



ECONOWIND

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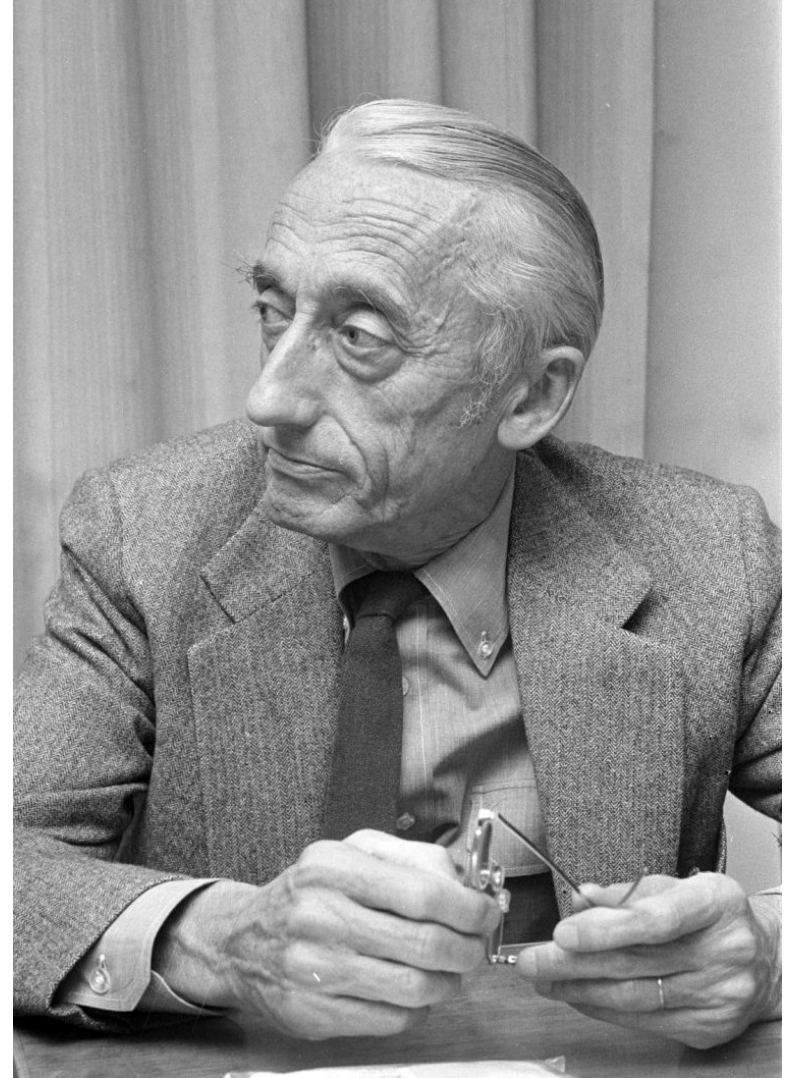
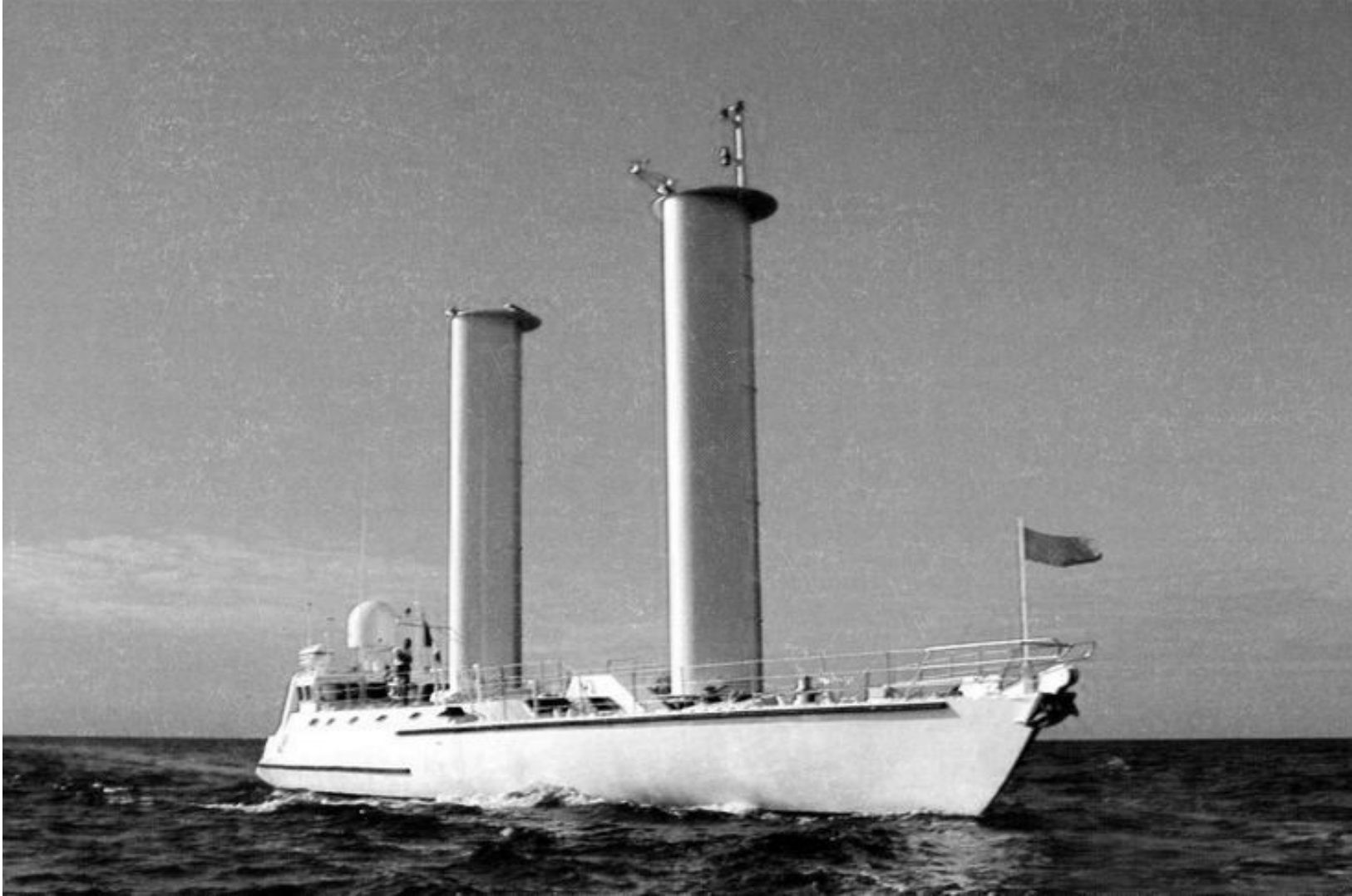
HARNESSING THE POWER OF WIND



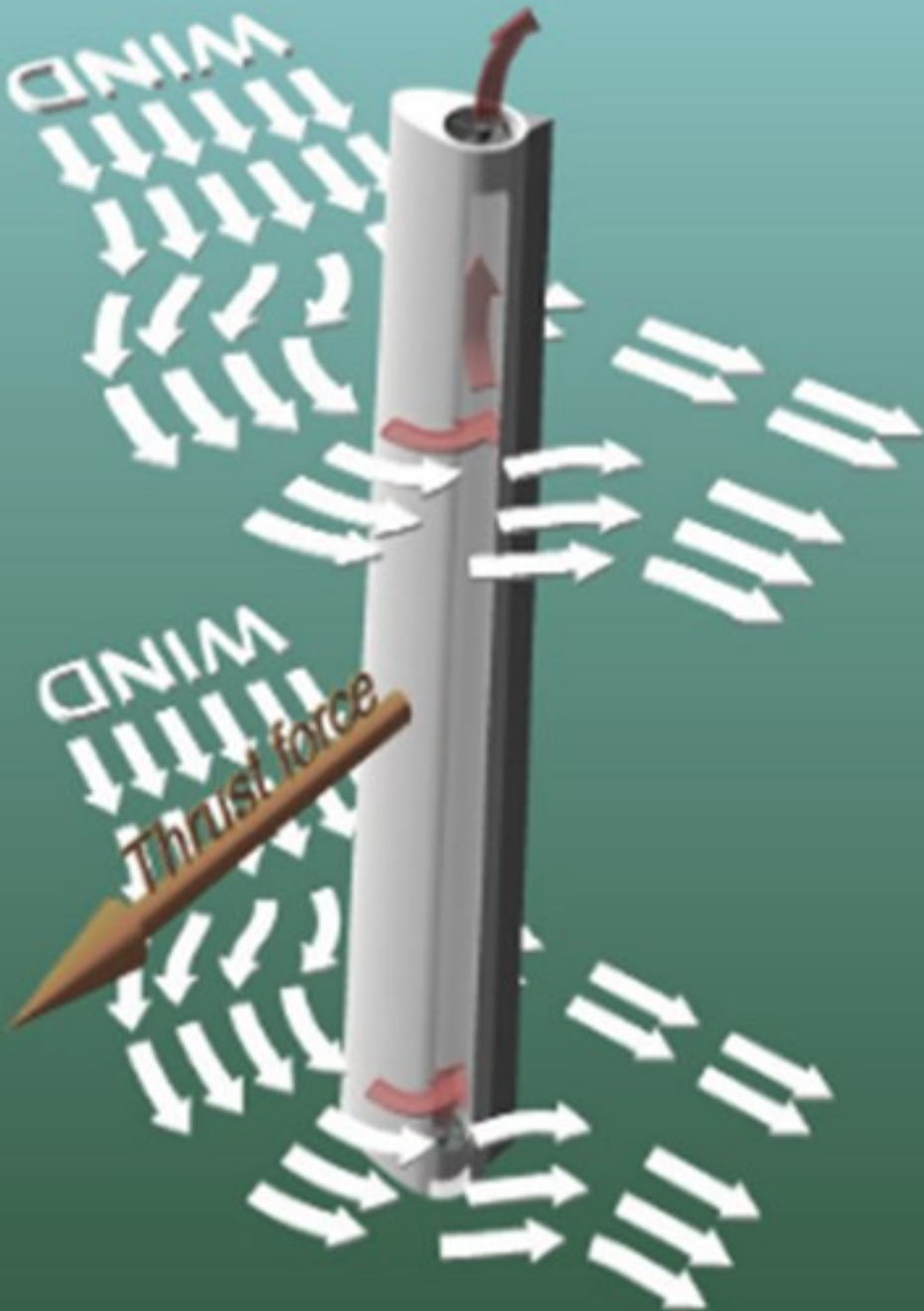
Rewinding



Suction Wing



Suction Wing



Egg shape with moving flap

Fan blows out the top

Create Vacuum behind wing

Testing the Concept

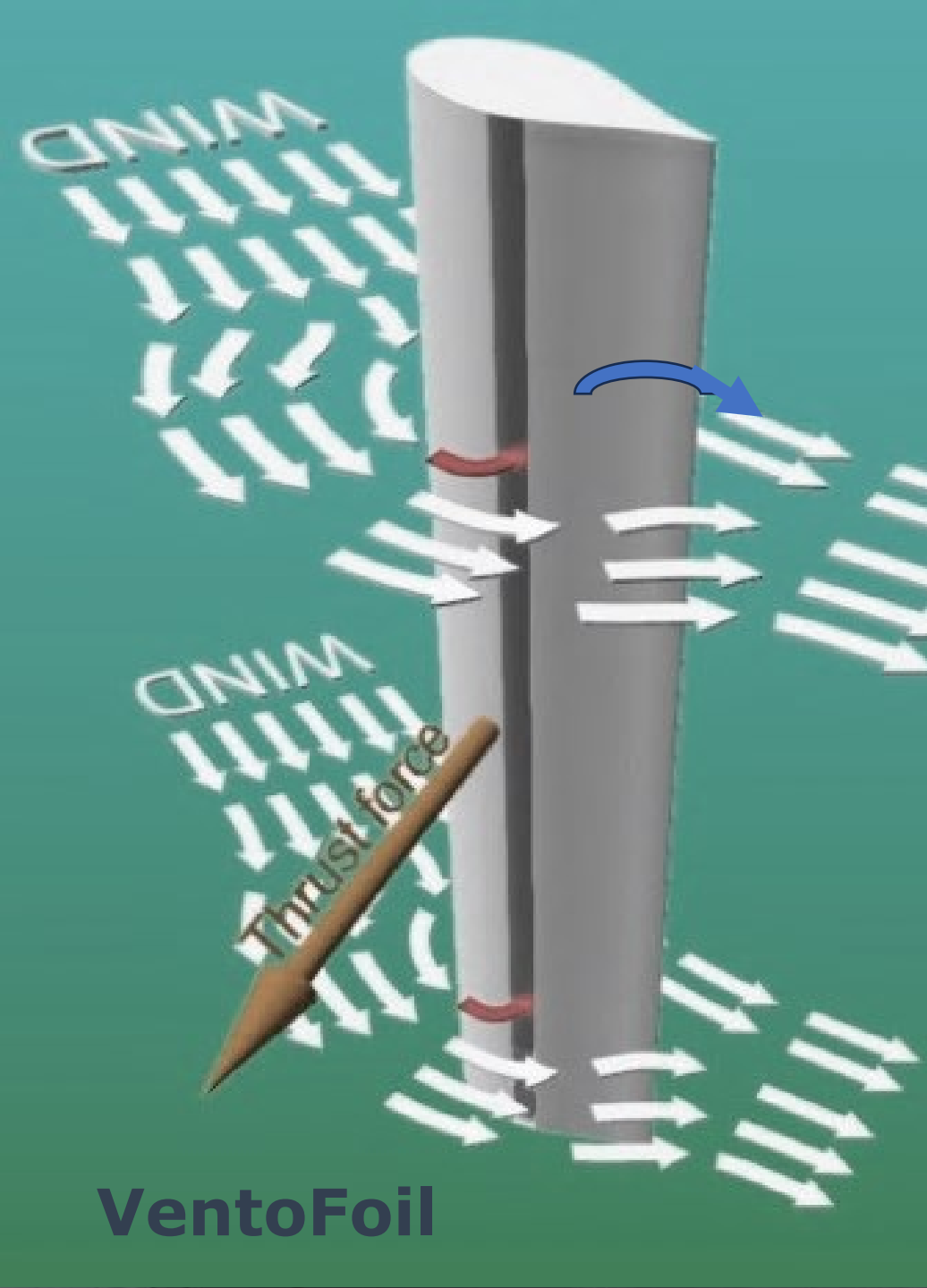


Development of the Ventofoil

2018 start of Econowind

- VentoFoil® design
- 20 VentoFoil® installations and Class Approvals
- Design 24 and 30 meter XL





VentoFoil

Development of the VentoFoil



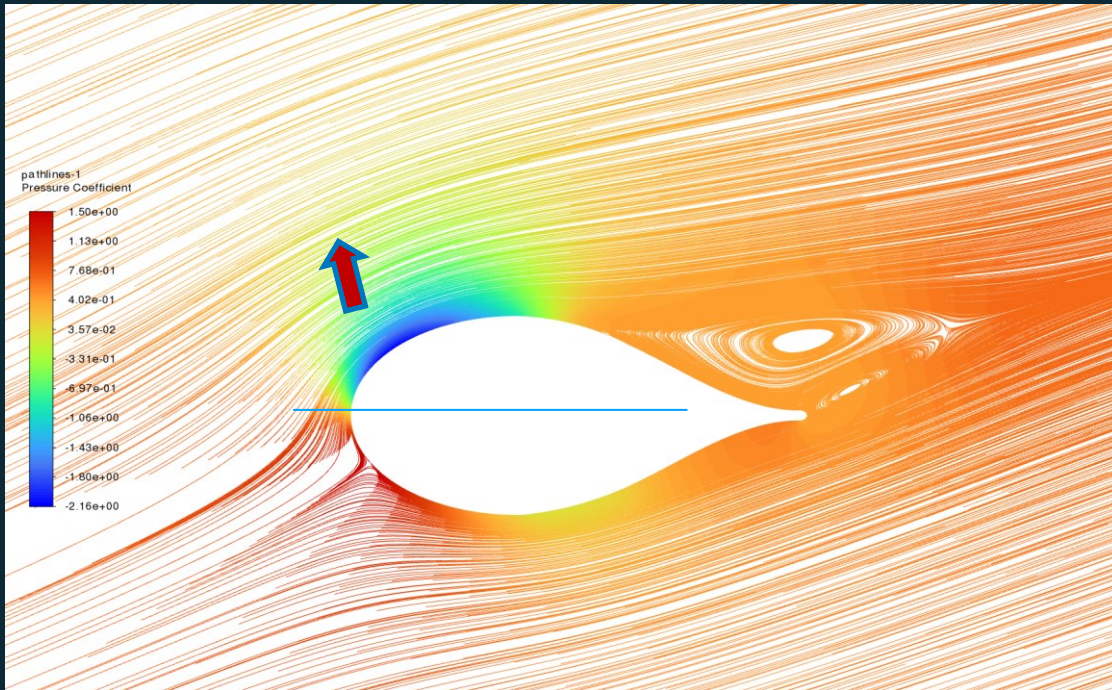
Water-drop shape
with fixed flap

5x fans suck from
side in, to *side* out

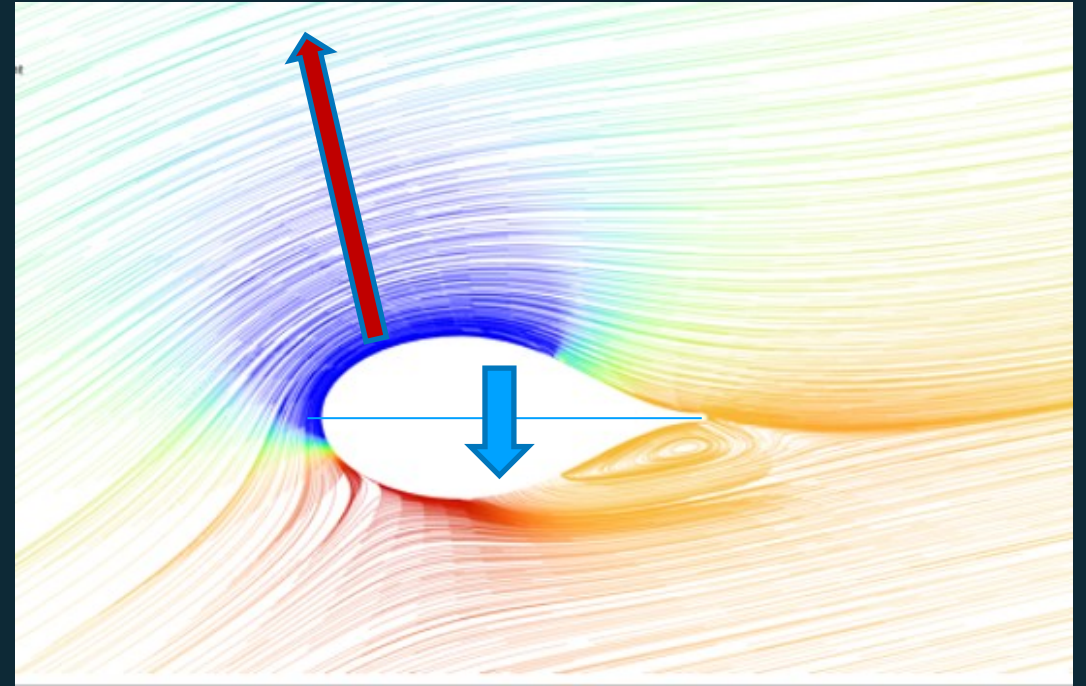
Create Vacuum
behind wing

Working Principle Ventofoil®

SUCTION **OFF**, ANGLE OF ATTACK=24°



SUCTION **ON**, ANGLE OF ATTACK=24°



Ventofoil® Performance and specs

	16 meter	24 meter	30 meter
Max Propulsion	250 kW	1000 kW	1260 kW
EEXI power improvement at 14 knots	75 kW	193 kW	254 kW
Weight	7 tons	24 tons	26 tons
Material	Steel and Aluminium	Steel	Steel



REFERENCE LIST

Recently, Econowind received its **100th order** for the VentoFoil suction wing!

- **40 VentoFoils installed** and already improving fuel efficiency.
- **15 units delivered** and ready for installation.
- **20 units currently in production.**
- **37 additional units** scheduled for delivery.

More than 18 customers



TERNTANK



SCHRAM SHIPPING



Van Dam Shipping



Reference List

Vessel Name	Customer	Vessel DWT	Vessel type	Suction Sails	Size of Suction Sail	Type of Suction Sails	Class	Installed or Ongoing	Installation Year
Ankie	Jan van Dam Shipping	6000	General cargo	2	2x 10/13 m	VentiFoil	RINA	Installed	2018
Frisean sea	Boomsma	8000	General cargo	2	2x 10 m	VentiFoil	LR	Installed	2019
Anna	Schram Anna	6000	General cargo	0	2x 16ms	VentiFoil	RINA	Installed	2022
Niolon	Marfret	25000	RoRo	4	2x Container	VentiFoil	DNV	Installed	2020
Tharsis	Tharsis	1600	General cargo	0	Twin Foil	Twin Foil	RINA	Installed	2021
Sunnanvik	SMT	25000	cement carrier	2	2x 16m	VentoFoil	RINA	Installed	2023
Chemical chalanger	Chemship	15000	Chemical tanker	4	4x 16m	VentoFoil	ClassNK	Installed	2023
Kalamazoo	ONE line	TEU	Container vessel	2	2x Container 10m	VentoFoil	DNV	Installed	2023
Odda Marie	RABN	8000	General cargo	2	16m	VentoFoil	BV	Installed	2023
Amadeus Saffier	de Bock Maritiem	3600	General cargo	2	16m	VentoFoil	BV	Installed	2024
Margritte	NYK	40000	Bulk Carrier	2	16m	VentoFoil	ClassNK	Installed	2024
Jumbo Jubilee	Jumbo	13000	Heavy Lift vessel	2	16m	VentiFoil	LR	installed rental	2024
Wilson Farsund	Wilson	3800	General cargo	2	16m	VentoFoil	DNV	Installed	2024
Coral Pearl	Antony Veder	30000	Chemical tanker	2	16m	VentoFoil	RINA	installed	2024
Coral Partula	Antony Veder	30000	Chemical tanker	2	16m	VentoFoil	RINA	installed	2024
	MOL DB	17500	General cargo	2	container 10m	VentoFoil	ClassNK	Delivered	2024
	Hartel / Instalho	3800	General cargo	2	16m	VentoFoil	BV	Delivered	2024
Onego Dunesto	Onego bv	9800	General cargo	2	16m	VentoFoil	DNV	Delivered	2024
	Vertom	6000	General cargo	2	16m	VentoFoil	RINA	Delivered	2024
	MOL-tech	15000	div	1	container 10m	VentoFoil	ClassNK	Delivered	2024
Niolon	Marfret	25000	RoRo	2	container 10m	VentoFoil	DNV	Delivered	2024

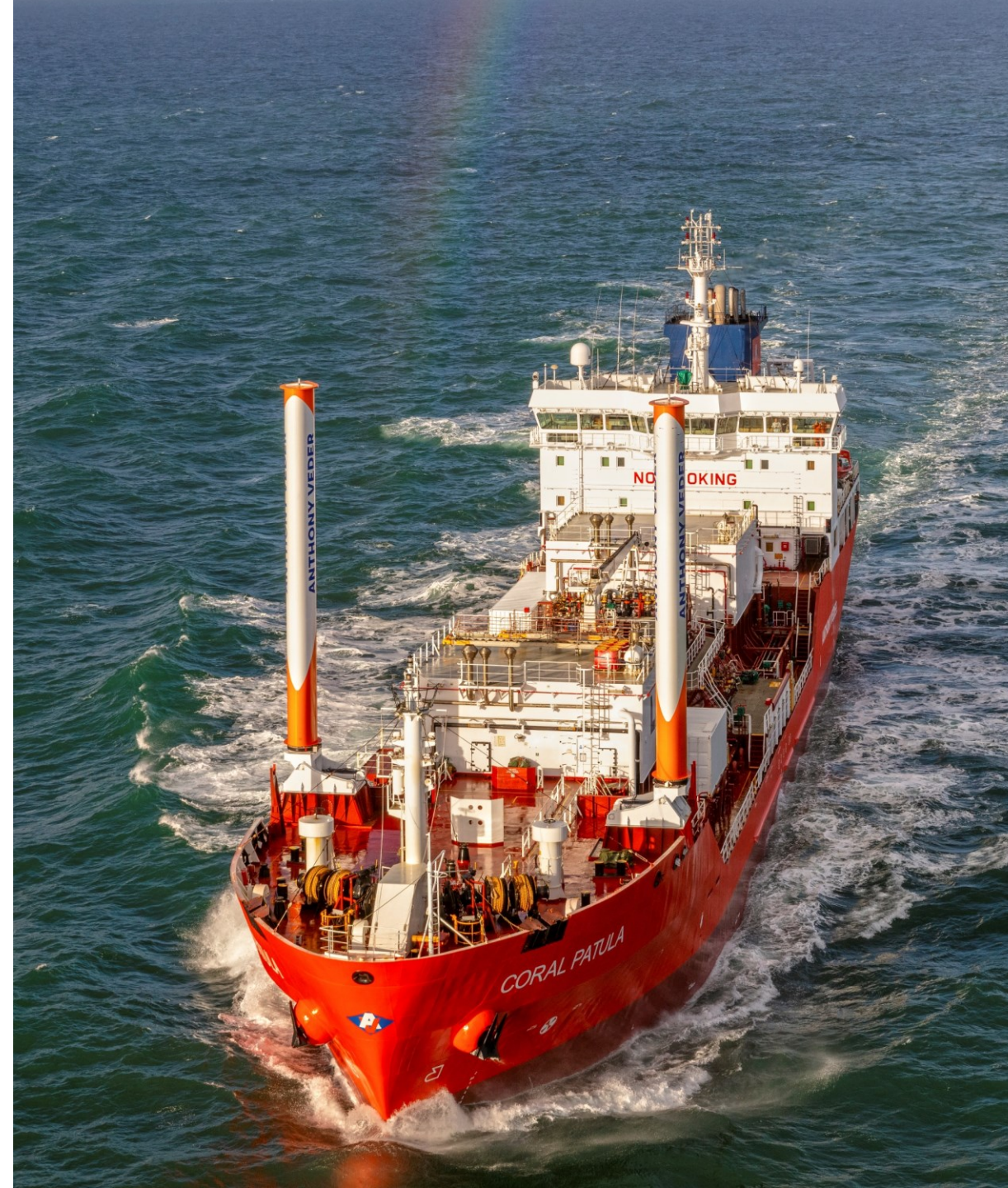
Reference List

Market leader in Wind-assisted ship propulsion

Vessel Name	Customer	Vessel DWT	Vessel type	Suction Sails	Size of Suction Sail	Type of Suction Sails	Class	Installed or Ongoing	Installation Year
Jutlandia Swan NS Loreto Frisiana	TärnTank	15000	Chemical tanker	4	4x16m	VentoFoil	BV	Delivered	2025
	TärnTank	15000	Chemical tanker	4	4x16m	VentoFoil	BV	in production	2025
	TärnTank	15000	Chemical tanker	4	4x16m	VentoFoil	BV	in production	2025
	Gerdes	3850	General cargo	2	16m	VentoFoil	LR	in production	2025
	Gerdes	3850	General cargo	2	16m	VentoFoil	LR	in production	2025
	Hartel /Kroezen	3800	General cargo	2	16m	VentoFoil	BV	in production	2025
	Unitankers	12500	Chemical tanker	4	16m	VentoFoil	ClassNK	in production	2025
	OceanPact	550	OSV	2	container 10m	VentoFoil		in production	2025
	Boomsma	8000	Bulk Carrier	1	XL 24m	VentoFoil	LR	ordered	2025
	TärnTank	15000	Chemical tankers	4	4x16m	VentoFoil	BV	ordered	2026
	TärnTank	15000	Chemical tankers	4	4x16m	VentoFoil	BV	ordered	2026
	TBA	3850	General cargo	2	16m	VentoFoil		ordered	2025
	TBA	3850	General cargo	2	16m	VentoFoil		ordered	2025
	TBA	3850	General cargo	2	16m	VentoFoil		ordered	2025
	TBA	3850	General cargo	2	16m	VentoFoil		ordered	2025
	TBA	40000	Chemical tanker	4	16m	VentoFoil		ordered	2025
	TBA	3800	Bulk Carrier	2	16m	VentoFoil		ordered	TBA
	TBA	3800	Bulk Carrier	2	16m	VentoFoil		ordered	TBA
	TBA			2	16m	VentoFoil		ordered	TBA
	TBA			2	16m	VentoFoil		ordered	TBA
	TBA			2	16m	VentoFoil		ordered	TBA
	TBA			2	16m	VentoFoil		ordered	TBA
	TBA			2	16m	Ventofoil		ordered	TBA

VentoFoil® Onboard

- Operated via a touchscreen display
- Sails Automatically
- All components are easily accessible
- Hydraulics and electrical familiar to the crew
- No moving flap



Harnessing The Power Of Wind

- Lower fuel consumption
- Reduced emissions
- Improved EEXI, CII and Fuel EU
- Improved speed and stability
- Long-term cost savings
- Increased competitiveness



Rewind your ship with Econowind's Ventofoil.

FuelEU CASE STUDY

TOTAL BENEFIT 4X 24M VENTOFOILS ON EXAMPLE SHIP MAYA

IMO EEDI/EEXI Calculation

V Ref	EEXI (f-eff*Peff)	PME+Pti	Fuel EU f-eff*Peff/(P ME+Pti)	Reward Factor
13.67 kn	760 KW	5003 KW	15 %	5%

Capex Indication

4 VentoFoilS 24 m including installation and design during a yard stay

Capex wings	750,000 \$ Per Sail (4)
Yard & design Cost	100,000 \$ Per Sail (4)
Deviation costs	20,000 \$
Overall Logistics	50,000 \$
Total	3,470,000 \$

Shipping cost item	Overall Cost	Expected Effect with 15% Wind Assist
Fuel Consumption linked to EU trade, subject to MRV	3000 ton	- 450 ton
Fuel Costs Avoided (CII), based on LSFO	\$1,800,000	- \$270,000
ETS Costs (avoided) based on CII	\$800,000	- \$120,000
FUEL EU IMPACT		
FuelEU Penalty Avoided, annual until 2030 (2%)	\$200,000	0 (- \$200,000)
FuelEU compliance surplus, annual until 2030 (3%)		- \$215,246
Total Benefit annually		- \$805,246
5 years Benefit		\$4,026,230

Based on McKinney moller center calculations

$\$3,470,000 / \$805,246 = 4.3 \text{ years}$ until investment is returned

SCALE UP FACTORY 2024



Ventofoil® Product Assortment



RETROFIT



NEW SHIP



CONTAINERIZED



FLATRACK

Best suited	Existing Tankers & Bulkers	New Tankers & Bulkers	Highly flexibility situations	Movable on deck
Sizing	<ul style="list-style-type: none">16 Meter24 Meter (2025)30 Meter (2025)	<ul style="list-style-type: none">16 Meter24 Meter (2025)30 Meter (2025)	<ul style="list-style-type: none">* 10 Meter	<ul style="list-style-type: none">10 Meter13 Meter



TERNTANK

VENTOFOIL CONFIGURATION



CHEMICAL CHALLENGER

VENTOFOIL CONFIGURATION



SMT SUNNAVIK

VENTOFOIL CONFIGURATION



NBA MAGRITTE

VENTOFOIL CONFIGURATION



ANKIE

VENTOFOIL CONFIGURATION



FRYSIAN SEA

VENTOFOIL CONFIGURATION



HARTELL

VENTOFOIL CONFIGURATION



REDERIJ GERDES

VENTOFOIL CONFIGURATION



ONE

VENTOFOIL CONFIGURATION



MARFRET

VENTOFOIL CONFIGURATION

Thank you!