

Vindskip®

Vindskip® a carbon-robust ship concept running on the wind and LNG, with a car carrying capacity of 6600 cars. Reduces CO2 emission with 16 000 tons yearly

The Vindskip®-concept

A disruptive solution

The solution disrupts the traditional way of thinking concerning green maritime transport. The novelty of the ship is the design of the hull, both above and under water with the hull itself acting as a symmetrical wing section.

An airplane needs speed to take off. That's how Vindskip® is working in principal as well, it needs speed to generate a Pull in the speed direction with its wing-shaped above water hull. The design is inspired by both aviation and speed sailing.

Dynamic System

An LNG-powered propulsion system will start the ship from zero up to the desired speed. The aerodynamic lift now being generated, can be exploited to create speed and save fuel. A computer-generated Route, meeting the ETA (estimated time of arrival) with lowest possible fuel consumption is initially made. A weather optimized version will be autonomously tracked by the ship's navigation equipment.

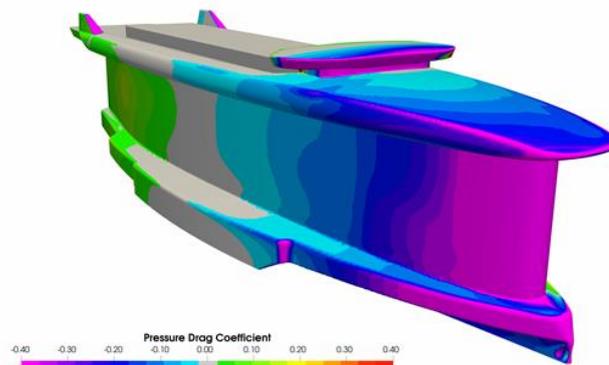
To change from HFO to LNG in Deep Sea Shipping, the fuel consumption must be reduced substantially. This becomes a reality with Vindskip®, giving fuel savings of estimated to 55% compared to a reference ship

MARPOL Annex VI a regulatory game changer

For many decades, international shipping has been running on heavy fuel oil, HFO, as a fuel. HFO is the heaviest commercial fuel from crude oil, and is known as "residual fuel oil", a left over after a distillation process, having a great negative environmental impact

CFD-image

The below CFD-image is showing the pressure distribution over the hull at Apparent wind angle of attack 40 degrees. Blue and pink colour is showing under pressure, explaining why the ship gets a Pull in the speed direction. Ref. Pressure Drag Coefficient.



LadeAs

Main dimension:

Length Loa	199 m	Lightship weight	16 500 tons
Length Lbp	195 m	Lightship draft average	5,4 m
Breadth	49 m/ 26 m (trimaran hull)	Lightship draft forward	5,3 m
Net parking area	56 810 m ²	Lightship draft aft	5,5 m
Design speed	18,0 knots	Design draft	8,5 m

Installed power, main engine plus auxiliary engines:	
-	11 400 kW MCR (maximum continues rating)
-	Maximum effect on the propeller is 9 300 kW

Specially designed to carry environmentally friendly cars

Transportation of electric cars to overseas markets, is a new evolving opportunity.

The electrification trend is already enveloping the automotive industry.

The VW Group anticipates that by 2025 they will only produce EVs.

Target emission per car per transported 1000 km			
Type of emission	Emission per car per transported 1000 km (kg)	Reduction in emission compared to ref. ship running on HFO	Estimated total reduction in emission compared to ref. ship running on HFO per year (ton)
CO ₂	10,656	55 %	16 000
NO _x	0,033	95 %	845
SO _x	0,0003	100 %	658
Black carbon	0,0000	100 %	