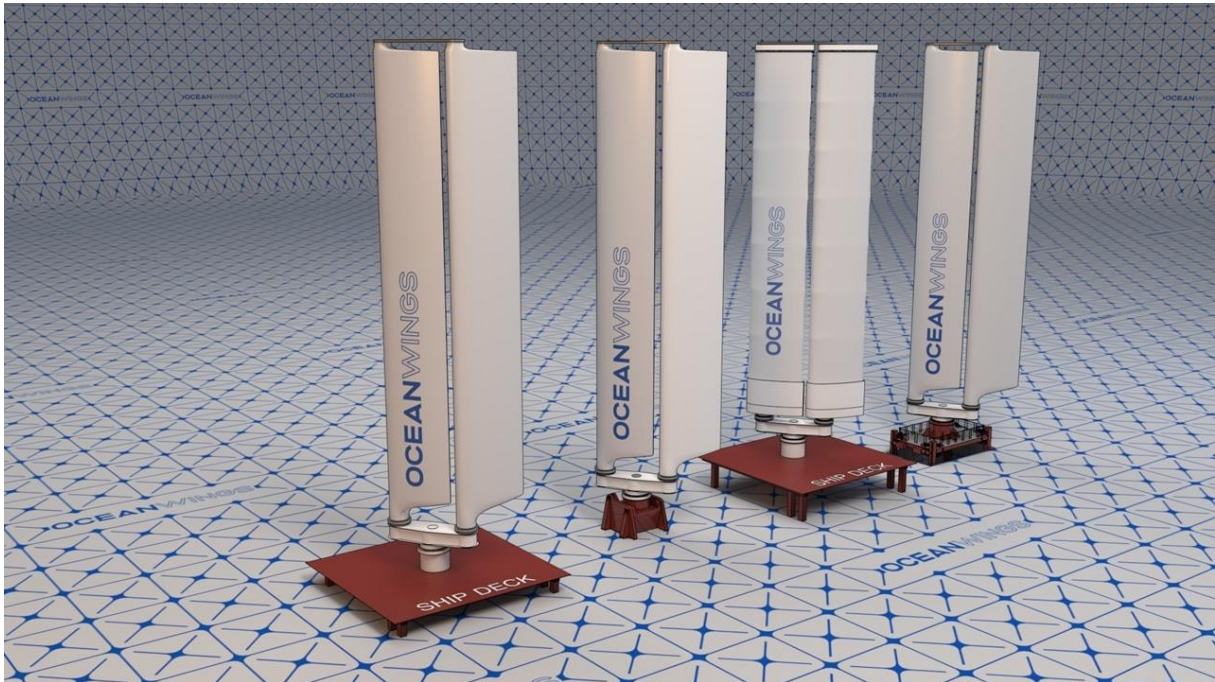


Hapag-Lloyd investigates wind assisted propulsion to reduce emissions

German liner shipping company Hapag-Lloyd has developed a concept design for a 4,500 teu wind assisted container ship with a similar concept for a 6,000 teu vessel is being looked at.

[Nick Savvides](#), Europe correspondent

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Hapag-Lloyd's concept design uses sails from OceanWingsCredit: OceanWings

Speaking at a technical conference held jointly by the Royal Institution of Naval Architects and the International Windship Association, Christoph Thiem, Hapag Lloyd's Director of Strategic Assets Projects, told delegates that sustainability and maintaining the company's top five position, in terms of fleet size were major goals for the carrier.

"Looking at the orderbooks for our competitors you obviously need more vessels, the industry is growing and to be really sure that we keep our position in the market we have the target to grow faster than others in the industry," said Thiem.

Moreover, the carrier no longer has a decarbonisation target based on a per vessel basis, but rather will monitor and set targets for its entire fleet.

"Our decarbonisation target for 2030 is that we want to reduce our emissions by one third," said Thiem, adding that if the company wants to grow too, that means its target must cut emissions by 50% achieve its goal by the end of the decade.

Confirming that the company had signed a contract last week for 24 new vessels, but not giving more details, Thiem said that one way to achieve their sustainability goal will be to slow vessels down by between one and three knots.

At the moment the company has only biofuels that it can use to reduce emissions and some large shippers have shown a willingness to pay the premium for biofuels, via an internal market where the shipper pays up to 100% of the cost of transportation via a green fuel.

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“Nestlé pays for 100% compensation of its scope 3 emissions with Hapag, but the company is an exception, customers need to play their part otherwise we just cannot be competitive,” claimed Thiem.

In this context Hapag-Lloyd recognised the need for further cuts to emissions and has investigated alternative energy sources, including wind propulsion.

Its 4,500 teu concept design, developed in partnership with OceanWings rigid sail company, and Team Malizia an ocean racing yacht specialist, sees an arrangement of eight rigid sails set between container stacks.

The sails are retractable, using a vertical lift system for six units, while the two masts furthest forward are designed with a hinge which allows them to be stowed ahead of the container stacks allowing for cargo operations to take place.

The vessel would have a 15.5kn average speed, with a “catch up” top speed of 19kn that would allow the vessel to meet schedules should there be delays along the way.

OceanWings was selected as the sail provider because the company has experience with a full-sized vessel with its lightweight sails already in operation.

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Weather routing calculations for more than 100 historical voyages gave the designers the data that would allow them to estimate the voyage savings with the wingsails in place.

Originally the concept vessel was designed for the intra-Latin America trade, but Thiem said the fuel savings were calculated at around 10%, and considered too low, so the group switched their attentions to the transatlantic which offered a far more acceptable 20% fuel consumption reduction.

That led to further considerations for a 6,000 teu six-sail version, which cut the energy output, but meant that interference between sails was also reduced, as well as the capital costs. But the wider and larger ship is more aerodynamically efficient, which offers some compensation.

Asked when these ships would become operational Thiem answered: “These are still concepts, we must get guidance to take the next steps, which would be to develop more detailed pricing with shipyards.”

While that decision has not yet been taken one element that could affect this decision is the cost. “While bulk carrier and tanker operators can order a single vessel to view its efficiency, with liner shipping operators, one ship is not enough, you need at least six to operate a service, which increases the costs.”