VIKING LINE

Viking Line conceptualizes the world’s largest electric passenger-car ferry

Viking Line is preparing to launch entirely emission-free service between Helsinki and Tallinn. The shipping company's groundbreaking vessel concept is proof that a green maritime corridor across the Gulf of Finland could be realized as early as the beginning of the 2030s. Upon realisation, the concept, named Helios, would be the world’s largest electric passenger-car ferry.

The Helios vessel concept developed by Viking Line shows what the world's largest fully electric passenger-car ferry would look like. With a battery capacity of approximately 85–100 megawatt hours (MWh), Helios could transport 2,000 passengers across the Gulf of Finland in just over two hours. The length of the concept vessel is 195 metres, the width 30 metres and the speed approximately 23 knots. The freight capacity on board is approximately 2 kilometres. Compared to the silhouette of traditional vessels, Helios mainly stands out due its lack of a funnel.

Helios is based on a research collaboration between Viking Line and Rauma shipyard as well as other partners. The concept is specifically designed for the Helsinki–Tallinn route, as the 80 kilometre, or 43 nautical mile, route is ideally suited for electric vessel traffic. The electric vessel is always charged when the ship is in port. The vessel requires a charging capacity of over 30 megawatt.

“Helios heralds a new era in maritime transport, just like the first sail, steam, and motor ships did in their time. The concept proves that large-scale emission-free maritime transport is no longer a utopia. The world’s largest fully electric passenger-car ferries could be in operation as early as the beginning of the next decade. We are strongly committed to realizing the ambitious vision that Helios represents,” says Viking Line’s CEO **Jan Hanses**.

Over the years, Viking Line has paved the way for low-emission shipping by investing hundreds of millions of euros in groundbreaking technologies. Viking Grace, delivered in 2013, was the world’s first passenger ship to use both liquefied natural gas and biogas as fuel. In 2022, Viking Grace was paired with an even more climate-smart vessel, Viking Glory. Through these ship investments, Viking Line’s travellers can now choose biofuel for an additional fee, thereby reducing the emissions from their trip by 90 per cent. In addition, Viking Line’s first freight customers have signed agreements to use biofuel. Emission-free shipping in the Gulf of Finland is promoted by the FIN-EST Green Corridor project, launched by the cities of Helsinki and Tallinn, whose founders and members also include the ports of Helsinki and Tallinn, Estonia’s Ministry of Climate and the companies Viking Line, Rederi AB Eckerö and Tallink Grupp.

“It is great that both cities and their ports have committed to creating a green maritime corridor. Electric shipping is not created solely by ship investments. It also requires efficient, reliable charging infrastructure in ports. The home port for the new electric vessels would be Jätkäsaari, where the Port of Helsinki has a development and expansion programme underway until 2032. The progress of this project is extremely important for our own plans,” states Jan Hanses.

Even now, most passenger and freight traffic from the Port of Helsinki is destined for Estonia. According to the Port of Helsinki's forecasts, passenger traffic between the city’s West Harbour and Tallinn will increase from 5.5 million passengers in 2024 to 11.6 million by 2040. Also cargo volumes are expected to grow significantly.

"The Helsinki–Tallinn route performed particularly well last year, and we believe volume will continue to increase – there is strong demand, based on need, for connections between Finland and the Baltics. EU emissions trading fees and tightening regulations place an ever larger burden on fossil fuel-based maritime traffic every year, but emission-free technology would enable us to increase capacity on the route. Our goal is to order two electric ships for the route, which would double our current capacity year-round," says Jan Hanses.

The newly announced electric passenger-car ferry concept serves as a basis for continued planning and for the invitation to tender to shipyards. This spring, Viking Line submitted a funding application to the EU's Innovation Fund for the construction of a ferry.

Viking Helios concept ferry

- Length: Approx. 195 m
- Width: Approx. 30 m
- Power source: Electricity (100%)
- Battery capacity: 85–100 MWh (charging power requirement >30MW)
- Speed: Approx. 23 knots
- Passengers: Approx. 2,000
- Private cars: Approx. 650
- Cargo capacity: Approx. 2,000 freight metres

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