



WESSELS
Reederei GmbH & Co. KG



Back to the roots?



WASP - Wind Assisted Ship Propulsion



WESSELS
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- **Founded 1912**
101 years of innovative ship management
- **Actually managing 47 vessels**
- **Nautical-technical inspections**
- **Equipment & supply of ships**
- **Controlling ship operating costs**
- **Financial accounting**
- **Insurance**
- **Supervision and informing of investors**





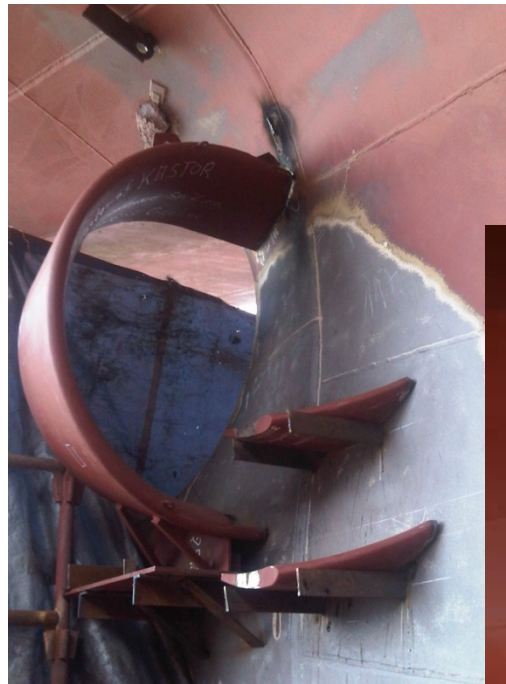
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- **Founded 2011**
- **Global owner representation, project & contract consultant for all maritime sectors**
- **Worldwide project management, also for BWT...**
- **Ship evaluation for banks, project financier and ship owners**
- **Sales management, role of commercial agent**
- **Global on-board service for steering gears, hatch covers, propellers, winches, mooring equipment,...**
- **Energy & cost reduction management**

Energy Efficiency References





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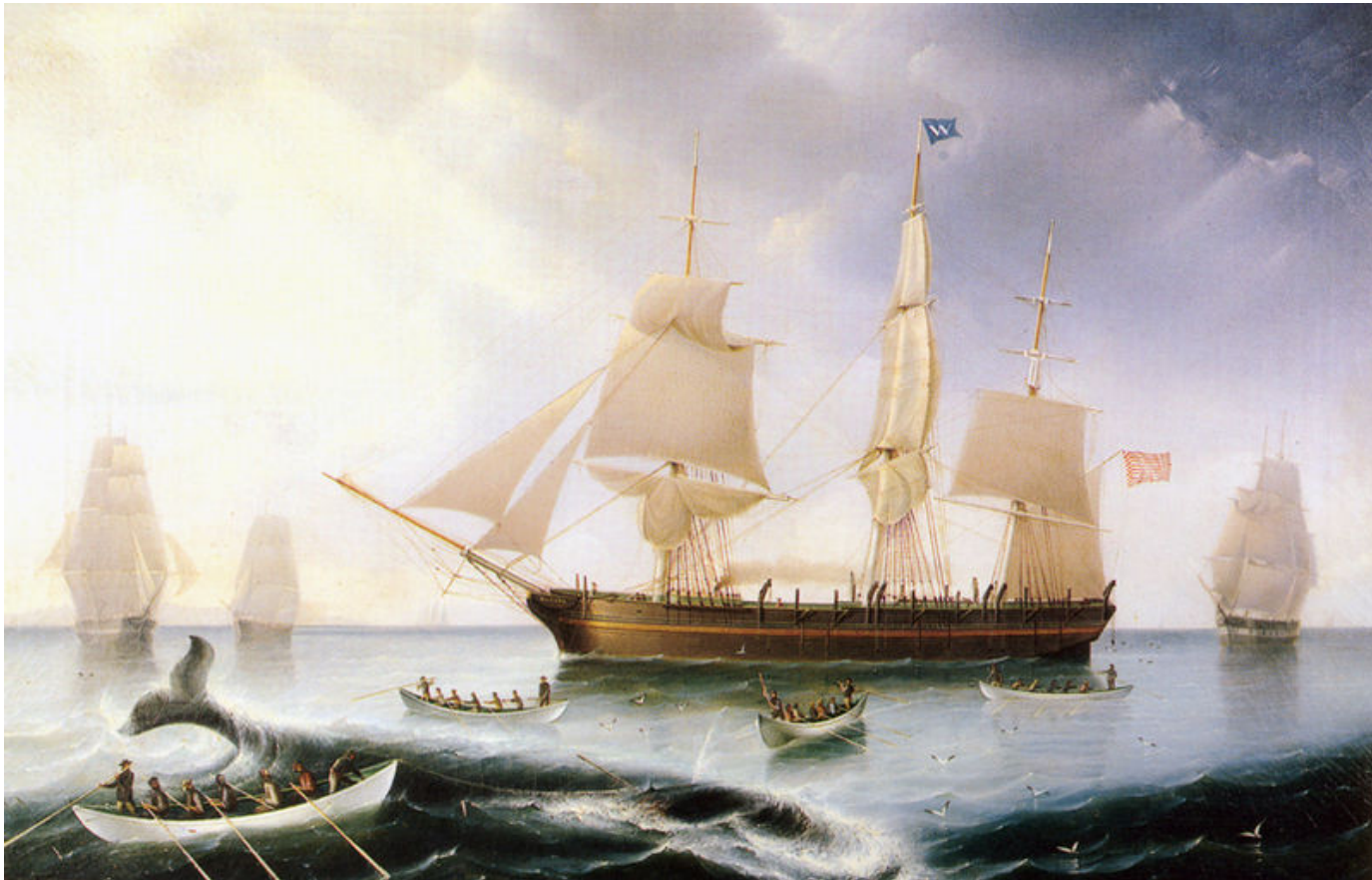


WASP

- **History**
- **From sailing vessels to steamers**
- **Motivation**
- **Actual WASP projects & ship owner's experiences**
- **Future projects & challenges**



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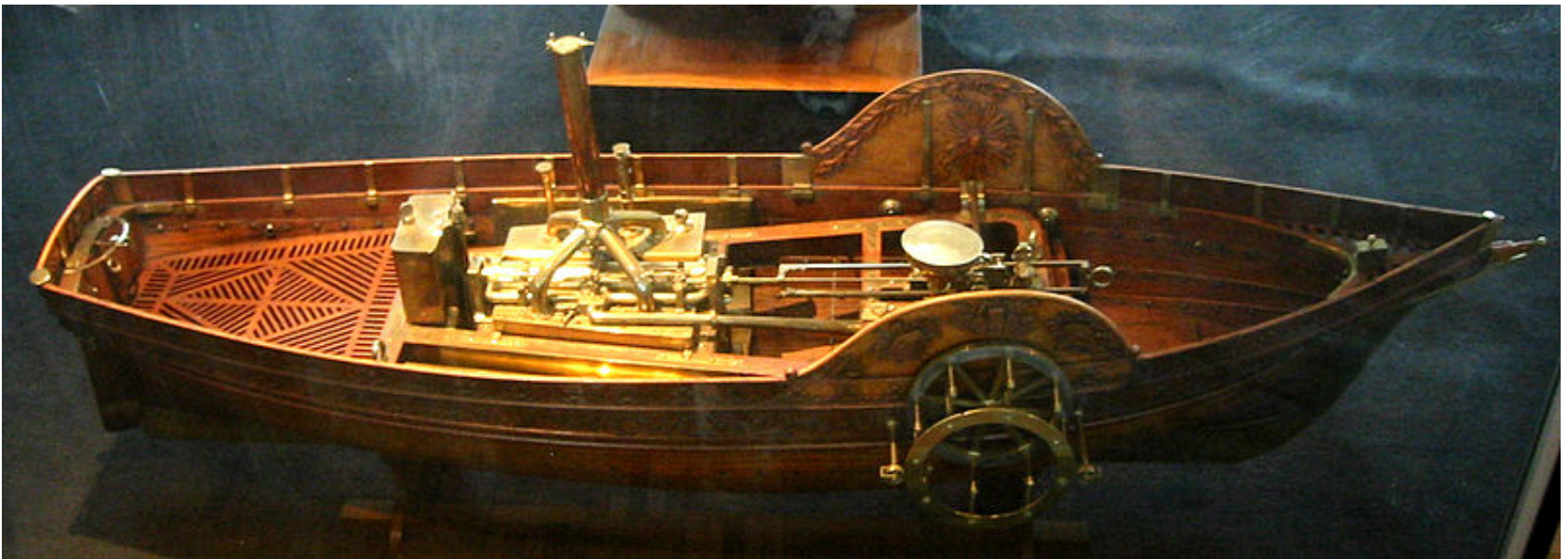


1830/1840



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LOEWE  **MARINE**

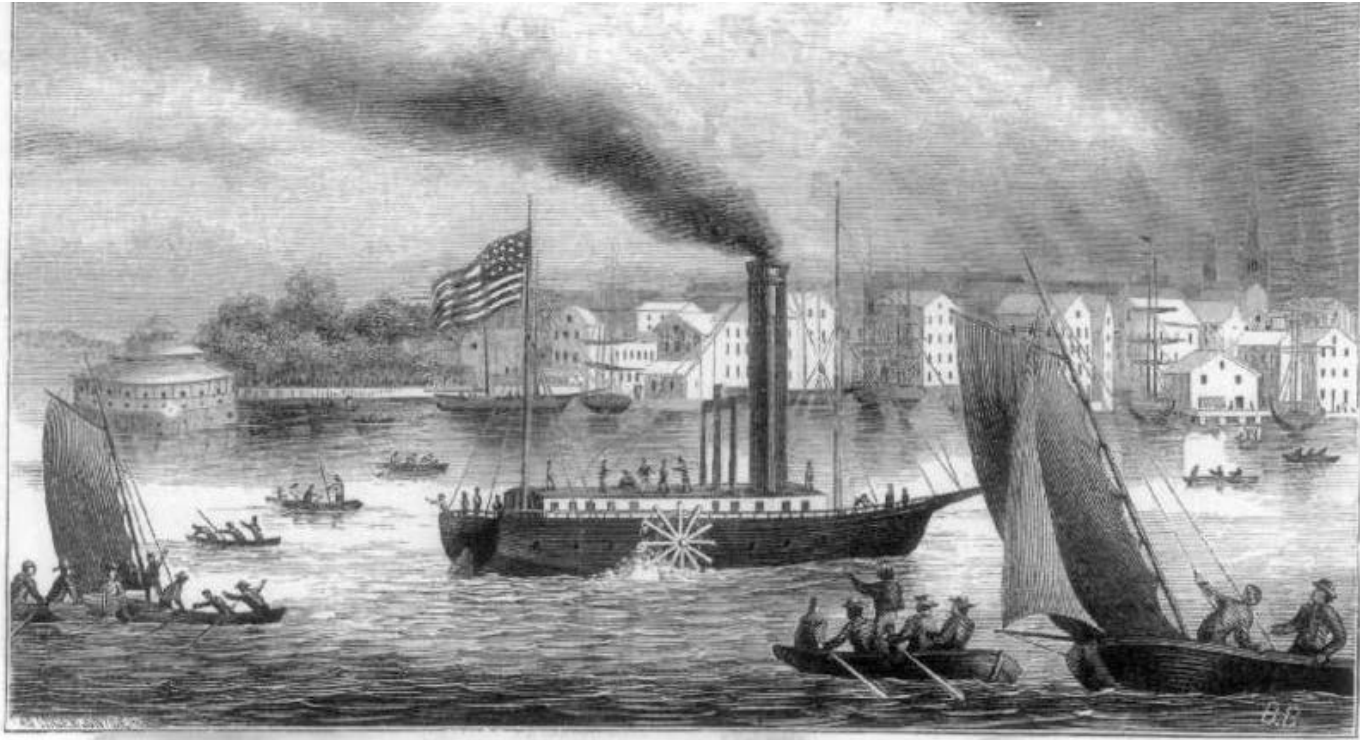


1783



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LOEWE  **MARINE**



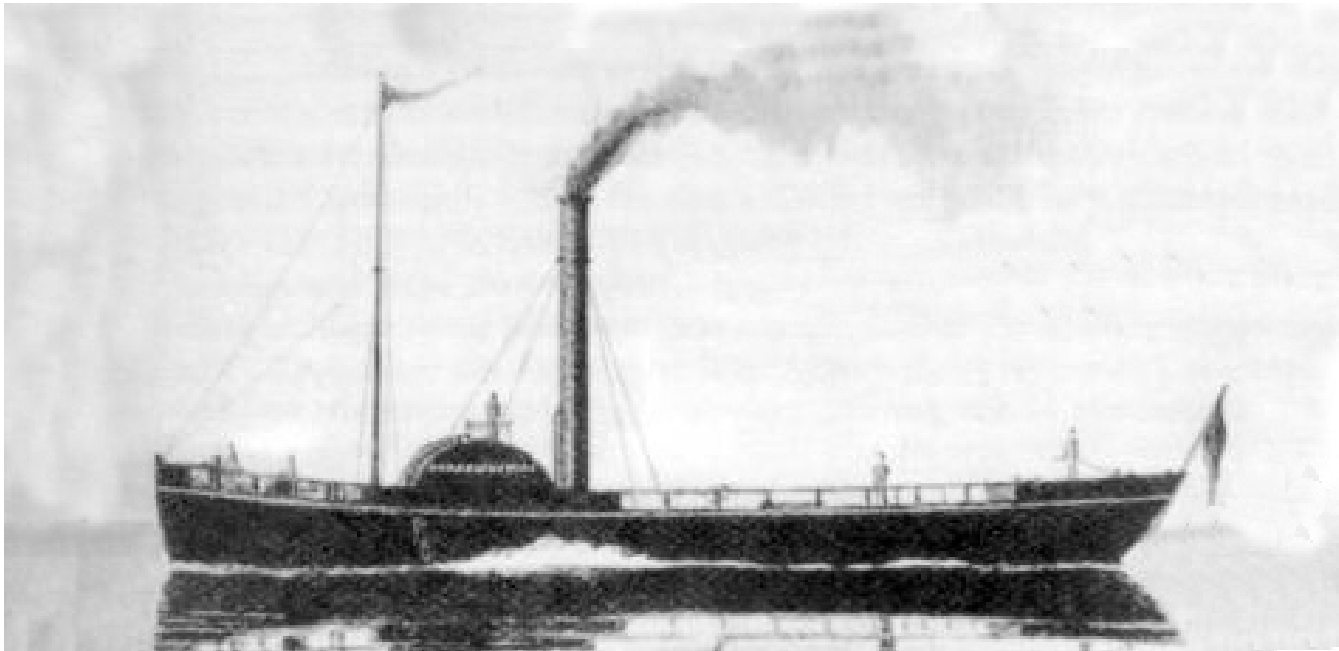
1807



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“Lady Of The Lake”



1816

For the first time ever a steamer entered Hamburg Harbour



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From sailing vessels to steamers -I-

- **Independency of natural influences**
- **Technical development**
- **Profit increase**
- **Reaction on growing markets**
- **Increase of transported cargo volume of ship/year**
- **Increase of competitiveness**
- **Extreme increase of investment costs for NB**
- **Transition from captain to shipping societies as ship owners**



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From sailing vessels to steamers -II-

Merchant Fleet of Bremen



- **1820th / 90 sailing vessels**
- **1830th / 200 sailing vessels**
- **1850th / 300 sailing vessels, 14 steamers**
- **1880th / 324 sailing vessels, 68 steamers**
- **1890th / 212 sailing vessels, 130 steamers**



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1865



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1922



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1931



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1988





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Back to the roots!!!

**Gerd Wessels the owner of
Wessels Reederei
started already 2007 with his
“wind” engagement by
on-board pilot tests for
kite systems**



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**WESSELS Reederei was the pilot
test partner for a kite system**



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2009



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**WESSELS Reederei was the pilot
test partner for a kite system**

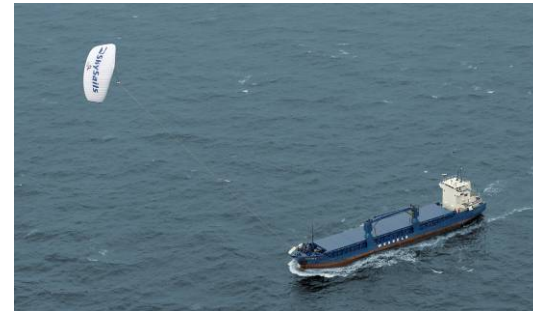


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Kite Ships in operation at WESSELS

- **MV “Michael A.”: SKS C160, in operation since end of 2007**
- **MV “Theseus”: SKS C160, in operation since 2009**
- **Prepared: MV “Peleus”, MV “Telamon”**





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Motivation to use WASP again

- **To increase the awareness of onboard and onshore crew with regards to operational optimization and energy efficiency**
- **Reduction of operational costs → Profit increase to become more competitive**
- **„Steady“ increase of fuel prices**
- **Increase of social acceptance**
- **Reduction of environmental footprint**



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2010



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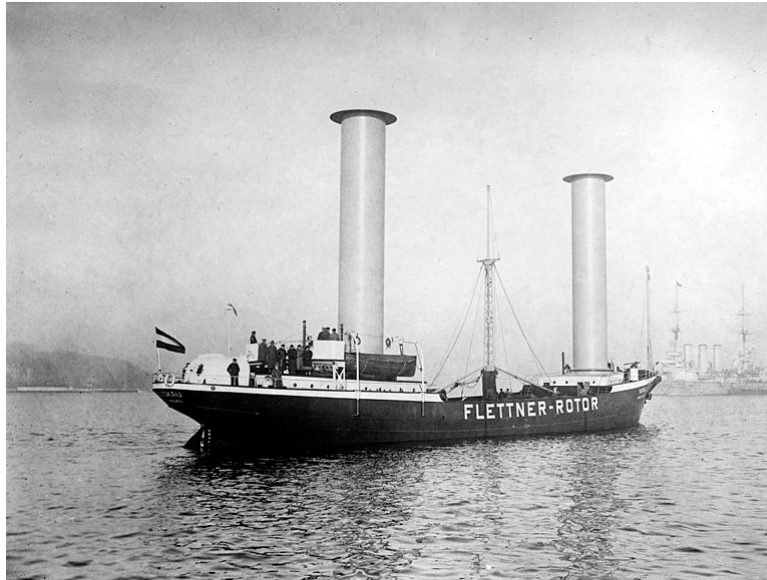
**Start-up support for Enercon:
Wessels Reederei was the technical
manager of E-Ship 1**



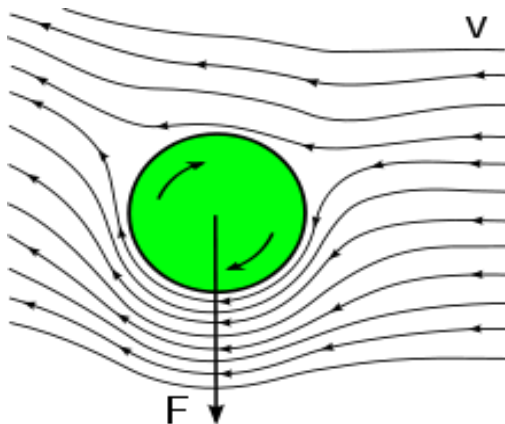
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1924



Anton
Flettner



1926



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Principal points to consider for WASP integration

-|-

- **Availability & efficiency of wind on trade routes**
- **Requirements of classification societies**
- **Technical modification on board**
- **Impact of operational procedures and ship's safety**
- **Technical reliability of equipment**
- **Manageability of equipment by the crew**
- **Crew training**



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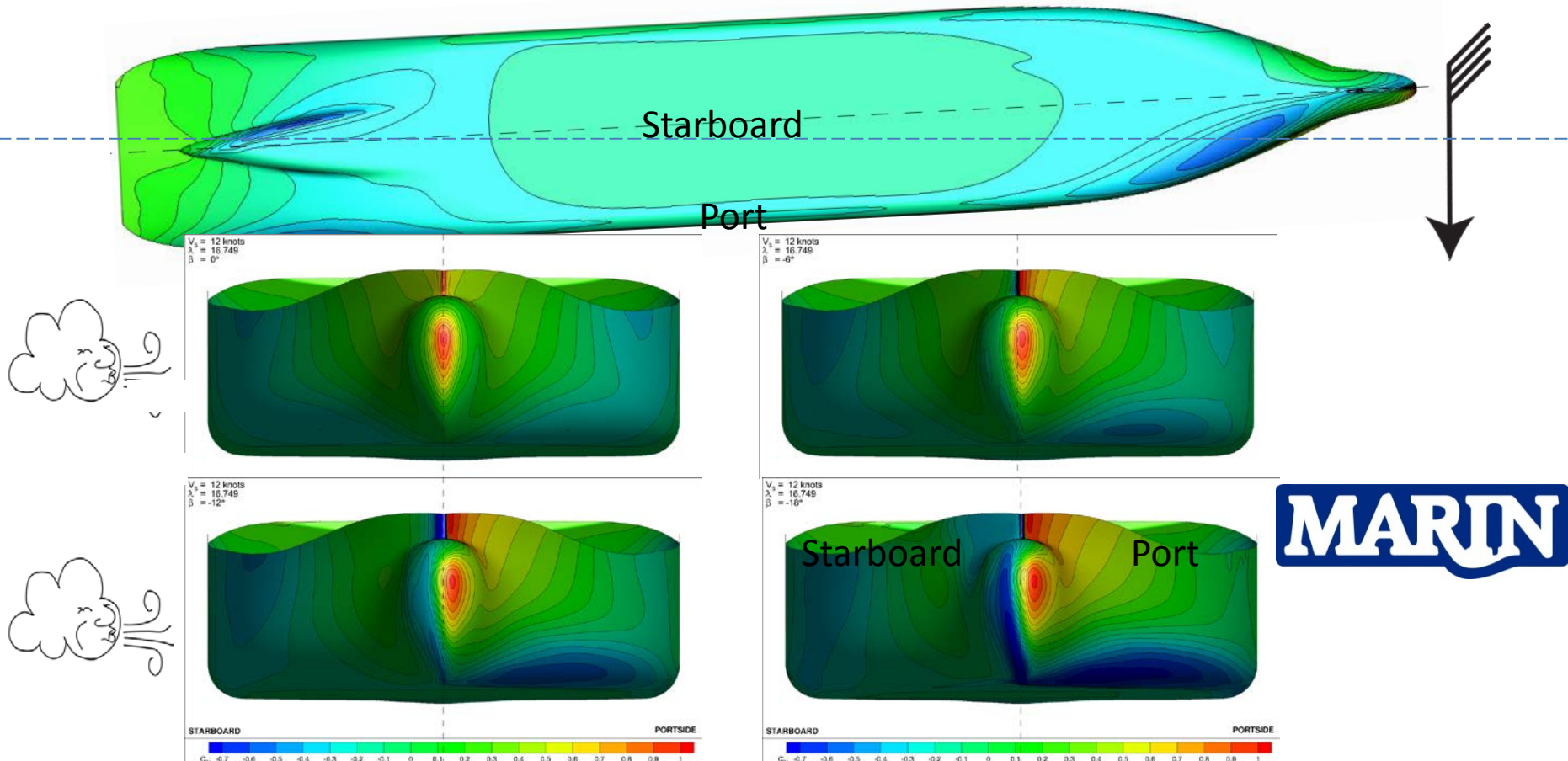
Principal points to consider for WASP integration

-II-

- **Increased energy input**
- **Additional workload**
- **Additional maintenance**
- **Requirements of insurance**
- **Requirements of clients and ports**
- **Competitiveness in the market**
- **Brake-even / Financing**
- **Hydrodynamic and efficiency impact**



PRESSURE DISTRIBUTION ON THE FOREBODY

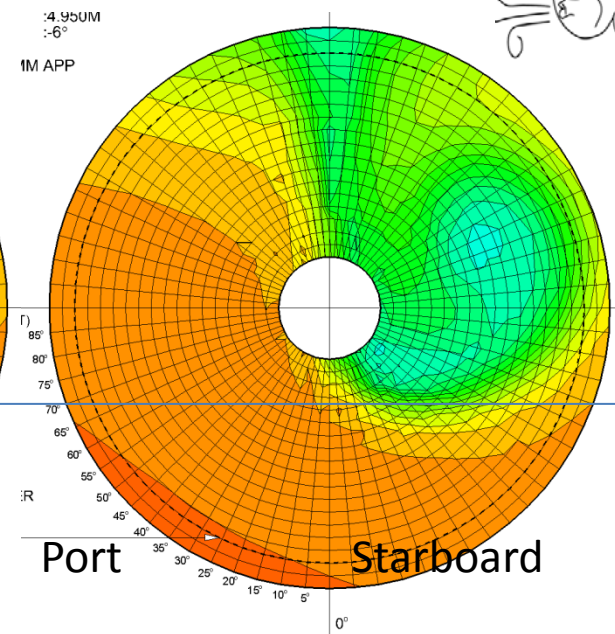
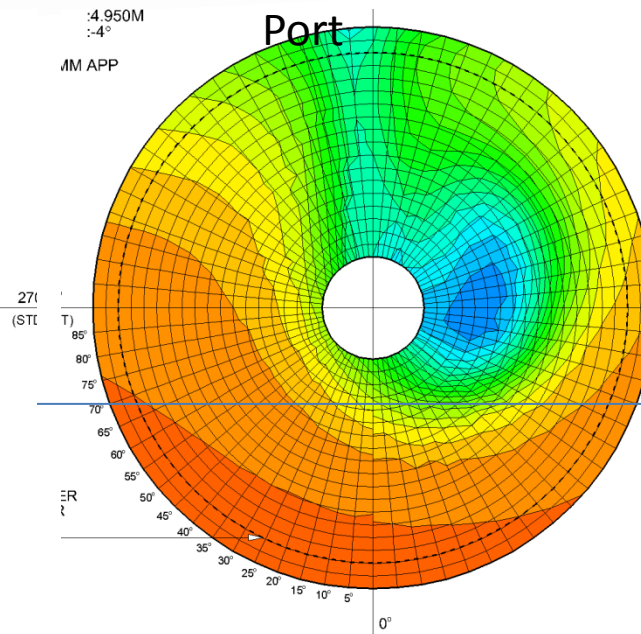
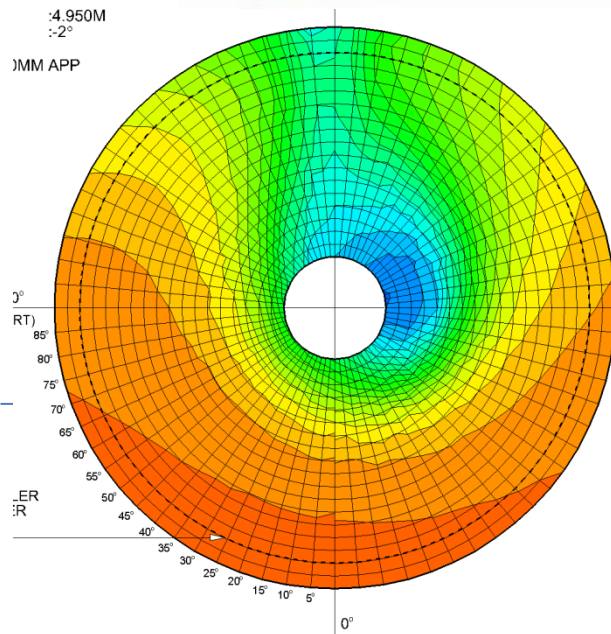
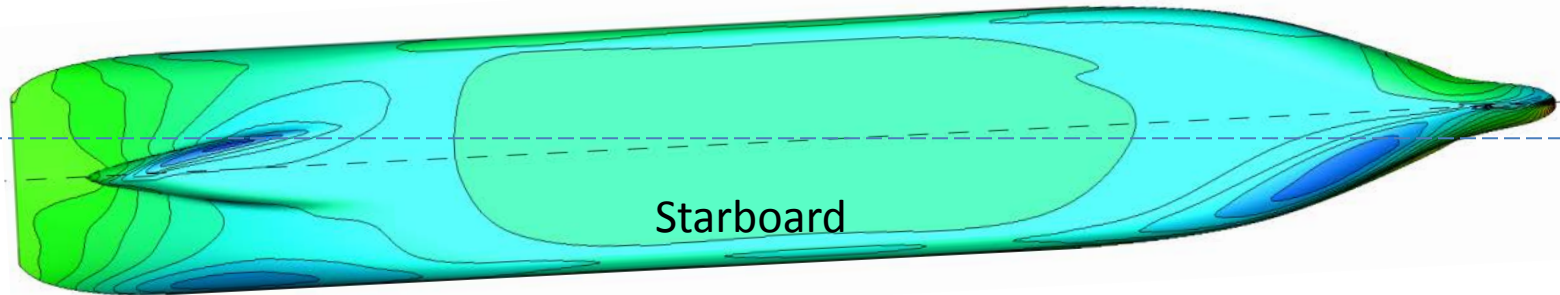




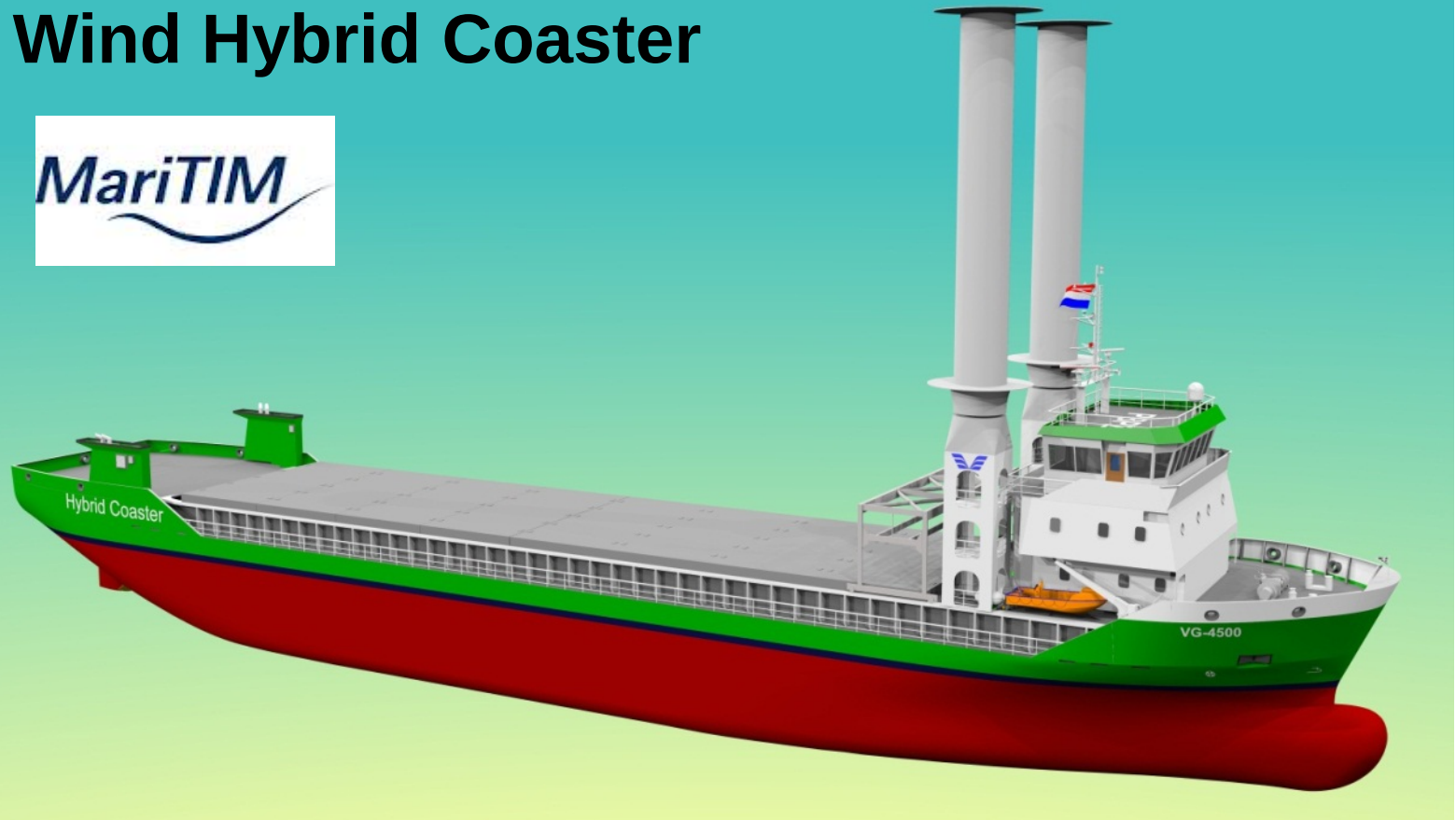
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AXIAL VELOCITY COMPONENTS IN THE WAKE



Wind Hybrid Coaster



www.maritim-de-nl.eu/index.php/wind-hybrid-coaster.html



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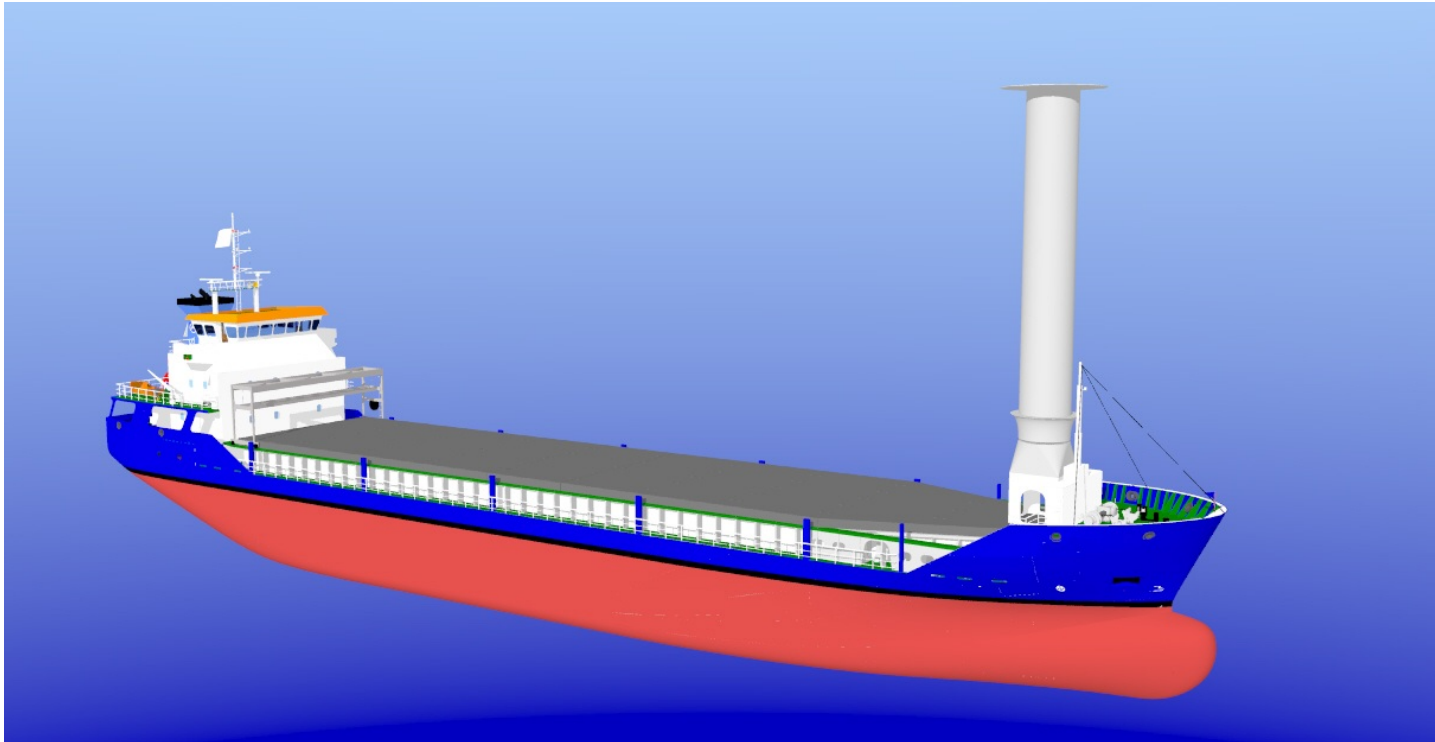
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2013



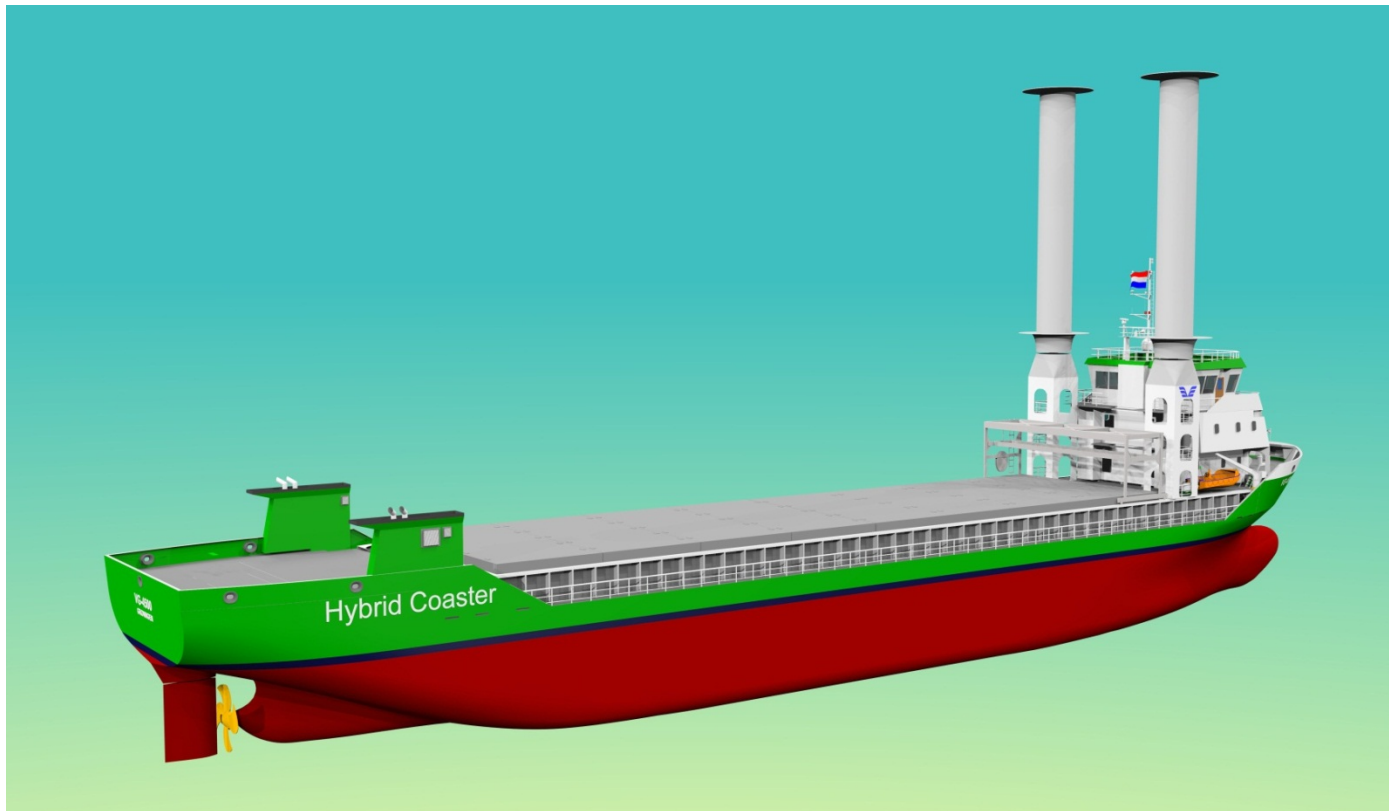
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Test trial vessel for **WHC** project - 2014



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2016?



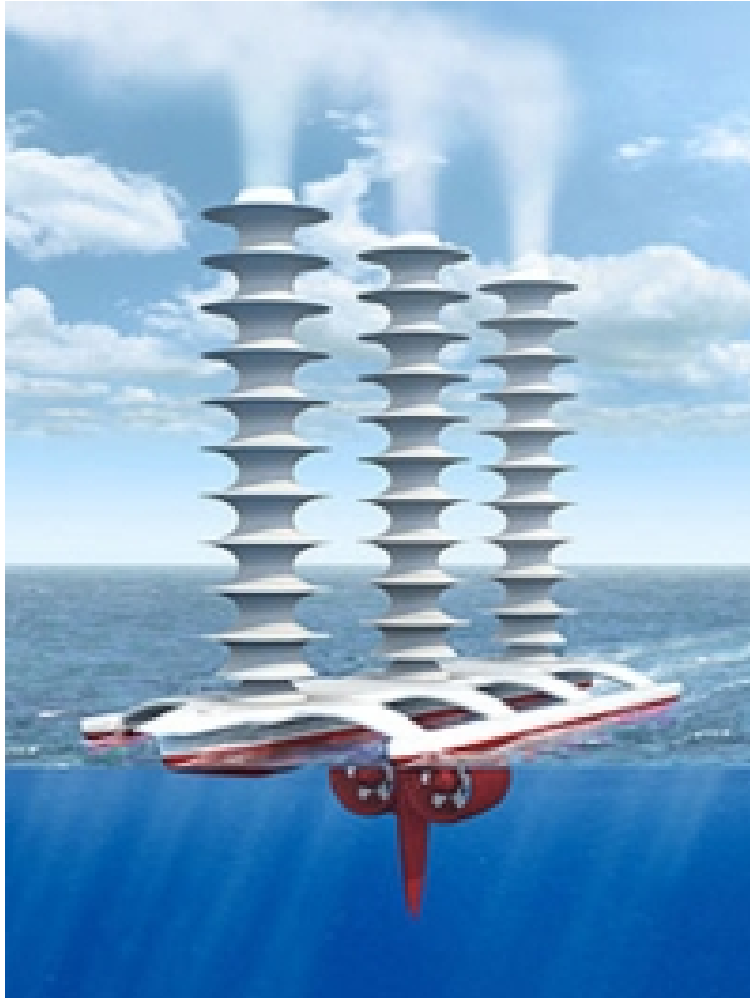
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2008



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20??

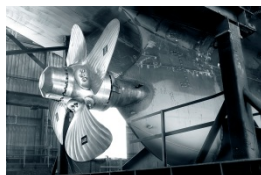
Challenges



- Target:**
69% CO₂ Reduktion
- Solarfläche 31.000 m²
 - Segelfläche 4.000 m²
 - Brennstoffzellen
 - LNG als Brennstoff

8.000-TEU-Containerschiff Eco Ship 2030 von NYK

2030



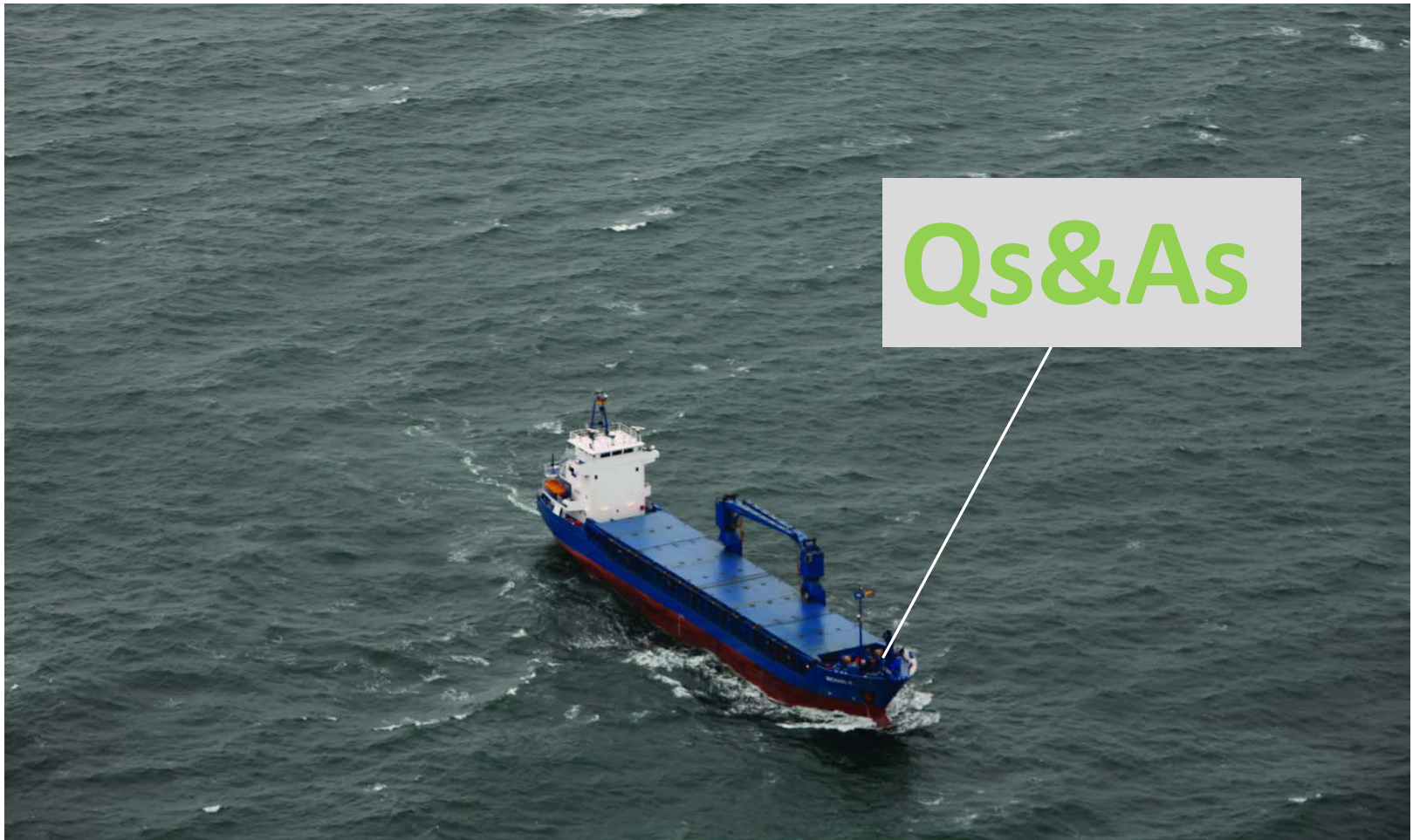


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Thank
you for
your
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Once
again!

Thank
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your
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