

04 E-FERRY HISTORY, PARTNERS & SPECIFICATIONS

A brief history of the E-ferry project

In 2013, maritime professionals on the island of Ærø, in southern Denmark, came up with the idea of building a fully electric emission-free ferry to replace the aging diesel ferry on the regional route between Søby on Ærø and Fynshav on the island of Als. Through a feasibility study, named Green Ferry Vision, which was supported by the European Regional Development fund, the scope and outline for such project were created by a growing number of professional partners during 2013 and 2014. To accomplish this goal a vessel had to be designed to cover an unprecedented range for an electric ferry and to do it without relying on fossil fuels, even for use in emergency backup systems.

The Municipality of Ærø, the owner of the local ferry operator, Ærøfærgerne, and partners managed to find needed funding in 2015 for the project when the EU's Horizon 2020 research and innovation programme agreed to support the project.

The main objectives of the Horizon 2020 E-ferry Project:

1. To design and build an innovative vessel that is 100% electric and where the main characteristics are energy efficient design, incorporation of lightweight equipment and materials, and state-of-the-art electric only systems with automated high-power charging system.
2. To validate the feasibility and cost effectiveness of the concept to the industry and ferry operators through demonstrating the vessel's ability to cover distances of up to 22 nautical miles on connection(s) in the Danish part of the Baltic Sea that are currently operated by conventional diesel driven vessels.

Several European manufacturers and institutions were approached to help the project by becoming project partners to deliver cutting edge technology and know-how in both technical and regulatory areas.



The dry dock at Søby Værft



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 636027

The E-ferry partners

Ærø Kommune (Municipality of Ærø)

Danfoss Editron

Danish Maritime Authority (Søfartsstyrelsen)

Dansk Brand og Sikringsteknisk Institut

Hellenic Institute of Transport, CERTH/HIT

Leclanché

Rådgivende Skibssingeniører Jens Kristensen ApS

Søby Værft (Søby Shipyard)

Tuco Marine Group



JENS KRISTENSEN ApS
Consulting Naval Architects
Jagtvej 8
DK-5960 Marstal



Design and build

The E-ferry Ellen was designed by the local ship architects at Consulting Naval Architects Jens Kristensen, and built by Søby Værft, the shipyard residing in Søby Harbor, the homeport of the Ellen.

Specifications

Length: 59.13 meters

Gross tonnage: 996 t.

Lightweight: 746 t.

Design draught: 8 feet

Deckspace: 458 m²

Passengers: 147/196

Cars: 31

Service speed: 13.5 kn.

Max. Speed: 14.2 kn.

Main engines: 2x700 kW

Thruster engines: 2x250 kW

Nominal battery capacity: 4.3 MWh

Available battery capacity: 3.8-3.9 MWh

Charging effect: 4 MW

Classification society: DNV GL

