

PRESS BOOK
Sept. 2018



SeaWing

THE AUTOMATED
KITE THAT
TOWS SHIPS...



“SeaWing Launch Recommended” pops-up on the control screen. The captain presses ON. Through the bridge window, a large kite, SeaWing, unfolds and rises to the sky. What for? 20% less fuel consumption and 20% less gas emissions.



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> INCREASING FUEL COSTS



\$80.00
\$70.00
\$60.00
\$50.00
\$40.00

“Fuel costs represent as much as 50 to 60% of total ship operating costs”

More than Shipping, Jan. 22, 2018

With the increasing fuel price, shipping companies face an upward pressure on their operating costs. They are urged to reduce their fuel consumption.

WTI crude oil price
source : oilprice.com

> RISING ENVIRONMENTAL REGULATIONS

International authorities are implementing tougher regulations for the maritime sector.

Following The Paris Agreement, the IMO (International Maritime Organization) set in April 2018 the following objective: **40% less CO2 by 2030**. Further measures should be discussed in October to reduce GHG (Green House Gas) emissions which include carbon dioxide (CO2), sulphur dioxide (SOx), nitrogen oxide (NOx) and particulate matter PM emissions.

In its strategic paper, the IMO adds: “The Committee acknowledges that developing and making globally available new energy sources that are safe for ships could be a specific barrier to the implementation of possible measures.”

It further identifies possible short-term actions for the IMO, among which “incentives for first movers to develop and take up new technologies”.

> PEOPLE WANT TO GO GREEN

“Protecting the environment [is] important to 94% of Europeans”

People are increasingly paying attention to their energy consumption. They want to be active in the fight for the environment. Concretely, **“Three-quarters of Europeans are willing to pay a little more for environmentally friendly products.”** (Eurobarometer, 2014). Cargo ship owners are already taking into account these consumer expectations.



2/ THE SEAWING SOLUTION

SeaWing is an automated kite based on parafoil technology used to tow commercial ships.

It operates as an auxiliary to the ship's engines. A simple **on/off switch** launches or recovers the kite. SeaWing unfolds, operates and refolds **autonomously**.

The system automatically collects and analyses in real-time meteorological and oceanic data derived from its environment. It adapts to this

information in order to optimize its performance while ensuring maximum safety.

Additionally, AirSeas **software interface** advises the captain when to use the kite and proposes the **most cost-efficient route** to reach the destination on time using the kite.

COST-CUTTING

REAL-TIME MEASURABLE SAVINGS



20%
FUEL
SAVINGS



20%
CO2
REDUCTION

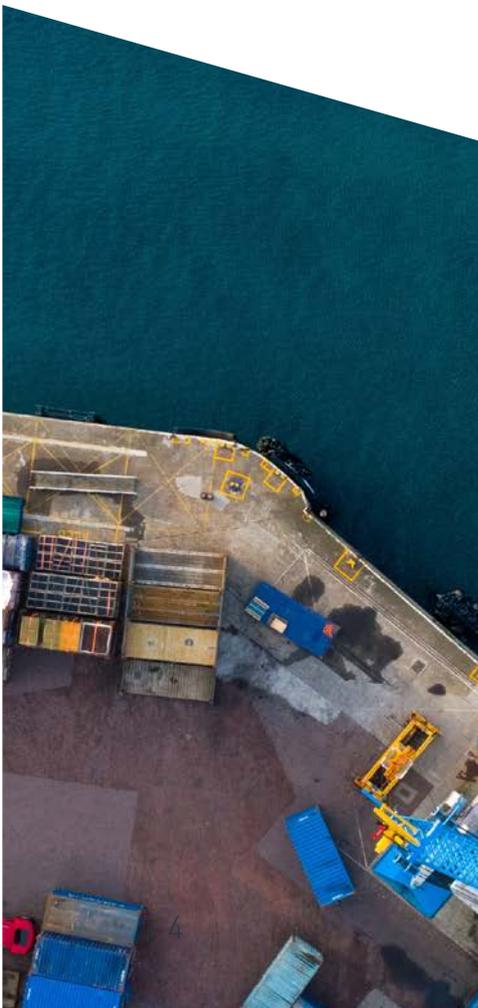
CLEAN

REDUCING SHIPS' CARBON FOOTPRINT

SIMPLE
ON/OFF switch

DEPENDABLE
System Safety Assessment
inherited from Airbus

FUTURE PROOF
Ship Interchangeable
Fuel type independent



3/ BUSINESS PERSPECTIVES

> CUSTOMER LAUNCH

The SeaWing system will be proven by the aeronautics leader Airbus, on its vessel fleet. After validating both the technology demonstrated on their own ship and the 20% expected saving, Airbus has ordered

the first SeaWing system. Furthermore, advanced commercial discussions are under way with several shipowners.

> INDUSTRIAL SCALE

AirSeas has already launched production in its 1,000 sqm facilities. Furthermore, they are about to launch in 2018 the construction of a 12,000 sqm industrial facility capable of producing up to 1,000 units per year.

SeaWing product will be available from 2021 for major shipowners, with the objective of 15% of the world's fleet being equipped with the system.

> EMBLEM FOR ENERGY TRANSITION

Not only does SeaWing deliver concrete emission reductions for the planet, it also has a symbolic dimension: just looking up to the sky, people can see and easily

grasp how SeaWing works to protect the environment. SeaWing is a flag, an emblem of the maritime sector energy transition for the planet.



THE SPIRIT

“Our team was built upon two criteria: determination to bring a game changer for the maritime sector; and expertise of our members, each one mastering its own field of knowledge” explains Vincent Bernatets, AirSeas CEO.

AirSeas engineers are all specialized in aeronautics and naval innovations.

What makes all those individuals work together? Passion and a great team spirit.

“When you love what you do, and when what you do serves a great cause, you can achieve miracles,” Vincent Bernatets concludes.

WHO WE ARE

a COMMITTED team

AirSeas story began in 2016, when its founders realized the need to find green solutions in the shipping industry. They found that their technology could bring great benefits to **protect our oceans and our planet.**

a BOLD start-up

In a few months, they put together their unique Airbus expertise in aerodynamics, flight modeling and wing performance. They created AirSeas to launch a **breakthrough in the maritime transportation sector: SeaWing.**

a STRONG company

AirSeas is now gearing up to an industrial scale, leveraging its massive experience from Airbus: think big to serve large amounts of customers worldwide.



5 / OUR PARTNERS

Airbus, world leader in aeronautics.

Airbus supports AirSeas with exceptional development resources: computing, testing and manufacturing means. Even more, AirSeas conducts its prototyping tests on Airbus' ships. Finally, Airbus is a major shareholder in AirSeas.

Maxsea, world leader of map-making software and maritime routing.

Maxsea has developed a unique routing algorithm and software interface for seafarers. With Maxsea's technology, AirSeas improves the savings from the kite propulsion and offers a user-friendly interface for professional seafarers.

LMG Marin, recognized naval architect, leader in new types of propulsion. AirSeas works with LMG Marin on the ship modeling and the system integration.

Nervures, pioneer in paragliders.

Nervures supports AirSeas with their expertise in highly innovative paragliders to prototype our development wings.



ENSM, the french academy for ship officers.

ENSM supports AirSeas with operational topics, sea regulations, as well as interface ergonomics and training for the crews.

ADEME, the French Environment and Energy Management Agency.

ADEME fosters innovation and competitiveness in favor of ecological solutions and energy transition.

ADEME finances the SeaWing development with €7.2M funding from the French "Investment for the Future" program.



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