

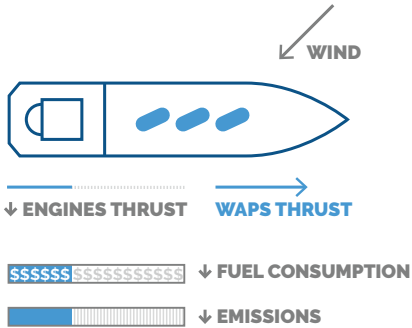
eSAIL®

MAKING SUSTAINABILITY
GOALS PROFITABLE



bound4blue

HOW WAPS WORK

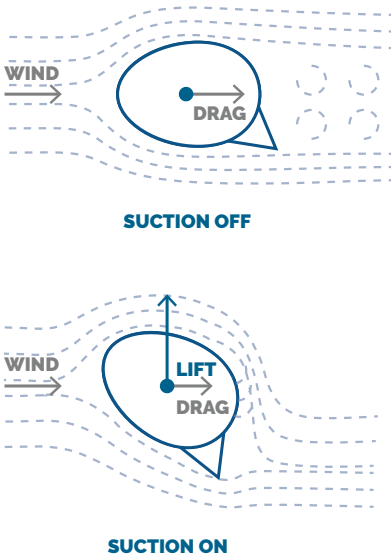


Merchant vessels rely on the thrust delivered by their main engine for propulsion. These engines burn enormous amounts of fuel, resulting in high fuel costs and pollutant emission levels.

Wind-Assisted Propulsion Systems (WAPS) take advantage of the available wind to generate clean forward thrust, reducing the engine thrust required and consequently cutting down fuel consumption and pollutant emissions.

If WAPS are operated effectively to maximise forward thrust under any sailing condition, double-digit percentages in fuel and emission savings can be achieved.

SUCTION SAIL



The eSAIL[®] is a type of WAPS based on active boundary layer control using suction.

When exposed to wind, with the suction turned off, it only produces drag as with any other non-lifting structure.

However, when the suction is activated, a small amount of air is sucked in, which re-adheres the airflow to the sail, generating enormous amounts of lift with low drag.

The eSAIL[®] produces six to seven times more lift than a conventional sail or, in other words, it is able to deliver the same propelling force with six to seven times less surface. All this with minimal power consumption and no mechanical complexity (no inertial loads, vibrations, constant movement, etc.).

When installed on a vessel, bound4blue's eSAIL[®] technology is designed so that its high-lift ability maximises fuel savings in a cost-efficient way.

eSAIL[®]

MAIN PARTS



1 SUCTION FAN

Electric axial fan to control suction.

3 MAIN STRUCTURE & SKIN

Generates aerodynamic shape, contains all elements and provides mechanical strength.

5 ORIENTATION SYSTEM

Slew-bearing and electric motor to adapt eSAIL[®] orientation to any prevailing wind direction.

2 SUCTION AREA

Area specifically designed to avoid flow stall, ensuring high-performance aerodynamics.

4 FLAP

Variable asymmetry of the eSAIL[®] shape, maximising aerodynamic performances.

6 FLANGE DECK CONNECTION

Standard bolted flange connection to vessel deck.

Operation performed autonomously by the eSAIL[®] control system, maximising achieved savings while ensuring safety.

PORTFOLIO – TECHNICAL SPECIFICATIONS

Our eSAIL[®] is a cost-efficient, proven and reliable technology available in three models:

	MODEL 1	MODEL 2	MODEL 3
Width	2.85 m	4.5 m	6 m
Various heights	12 - 17 m	18 - 26 m	24 - 36 m
Example vessels	Fishing vessel, General Cargo, Multipurpose, Feeder	Handysize, MR, LR1, Panamax, Ferry, Ro-Ro	LR, Aframax, Suezmax, Kamsarmax, Capesize, VLCC/OC

Optional: ATEX - Tilting System

REASONS TO INSTALL

With our eSAIL[®], both newly-built and existing vessels can unlock significant fuel savings while complying with international regulations.

REDUCE FUEL COST

Imagine a kind of fuel which is free so there is no price volatility, abundant and infinite, and that doesn't require any onboard storage because it is supplied at point of use.

Look no further, such a fuel is wind.

With bound4blue, ships can harness the power of wind and turn it into profit.

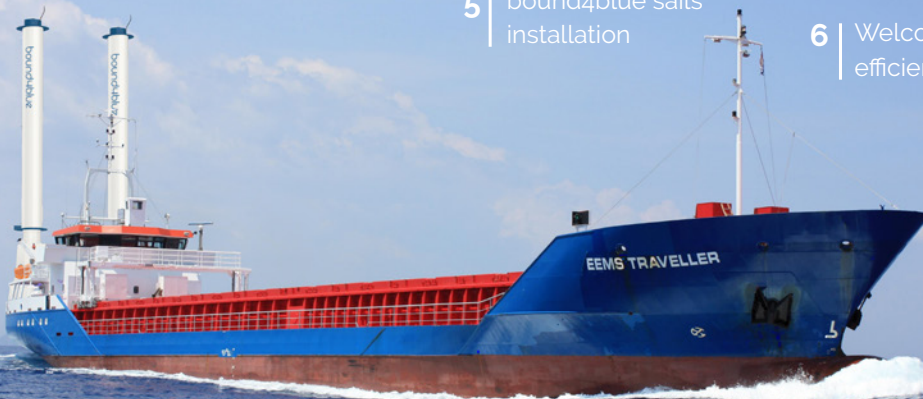
REGULATORY COMPLIANCE

Our eSAIL[®] helps shipowners and ship operators to comply with the International Maritime Organisation (IMO) regulations and the European Union directives focused on reducing the GHG emissions and improving energy efficiency across vessels in a cost-efficient way.

If preferred, there is the possibility to split up the investment according to each year's regulatory compliance targets.

SIMPLE STEPS TOWARDS A BLUE FUTURE

- 1 | Contact and preliminary study
- 2 | Detailed study and selection of optimal sails arrangement
- 3 | Sails installation design and approval
- 4 | Vessel preparation
- 5 | bound4blue sails installation
- 6 | Welcome to blue efficiency



KEEP IN TOUCH

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