

CARBON NEUTRAL SHIP INNOVATIONS AND RESEARCH PROJECTS



Let us know about your carbon-neutral ship project or solution!

The Finnish maritime industry is faced with great challenges and opportunities as the climate goals and sustainability requirements become stricter. The maritime industry market is global and international competitiveness is based on high-tech know-how. Innovation, development, testing, production and marketing of future solutions require considerable investments and wide-ranging cooperation in the industry.

The Sustainable maritime industry development program led by the Ministry of Economic Affairs and Employment helps meet these challenges and opportunities. One of the ways is to bring together solutions, projects and know-how related to carbon-neutral ships in a digital demonstration. The purpose of the demonstration is to act as a visible competence portfolio of the Finnish maritime industry. Its goal is to help illustrate the cost-effectiveness and sustainability effects of different solutions, as well as the effects of the solutions that reduce the carbon balance of the ship. The goal is that with the help of a digital demonstration it would be possible to calculate the emission reductions produced by different solutions.

The demonstration not only makes the existing visible, but also shows the shortcomings and areas for improvement. The goal is to help find new solutions or needs for innovative solutions throughout the value chain.

The Ministry of Economic Affairs and Employment, in cooperation with Korkia Consulting, collects information on ongoing Finnish research projects and existing solutions to enable and promote carbon-neutral ship. Solutions and projects can be found in multiple parts of the value chain, from the production of structures and interior to the ship's digital operation solutions to maintenance and recycling. The goal of collecting background information is to map out the current situation and areas of improvement.

Join in demonstrating the Finnish maritime industry competence portfolio!

SOLUTIONS SUPPORTING CARBON NEUTRAL SHIP THROUGHOUT THE LIFECYCLE

Examples of Finnish innovations that advance carbon neutral ship throughout the lifecycle



ABB Ability™ OCTOPUS - Marine Advisory System is a unique product family for performance management in marine operations. Through various deployment methods, fuel consumption and emissions are able to be reduced by guiding crew decisions quickly.



Neste Marine™ 0.1 Co-processed is a low-emission solution for maritime professionals, brands and shipping companies, which can reduce greenhouse gas emissions compared to fossil fuels by up to 80 percent during its life cycle.

CARBON NEUTRAL SHIP



NORSEPOWER

Norsepower Rotor Sails provide a reliable and easy-to-operate auxiliary wind propulsion system with a proven savings record. Norsepower Rotor Sails can typically reduce fuel consumption by 5-20%.



WÄRTSILÄ

The **Wärtsilä 25** is a medium-speed 4-stroke marine engine with a future-proof, upgradeable modular structure that makes it easier than ever for you to target net-zero.

RESEARCH PROJECTS SUPPORTING CARBON NEUTRAL SHIP THROUGHOUT THE LIFECYCLE

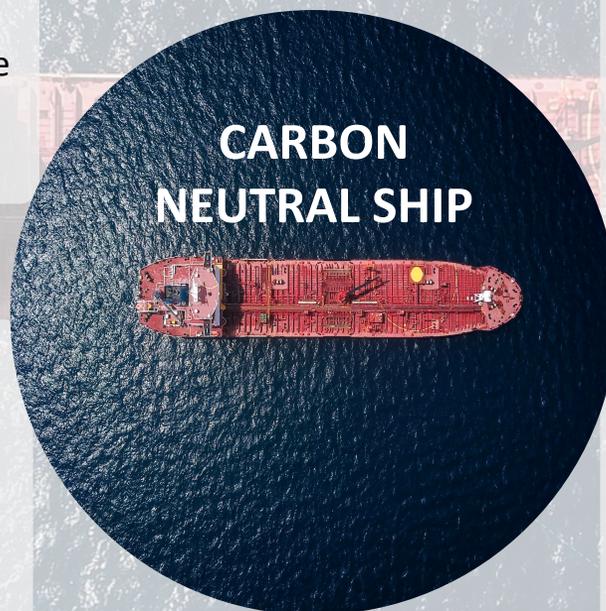
Examples of Finnish research projects that advance carbon neutral ship throughout the lifecycle



CHEK project will develop and demonstrate two bespoke vessel designs – a wind energy optimised bulk carrier and a hydrogen powered cruise ship – equipped with an interdisciplinary combination of innovative technologies working in symbiosis to reduce greenhouse gas emissions by 99% and achieve at least 50% energy savings.



The **NEOLEAP** research and development project brings together representatives of companies, universities, and research institutes to develop innovative and responsible technology solutions on a global scale that aims to secure the competitiveness of the Finnish shipbuilding industry and high-level cruise ship expertise and know-how also in the future. The R&D topics of the project focus on four key areas: the ship itself, shipbuilding, smart technologies, and future drivers.



Sustainable Shipbuilding Concepts project focuses on creating sustainability based value in shipbuilding through designing more sustainable concepts for cruise ships and related systems in a way that the complete network can contribute into more sustainable business processes including material selection, design, manufacturing, social aspects and features.



Zero Emission Marine (ZEM) is a four-year ecosystem project led by Wärtsilä. Our compelling goal is to reach 60% greenhouse gas (GHG) reduction in the maritime by 2030. In addition, all the Wärtsilä Veturi ecosystem products will be carbon-neutral or carbon-negative by 2050.