverage wind power to bolster a vessel's propulsion through the generation of aerodynamic forces. These systems hold the promise of substantially enhancing the efficiency of shipping operations and playing a substantial role in the industry's transition to a more sustainable, decarbonized future. Wind, as an abundant, renewable, and emissions-free energy source, offers an invaluable opportunity for progress. Various pioneering sailing technology concepts have either been developed or are currently in the development stage. These encompass sails (hard-wing and soft-

wing sails), flettner rotors, suction wings, and towing kites, among others. In 2022, sails led the global wind-assisted propulsion market and are further expected to gain traction over the forecast period with increased installations.

Some of the prominent producers of wind-assisted propulsion are:

Company Type 1 (by Technology): Towing Kites

SkySails Marine

Company Type 2 (by Technology): Hard-Wing Sails

Eco Marine Power Co. Ltd.

GT Green Technologies

OCEANBIRD

Mitsui O.S.K. Lines

Company Type 3 (by Technology): Soft-Wing Sails

Omer Wing-Sail

WingSails Co.

Company Type 4 (by Technology): Flettner Rotors

Anemoi Marine Technologies Ltd.

Norsepower

Company Type 5 (by Technology): Suction Wings

Econowind

bound4blue

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Various other players are involved in the market as well, which has been covered in different sections of the report.



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