

CARGOSAIL

INNOVATION DRIVEN BY WIND



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SITUATION. More than 90% of the world trade involves sea transport.

Long-term social demands to become less dependent on fossil fuels and to implement environmental-friendly shipping modes seem incompatible with short-term economic interests.

The central issue of this project is the development of wind-powered and engine-assisted commercial sailing-ship concepts that can compete with existing engine-driven shipping solutions from an economic view point.

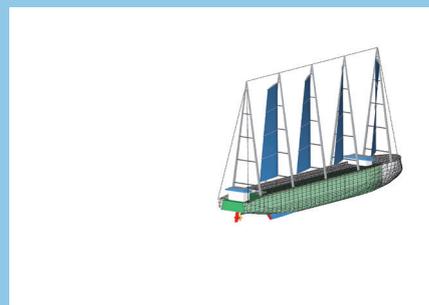
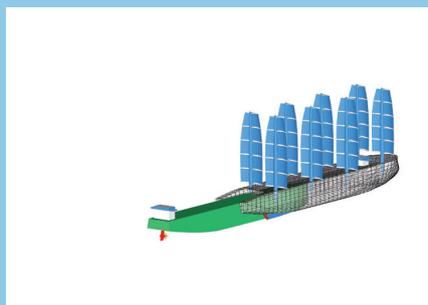
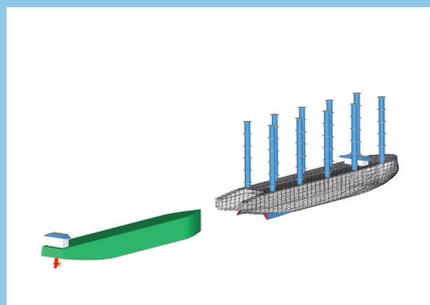
VISION. Every type of cargo is unique and different in its demands towards transportation, its timing, its costs and unique way of handling at the seaports. The cargo represents the core of all activities in commercial shipping industry.

The cargo-ship itself is nothing else but a very big wheel barrow used to transport cargo. It must be simple, safe and efficient. Our aim is to implement modern wind propulsion systems in shipping industry to make use of the vast and never drying up resource that the global wind-systems have to offer.

RESEARCH. Based on the research and design study "CargoSail" from Fritjof Giese and the numerical investigation "Hydrodynamic Analysis of Drift-forces on Hulls for commercial sailing vessels" by Siegfried Wagner, the "CargoSail Concept" was developed.

The central issue of this project is the research and development of wind-powered and engine-assisted commercial sailing-ship concepts, optimized for specific cargo demands and routes that can compete and outpace existing engine-driven shipping solutions from an economic view point.

RESEARCH PURPOSE. The aim is to scrutinize the idea of separating the cargo holding part from the sail-carrying system and at the same time identify the most promising related solutions and associated needs for detailed follow-up research and finally the development of commercially attractive shipping solutions for sea-trade in a zero emission world.



Concept example of a wind-powered cargo-sailing-vessel with 250m cargo-carrier

BENEFITS. The benefits of the concept are manifold:

The sailing part of the vessel does not need to obey to port-infrastructure restrictions concerning the rigging system, since this part will stay outside of the quayside. Moreover, the aerodynamic quality of the rigging system as well as its straightforward design, which are of importance for economic and robustness reasons, can be optimized without compromising on port-side related cargo handling aspects. Near the harbor, the system will disembark the cargo-holding part, which will move on into the harbor where the cargo is taken care of in a conventional manner.

Further benefits come along with the additional operational opportunities of this concept. The barges can be prepared in advance and will just be exchanged outside the port, which leads to short stops for the actual sailing vessel that operates in parallel to the harbour operations performed by the barges.

The variety of prevailing wind-systems on one cargo route, could require different wind-propulsion systems, depending on the course sailed towards the mean wind direction.

By disconnecting the cargo from the wind-propulsion-system a rapid redistribution to other vessels, equipped with a different wind-propulsion systems, for maximizing wind-propulsion efficiency, is possible.

Depending on the size of the barges they can also directly be used for subsequent (inland) waterway transportation to the final cargo destination, skipping the need for transshipment of the cargo in the seaports.



WE ARE LOOKING FOR

COMPETENT PARTNERS
TO JOIN FORCES WITH US IN THIS
RESEARCH PROJECT!

FINANCIAL SUPPORT
TO CONTINUE OUR WORK
ON THIS PROJECT!

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