

Waterborne Transport Projects

Horizon 2020 projects
managed by CINEA and
opportunities for
synergies



FOREWORD

Europe is traditionally a waterborne continent, which has been developing a safe, secure and resource-efficient waterborne transport system for centuries. This system encompasses deep-sea shipping, coastal shipping around Europe and the use of the European inland waterways network. The main challenge for the waterborne transport sector is how to ensure the sustainable development of this system through the optimal use of energy sources and the minimisation of its environmental impacts, such as greenhouse gas emissions. International shipping is responsible for around 3% of global greenhouse gas emissions and the waterborne transport sector still lags behind other transport sectors with respect to reducing emissions.

Considering that waterborne transport moves nearly 90% of all international trade, over 75% of external EU trade and 40% of internal EU trade, the importance of this transport mode for the present and the future of the EU economy is undisputed. The importance of the waterborne transport sector for Europe and the need for continuous improvements in terms of pollutant emissions are also acknowledged as priority in the European Green Deal.

Despite ever-fiercer global competition, Europe remains a world leader in the design, production, and operation of waterborne assets. More than 36% of the global fleet is controlled by European shipping companies. However, for Europe to stay ahead, the entire value chain requires an accelerated creation and deployment of research and innovation solutions.

In this global environment, the Horizon 2020 waterborne transport programme was dedicated to fund a number of innovative solutions in

five key thematic areas addressing the main challenges of the modern waterborne transport system in Europe: infrastructure; energy efficient and zero emission vessels; innovative shipbuilding and complex value-added specialised vessels; safer and more efficient waterborne operations; and new and improved waterborne transport concepts.

The European Climate, Infrastructure and Environment Executive Agency (CINEA) is responsible for the implementation of a wide waterborne transport projects portfolio, ranging from the world's highest range 100% electric ferry to one of the world's first demonstrations of autonomous shipping. In addition, through the Connecting Europe Facility (CEF) programme, the Horizon 2020 waterborne transport projects find opportunities for synergies and further deployment.

This brochure presents a comprehensive overview of the Horizon 2020 waterborne transport projects managed by CINEA, with a total EU contribution of more than €465 million.

Furthermore, examples of synergies with the CEF programme are presented, which further highlights the added value of the work of the Agency in developing green and sustainable waterborne solutions.

I hope you will find this publication informative and interesting.

DIRK BECKERS,
Director, CINEA



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H2020 WATERBORNE PORTFOLIO (2014-2021)

CINEA's Horizon 2020 waterborne portfolio covers projects funded via:

BLUE GROWTH
waterborne transport related topics

2020 GREEN DEAL CALL / AIRPORTS & PORTS TOPIC / PORTS SUBTOPIC

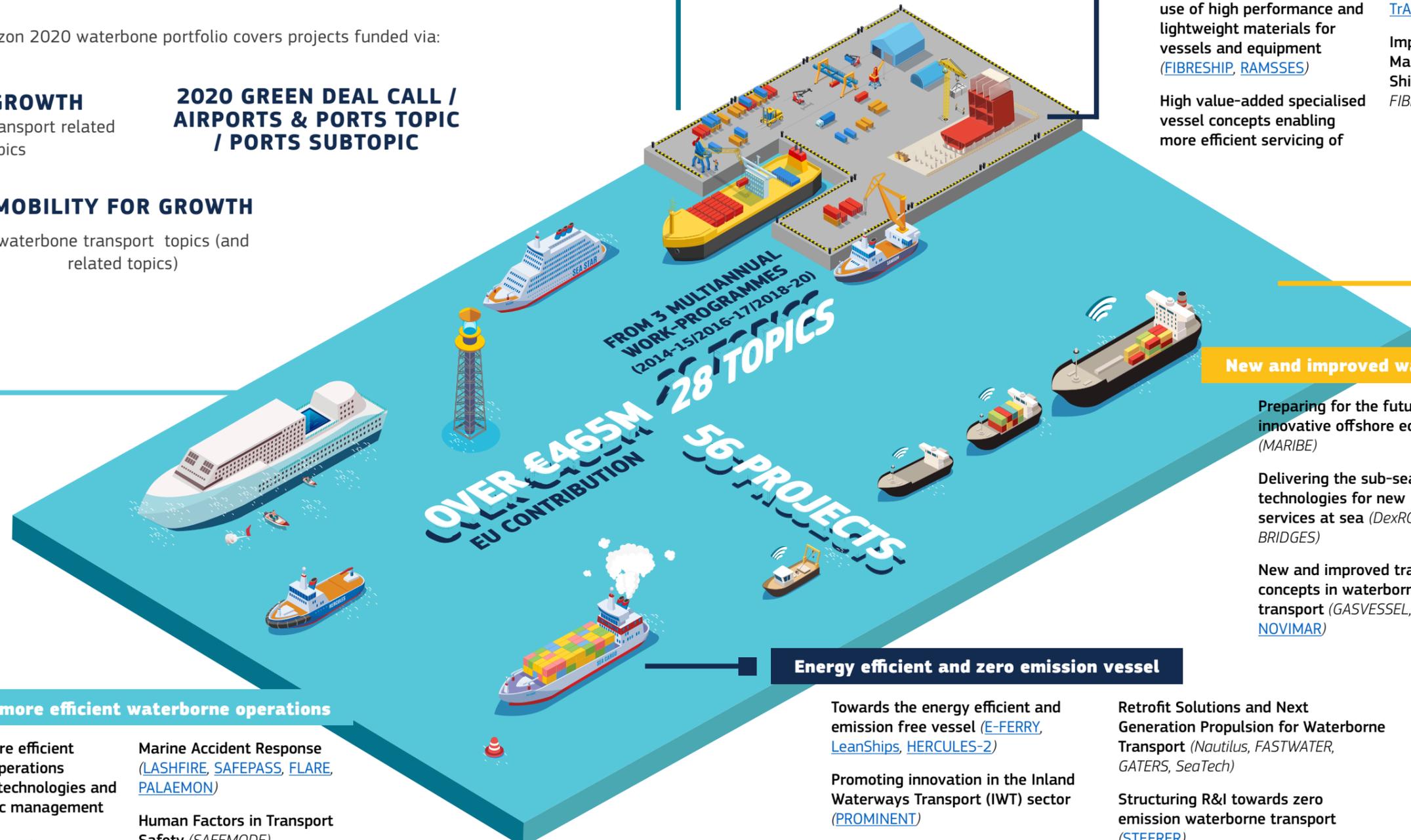
MOBILITY FOR GROWTH
waterborne transport topics (and related topics)

Infrastructure

The Port of the future (*PIXEL, PortForward, COREALIS, DocksTheFuture*)
Green airports and ports as multimodal hubs for sustainable and smart mobility (*PIONEERS, MAGPIE*)

Innovative shipbuilding and complex value-added specialised vessels

System modelling and life-cycle cost optimisation for waterborne assets (*SHIPLYS, HOLISHIP*)
Development, production and use of high performance and lightweight materials for vessels and equipment (*FIBRESHIP, RAMSSES*)
High value-added specialised vessel concepts enabling more efficient servicing of emerging coastal and offshore activities (*LINCOLN, NEXUS*)
Complex and value-added specialised vessels (*HYSEASIII, TrAM, NAVAIS*)
Improved Production and Maintenance Processes in Shipyards (*Mari4_YARD, FIBRE4YEARDS, RESURGAM*)



New and improved waterborne transport concepts

Preparing for the future innovative offshore economy (*MARIBE*)
Delivering the sub-sea technologies for new services at sea (*DexROV, BRIDGES*)
New and improved transport concepts in waterborne transport (*GASVESSEL, NOVIMAR*)
Unmanned and autonomous survey activities at sea (*ENDURUNS*)
The Autonomous Ship (*AUTOSHIP*)
Moving freight by Water: Sustainable Infrastructure and Innovative Vessels (*IW-NET, NOVIMOVE, AEGIS, MOSES*)

Energy efficient and zero emission vessel

Towards the energy efficient and emission free vessel (*E-FERRY, LeanShips, HERCULES-2*)
Promoting innovation in the Inland Waterways Transport (IWT) sector (*PROMINENT*)
Innovations for energy efficiency and emission control in waterborne transport (*AIRCOAT, HYMETHSHIP*)
InCo flagship on reduction of transport impact on air quality (*SCIPPER*)
Ship emission control scenarios, marine environmental impact and mitigation (*EMERGE*)
Retrofit Solutions and Next Generation Propulsion for Waterborne Transport (*Nautilus, FASTWATER, GATERS, SeaTech*)
Structuring R&I towards zero emission waterborne transport (*STEERER*)
Under water noise mitigation and environmental impact (*SATURN*)
Improving impact and broadening stakeholder engagement in support of transport research and innovation (*LASTING, PLATINA 3*)
Decarbonising long distance shipping (*CHEK, ENGIMMONIA*)

Safer and more efficient waterborne operations

Safer and more efficient waterborne operations through new technologies and smarter traffic management (*EfficienSea2, LYNCEUS2MARKET*)
Response to oil spills and marine pollutions (*GRACE*)
Safer waterborne transport and maritime operations (*SEDNA*)
Marine Accident Response (*LASHFIRE, SAFEPASS, FLARE, PALAEMON*)
Human Factors in Transport Safety (*SAFEMODE*)

AIRCOAT

Air Induced friction Reducing ship COATing

The AIRCOAT project is developing a disruptive hull coating that reduces the frictional resistance of ships. The project targets a passive air lubrication technology by implementing the biomimetic Salvinia effect on a self-adhesive foil system. The AIRCOAT-produced permanent air layer reduces ship drag, while acting as a physical barrier between water and the hull surface. In addition to reducing fuel consumption, and thus ship emissions, the air barrier reduces the attachment of marine organisms (biofouling), the release of biocides from traditional coatings into the water, and mitigates ship noise pollution.

So far, novel structuring and replication technologies as well as processes to manufacture large quantities

of AIRCOAT were developed, and more than 800 metres of microstructured foils were produced. Initial laboratory experiments with small samples indicated drag reduction in the range of 10-30%, which are to be verified at larger scales. As expected, partially and strongly depleted air layers showed lower drag reductions. Initial acoustic simulations indicate a strong reduction of ship noise emission even with relatively thin air layers. Prevention of biofouling has been demonstrated for an intact air layer. As expected, this effect was lost when the air layer depleted. The first project phase emphasised the high potential of AIRCOAT as well as the complexity of producing this technology.

AUTOSHIP

Autonomous Shipping Initiative for European Waters

Following the Sustainable Development Goals (SDGs) adopted by the United Nations and European climate change targets, there is increasing market demand for waterborne transport. The AUTOSHIP project paves the way to building and operating two autonomous vessels that will be demonstrated in Short Sea Shipping and Inland Water Ways. The project comprises full-autonomous navigation, self-diagnostic, prognostics and operation scheduling, communication technology enabling a prominent level of cyber security, integrating the vessels into upgraded e-infrastructure.

AUTOSHIP is also pursuing common standards and regulations involving the logistics value-chain,

maritime authorities and decision makers to define the right acceptance criteria, design parameters and cost-effectiveness and to assess the right communication needed for societal acceptance. The project will lead to safer and greener transport in Europe with one of the major outcomes being a shift of goods transport from roads to waterways. The vessels will help ship operators to improve the economy of scale of their investments, to effectively gain competitiveness and renew their fleets. They will reduce costs and improve the efficiency on-board (less fuel and logistic procedures). Interoperability and Internet of Things will increase safety, security and speed of every operation.

SALVINIA FLOATING FERN

1. Development of the surface/foil implementing the Salvinia effect, that is able to trap a layer of air when submerged in water.

2. Apply the AIRCOAT material onto a self-adhesive foil

3. Large-scale production of the AIRCOAT foil

4. Application of the AIRCOAT foil on the hull of ships

AIRCOAT
 info@aircoat.eu | www.aircoat.eu | @AIRCOATProject
 The AIRCOAT project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N° 764553.

PROJECT
Air Induced friction Reducing ship COATing

COORDINATOR
FRAUNHOFER GESELLSCHAFT ZUR FOERDERUNG DER ANGEWANDTEN FORSCHUNG E.V. (DE)

PROJECT DURATION
01/05/2018 - 30/04/2022

EU FUNDING
€5,299,097.38

WEBSITE
<https://aircoat.eu/>

PROJECT
Autonomous Shipping Initiative for European Waters

COORDINATOR
CIAOTECH Srl (IT)

PROJECT DURATION
01/06/2019 - 30/11/2022

EU FUNDING
€20,109,109.13

WEBSITE
<https://www.autoship-project.eu/>



E-FERRY

Prototype and full-scale demonstration of next generation 100% electrically powered ferry for passengers and vehicles

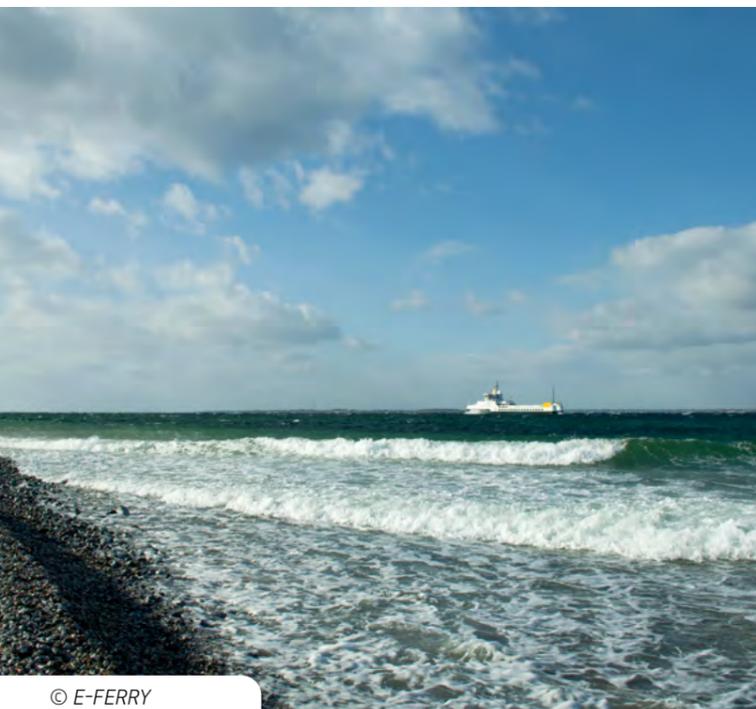
The E-ferry consortium has developed the E-ferry prototype, named E/F Ellen. Ellen is in operation as a car- and passenger ferry in the Danish part of the Baltic Sea, on the route from Søby to Fynshav.

The E-ferry Ellen is 100% electric and hence emission free in operation. She can carry up to 196 passengers and 31 cars over a distance of 22 nautical miles (about 40 kilometres) solely on electricity.

Ellen currently sails 5 trips per day. Before starting the first leg of the day, the batteries are fully charged to 3.8 MWh. The powerful E-ferry charger supplies electricity with a peak charge of 4 MW, thus it can

charge the E-ferry batteries in just one hour. Ellen consumes around 1600 kWh on average, on the two-hour roundtrip from Søby to Fynshav and back.

Upon returning to the homeport of Søby, the crew connects the charger to refill the batteries before the next trip. The fast turnaround doesn't allow for a full recharge, which means that the overall state-of-charge gradually drops during the day. Upon completion of the last trip of the day, the state-of-charge is still around 30%.



© E-FERRY

PROJECT

E-ferry – prototype and full-scale demonstration of next generation 100% electrically powered ferry for passengers and vehicles

COORDINATOR

AERO KOMMUNE (DK)

PROJECT DURATION

01/06/2015 - 31/05/2020

EU FUNDING

€15,141,035.88

WEBSITE

<http://e-ferryproject.eu/>

EFFICIENSEA²

EfficienSea² - Efficient, Safe and Sustainable Traffic at Sea

The EfficienSea² project has created new international standards for safer and more efficient waterborne operations over its three years in operation. A common denominator is that they are based on the groundbreaking communications framework, the Maritime Connectivity Platform, MCP - a prototype of which was developed and tested with various e-Navigation services during the project. The MCP is a concept with a number of associated standards. Different organisations are expected to run MCP instances following these standards, which then together will provide a distributed framework facilitating secure and efficient information exchange. The MCP enables cybersecure Information sharing in

and around the maritime sector for smarter traffic management, providing a comprehensive e-maritime and e-navigation environment, enabling a maritime internet of things. The MCP is an important step in the advances of developing autonomous waterborne transport systems. By the end of EfficienSea², the Korean government committed to run an instance of the MCP. In March 2020, the three major European maritime equipment manufacturers and service providers KONGSBERG, Saab and Wärtsilä created an industry consortium, Navelink, which is also running a MCP instance for secure and efficient digital information exchange in the maritime sector.

PROJECT

EfficienSea² - Efficient, Safe and Sustainable Traffic at Sea

COORDINATOR

SOFARTSSTYRELSEN (DK)

PROJECT DURATION

01/05/2015 - 30/04/2018

EU FUNDING

€9,795,318.16

WEBSITE

<https://efficiensea2.org/>



© EFFICIENSEA²

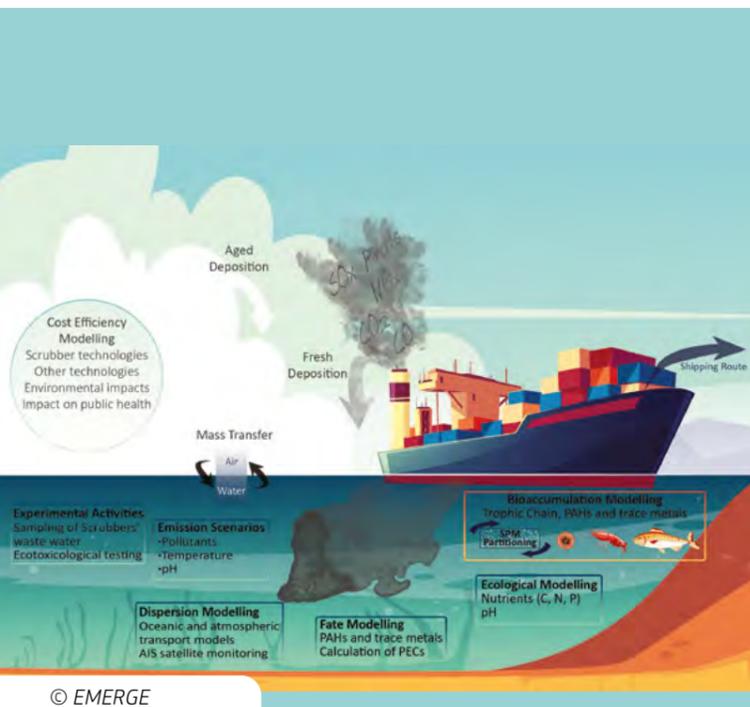
EMERGE

Evaluation, control and Mitigation of the EnviRonmental impacts of shippinG Emissions

The objectives of the EMERGE project are (i) to evaluate the effects of potential emission reduction solutions for shipping in Europe, and (ii) to develop effective measures to reduce the environmental impacts of shipping. The measurements focus on abatement techniques and include emissions to, and concentrations in water, air, and marine biota. The project investigates how available scrubbers reduce the effects of pollution. EMERGE is developing an integrated modelling framework to assess the combined impacts of shipping emissions on the aquatic and atmospheric environments, and the effects on

marine ecosystems.

EMERGE includes five geographical case studies, in different ecologically vulnerable regions, and a mobile onboard case study. The case study regions are (i) Eastern Mediterranean (ii) Northern Adriatic Sea, (iii) the region surrounding the Lagoon of Aveiro, (iv) the Solent Strait and (v) the Öresund Strait. EMERGE will provide recommendations for stakeholders and decision-makers on cost-beneficial options for the sustainable use of shipping.



© EMERGE

PROJECT

Evaluation, control and Mitigation of the EnviRonmental impacts of shippinG Emissions

COORDINATOR

ILMATIETEEN LAITOS (FI)

PROJECT DURATION

01/02/2020 - 31/01/2024

EU FUNDING

€7,493,885.00

WEBSITE

<https://emerge-h2020.eu/>

FIBRESHIP

Engineering, production, and life-cycle management for the complete construction of large-length FIBRE-based SHIPs

The FIBRESHIP project is a revolutionary waterborne project which attempts to develop a new market focused on the design and construction in composite materials of large-length commercial vessels over 500GT (approx. 50m length). The project has overcome the current market challenges and technology gaps to make the building of these innovative fibre-based vessels possible. It has done so by designing three different types of vessels, developing specific tools, building a ship block as a demonstrator, developing guidance notes and recommendations for material selection, structural design, and new production strategies, and fostering an evolution of the regulatory framework in several fora such as International Maritime Organisation (IMO) and European conferences

and exhibitions. The use of these materials anticipates delivering for the maritime stakeholders a significant reduction in the structural weight of the vessel (up to 70%) implying a reduction in bunkering consumption and greenhouse gas emissions as well as other benefits for shipowners such as an increase of payload/passenger capacity and cost reduction of original equipment manufacturer (OEM).

To this end, FIBRESHIP has provided maritime and shipbuilding industry with the necessary design tools, materials selection methodology, production techniques and shipping market analysis to enable the integral construction of large-length ships in composite materials.

PROJECT

Engineering, production and life-cycle management for the complete construction of large-length FIBRE-based SHIPs

COORDINATOR

TECNICAS Y SERVICIOS DE INGENIERÍA, S.L. (ES)

PROJECT DURATION

01/06/2017 - 31/05/2020

EU FUNDING

€8,866,322.75

WEBSITE

<http://www.fibreship.eu/>



© FIBRESHIP

FLARE

FLOODING Accident REsponse

The highest risk for persons on board ships comes with flooding accidents, but consequences may be reduced when appropriate actions are taken. The FLARE project targets a risk-based methodology for “live” flooding risk assessment and control, by developing a risk model suitable for newbuildings and, which is totally new, for existing ships. Innovative technical solutions in ship concepts and equipment are accompanied by proposals for the revision of relevant International Maritime Organisation (IMO) regulations towards a risk-based approach to contain and control risk in passenger ships from flooding incidents, thereby significantly contributing to the safety of both passenger and ship.

The initial project work concentrated on data collection for the analysis of flooding events and development of flooding control measures. Sample ships were selected, operational data was documented and statistically analysed. Analysis of permeabilities and traffic data was carried out. Furthermore, extreme scenarios have been identified and modelled. Finally, numerical models to predict progressive flooding have been selected. Based on this theoretic work, model basin tests have started and a software framework to integrate processes and software tools dedicated to damage stability and survivability assessment in ship design and operation is under development.



© SHUTTERSTOCK

PROJECT

FLOODING Accident REsponse

COORDINATOR

BALANCE TECHNOLOGY CONSULTING GMBH (DE)

PROJECT DURATION

01/06/2019 - 31/05/2022

EU FUNDING

€9,375,730.00

WEBSITE

<https://flare-project.eu/>

GASVESSEL

Compressed Natural Gas (CNG) Transport System

The GASVESSEL project aims to prove the techno-economic feasibility of a new CNG transport concept enabled by a novel patented Pressure Vessel manufacturing technology and a new conceptual ship design, including safe on- and offloading solution. In order to achieve this, the project will first identify and characterise geographic scenarios intended to supply natural gas to Europe and then design the prototyping experimental pilot line for the construction and testing of large dimensions gas cylinders. This will be followed by the construction of the prototyping experimental pilot line, building of the cylinders prototypes, and testing to obtain the certificates from American Bureau of Shipping. The identified scenarios will be used to design and engineer Compressed Natural Gas Ships (CNG Ships).

The project will also design the ships' loading/unloading systems, perform costs and benefit analysis and comparison with other methods of natural gas supply and define hazard issues to be considered and incorporated in the ship and cylinders in order to grant and certify a superior level of safety onboard

and during the gas export operations.

The GASVESSEL project contributes to the Energy Union to become less dependent on energy imports by serving as a flexible interconnector, which enables energy to flow freely across the EU. The project will make it possible to supply natural gas to places where natural gas is not yet a part of the energy supply, e.g. where large investment in regassifiers are not feasible or done (yet) such as the Mediterranean Islands. The concept offers novel cost effective gas transport and hence promising prospects to start using and monetising the huge amount of currently wasted (flared), stranded and associated gas which is not used, while contributing to reducing an important environmental side effect of global oil exploitation.

The validation and proof of concept of the GASVESSEL project is performed by a cost-benefit analysis (financial viability), safety assessment, environmental impact analyses and value chain business cases development in relation to real-life geo-logistic scenarios.

PROJECT	Compressed Natural Gas Transport System
COORDINATOR	NAVALPROGETTI SRL (IT)
PROJECT DURATION	01/06/2017 - 31/01/2022
EU FUNDING	€11,997,162.50
WEBSITE	https://www.gasvessel.eu/



© GASVESSEL

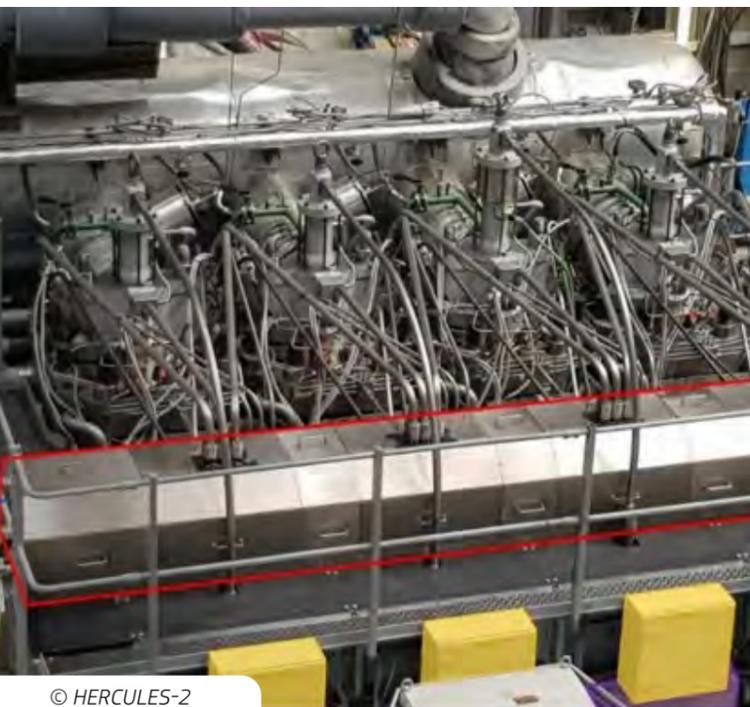
HERCULES-2

Fuel Flexible, Near-Zero Emissions, Adaptive Performance Marine Engine

The HERCULES-2 project is a major collaborative project, which investigated numerous technology directions to make shipping cleaner and more energy efficient. The project represented the follow-up phase of the HERCULES R&D programme (2004-2018) for large engine technologies and adopted a holistic approach to help the shipping industry move in the green direction. The HERCULES-2 major focus was geared towards fuel flexible large marine engines, optimally adaptive to their operating environment. Improved engine performance, operational optimisation, health monitoring and adaptive control over the lifetime of the powerplant were the main challenges faced by the Project, ensuring lifelong reliability and economy. The HERCULES-2 new technologies aimed:

- to reduce gaseous and particulate emissions;
- to increase engine reliability;
- to increase engine efficiency by reducing fuel consumption, CO² emissions and lifecycle costs.

HERCULES-2 integrated the technologies of the previous HERCULES Projects to improve fuel flexibility and formulate new materials for the high temperature applications. Developing abatement technologies for achieving near-zero emission engines was at the heart of HERCULES-2. The advanced after-treatment technologies introduced, provided useful means towards meeting the ECA limit and International Maritime Organisation (IMO) guidelines. The project has delivered exceptional results with significant impact on achieving its aims. Most of the solutions developed in the project are already in the market, exploited by the three main industrial partners, Wärtsilä, MAN-ES & WinGD. HERCULES-2 achievements shall accelerate the shipping industry's transition to increased fuel efficiency and a significantly reduced environmental footprint.



© HERCULES-2

PROJECT

FUEL FLEXIBLE, NEAR -ZERO EMISSIONS, ADAPTIVE PERFORMANCE MARINE ENGINE

COORDINATOR

NATIONAL TECHNICAL UNIVERSITY OF ATHENS - NTUA (EL)

PROJECT DURATION

01/05/2015 - 31/10/2018

EU FUNDING

€16,813,399.63

WEBSITE

www.hercules-2.com

HOLISHIP

HOListic optimisation of SHIP design and operation for life cycle

The HOLISHIP project is the joint effort of 40 European maritime industry/RTD stakeholders, funded under the Horizon 2020 EU framework programme. It sets out to substantially advance ship design and to develop vessel concepts and services for the needs of the 21st century. The project implements an innovative, holistic approach to ship design by the development of integrated design software platforms, while considering all major ship design aspects, namely building and operational cost, energy efficiency, safety, environmental compatibility, and life-cycle impact. The adopted approach considers all major technical and regulatory constraints and enables the assessment of

cost and environmental impact of maritime products for their entire lifecycle. Unique features of the design platform are the automated parametric design, the efficient exploration of the design space, and the fast multi-objective optimisation. The project includes nine, industry driven application/demonstration cases referring to the concept/preliminary and contract design of various types of ships and an offshore platform, the optimisation of their operation and the virtual testing of manoeuvring devices under simulated navigational conditions. Project results will be exploited through a novel joint marketplace established by partners at the end of the project (2020).

PROJECT

HOListic optimisation of SHIP design and operation for life cycle

COORDINATOR

HAMBURGISCHE SCHIFFBAU-VERSUCHSANSTALT GMBH (DE)

PROJECT DURATION

01/09/2016 - 31/12/2020

EU FUNDING

€11,431,746.00

WEBSITE

www.holiship.eu



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HyMethShip

Towards zero emissions shipping

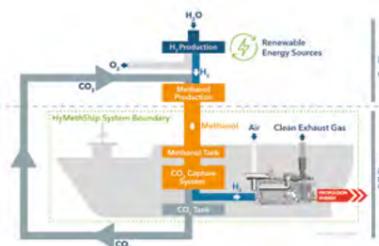
The HyMethShip project follows a new approach for maritime propulsion that is based entirely on renewable energy sources. The project developed and demonstrated a ship propulsion system that will drastically reduce emissions and improve efficiency of sustainable waterborne transport.

To achieve this, HyMethShip innovatively combines a membrane reactor, a CO₂ capture system, a CO₂/Methanol storage system, and a hydrogen-fueled internal combustion engine into one system. The functionality of this radically new propulsion system will be proven in a 1 MW onshore technology demonstration.

The case study vessel layout and propulsion system design take into account all maritime requirements

and safety considerations relevant to current marine applications. A preliminary HAZID study ensured that no design feature or operational process of the HyMethShip system will jeopardise the system implementation on-board a vessel. A preliminary economic and environmental assessment showed that the HyMethShip concept has the lowest overall impact on climate change compared to state-of-the-art and other e-fuels based shipping technologies.

HyMethShip will contribute significantly to IMO's goal of reducing greenhouse gas emissions from shipping by 50% by 2050. The aim is that ideally the system will be further developed by the European shipping industry to extend its global advantage in green shipping solutions.



© HYMETHSHIP

PROJECT

Hydrogen-Methanol Ship propulsion system using on-board pre-combustion carbon capture

COORDINATOR

LEC GMBH (AT)

PROJECT DURATION

01/07/2018 - 31/12/2021

EU FUNDING

€8,438,110.00

WEBSITE

<https://www.hymethship.com/>

PROJECT

Realising the world's first sea-going hydrogen-powered RoPax ferry and a business model for European islands

COORDINATOR

THE UNIVERSITY COURT OF THE UNIVERSITY OF ST ANDREWS (UK)

PROJECT DURATION

01/07/2018 - 31/12/2021

EU FUNDING

€9,276,373.01

WEBSITE

<https://www.hyseas3.eu/>

HYSEASIII

Realising the world's first sea-going hydrogen-powered RoPax ferry and a business model for European islands

The HySeas III project is a development project with the principal objective of developing one of the world's first green hydrogen-fuelled sea-going vehicle and passenger ferry vessels.

The first and most critical stage of the development within the project is the construction and testing of the vessel's powerplant. This aims to develop safely on-shore the proof of the power plant's resilience and practical safety elements in order to ensure the safety of life at sea employing such power plant – as well as de-risking the vessel construction itself.

Vessel design, landside infrastructure and various aspects of the environmental and economic impacts

of switching to one form of zero emission marine transport are also developed within the project.

Early project successes include the development and testing of mini-powerplant which deliver accurate modelling of the full-scale power plant and map out aspects of safety case, the beginning of obtaining regulatory approval for some of the components. Achievements include the development of a comparative environmental model which is believed to be the first of its type published, and which can be extended to determine the likely techno-economics of switching to this type of marine transport fuelling.



LASH FIRE

LASHFIRE for better prevention and fire management on ro-ro ships

Roll-on/roll-off ships (or ro-ro), which carry wheeled cargo such as lorries and cars are an important component of the global transport system. However, the recent increase in the frequency of fires on board ro-ro ships calls for improved fire protection.

LASH FIRE international research project will provide a recognised technical basis for the revision of International Maritime Organization (IMO) regulations, which greatly enhances fire prevention and ensures management of fires on ro-ro ships without recourse to external intervention.

The project will achieve this by developing and demonstrating operational and design solutions which strengthen the fire protection of ro-ro ships in all stages of a fire, and which address current and future challenges, including regulatory issues.

To realize this, LASHFIRE has established two

Maritime Advisory Groups (MAGs) during its first year, each representing views of operators and authorities. LASHFIRE development teams received input focusing on the design, shipbuilding, and operational aspects, which expressed the need for a more integrated and holistic fire management solutions.

LASHFIRE has identified the main sources and causes of fire ignition in ro-ro spaces and potential safety measures. Several on-board investigations of the current praxis of hazards screenings and fire patrol routines took place on ro-pax vessels (roll-on/roll-off passengers).

Finally, LASHFIRE also started a collaboration with Albero, a German project integrating alternative vehicles' safely in ferry traffic, with the aim to exchange knowledge and best practices.



© LASHFIRE

PROJECT

Legislative Assessment for Safety Hazards of Fire and Innovations in Ro-ro ship Environment

COORDINATOR

RISE RESEARCH INSTITUTES OF SWEDEN AB (SE)

PROJECT DURATION

01/09/2019 - 31/08/2023

EU FUNDING

€12,209,148.33

WEBSITE

<https://lashfire.eu/>

LEANSHIPS

Low Energy And Near to zero emissions Ships

The European Innovation Project LeanShips has advanced a range of low-emission, energy-efficient technologies for shipping from research projects to real market-ready innovations. The large project partnership brought together suppliers, ship designers and builders, research institutes, and ship owners. LeanShips aimed to put innovations into practice by carrying out eight demonstrator cases that combined technologies for efficient and less polluting vessels with end-users' needs and requirements. The demonstrators included, among others, using methanol as an alternative fuel, expanding the use

of energy-saving devices to ships with a controllable pitch propeller, and taking a holistic approach to reduce the emissions of passenger ships. The target markets of the project were smaller-midsized ships for intra-European waterborne transport, vessels for offshore operations and leisure and cruise ships. The idea behind the project's demonstrators was to provide the link between the green technology developed in prior projects and large-scale market uptake with solutions that are sufficiently close to market so that ship owners will consider these in their future investment plans.

PROJECT

Low Energy And Near to zero emissions Ships

COORDINATOR

SCHEEPSWERF DAMEN GORINCHEM BV (NL)

PROJECT DURATION

01/05/2015 - 30/04/2019

EU FUNDING

€15,752,357.97

WEBSITE

<https://www.leanships-project.eu/home/>



© LEANSHIPS

LYNCEUS2MARKET

An innovative people localisation system for safe evacuation of large passenger ships

Maritime disasters in recent years are a stark reminder of the imperative need for timely and effective evacuation of large passenger ships during emergency. The Lynceus2Market project addressed this challenge through delivering a revolutionary operational system for safe evacuation based on innovative people localisation technologies. The project provided an operationally validated solution to search and rescue through the development of an innovative system consisting of products and processes that build upon pioneering wireless communications, wearable sensor networks, low power embedded electronics, localisation algorithms and decision support system technologies. The developed technology allows the ship's command to locate and track the passengers

in real time in case of an emergency and provide this information to a centralized control system for an efficient assessment of the situation. At the same time, the overboard system allows passenger and crew localisation after abandoning the ship, for search and rescue purposes. The system was installed on one of the largest cruise ships and was successfully operated by the crew members, resulting in high level of user satisfaction. The project also provided significant technological progress, beyond the state-of-the-art, making a significant contribution towards decreasing the number of fatalities caused by maritime accidents and thus upgrading international maritime safety regimes.



© LYNCEUS2MARKET

PROJECT

An innovative people localisation system for safe evacuation of large passenger ships

COORDINATOR

RTD TALOS LIMITED (CY)

PROJECT DURATION

01/06/2015 - 30/11/2018

EU FUNDING

€7,260,975.00

WEBSITE

<https://www.waterborne.eu/projects/ship-and-shipping-safety/lynceus2market>

NAVAIS

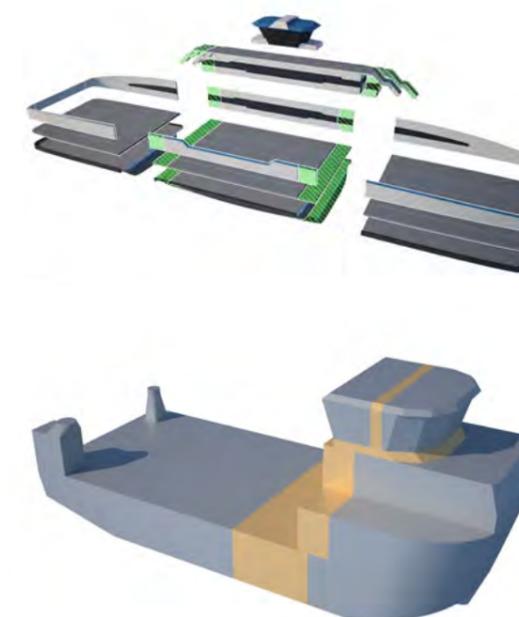
New, Advanced and Value-Added Innovative Ships

To maintain world leadership in complex, value-added and highly specialised vessels, European shipbuilders must develop tailor-made innovative ships that are efficient to design and build. With this in mind the NAVAIS consortium develops a platform-based modular product family approach for the maritime industry. NAVAIS facilitates the transfer from an engineered-to-order to an assemble-to-order business model, which allows shorter process lead times, constant quality, reduced design and production costs. This concept increases efficiency in design and engineering and flexibility in production networks, thereby increasing competitiveness of the European shipbuilding industry.

The NAVAIS innovative solution is the adoption of a platform-based product family and modular product architecture for generic use in shipbuilding, which is demonstrated for full-electric ferries and workboats.

Integration of novel requirements can be achieved through this approach, and in this project demonstrated through integration Underwater Radiated Noise, for which analysis tooling is developed in the course of the project.

Initial achievements are the set-up for primary ship systems, a requirements structure that enables product architectural design and a scenario for the approval procedure for functional modules. As a next step, demonstrators will be developed in the 3DEXPERIENCE® platform for the electric ferry and the multi-use workboat product family.



© NAVAIS

PROJECT

New, Advanced and Value-Added Innovative Ships

COORDINATOR

STICHTING NETHERLANDS MARITIME TECHNOLOGY FOUNDATION (NL)

PROJECT DURATION

01/06/2018 - 31/05/2022

EU FUNDING

€6,589,361.38

WEBSITE

<https://www.navais.eu/>

NOVIMAR

NOVel Inland waterway and MARitime transport concepts

The NOVIMAR project aims to adjust waterborne transport in such a way that it can make optimal use of existing short-sea, sea-river and inland waterways. Its goal is to expand the entire waterborne transport chain further up and into the urban environment by means of the vessel train concept.

The vessel train consists of a manned lead vessel, followed by several vessels of various types and/or sizes with reduced crew level. The innovative concept intends to provide a transport system with increased logistical flexibility in cargo destinations and handling, use of waterways and crew deployment.

NOVIMAR's scope covers various economic and technical research topics. This approach ensures a balanced evaluation of the transport system in terms of its commercial viability. At the same time, project partners will identify the necessary boundary conditions from both a societal and a regulatory point of view. To this end, stakeholder dialogue is an integral part of the project. Extensive bridge simulations, model scale tests and economic calculations done so far have shown the potential of the concept.



PROJECT

NOVel lwt and MARitime transport concepts

COORDINATOR

STICHTING NETHERLANDS MARITIME TECHNOLOGY FOUNDATION (NL)

PROJECT DURATION

01/06/2017 - 30/11/2021

EU FUNDING

€7,923,951.25

WEBSITE

www.novimar.eu

Palaemon

A holistic passenger ship evacuation and rescue ecosystem

The main objective of the PALAEMON project is to develop an integrated system to enhance the process of evacuation from a sinking ship. The system will be composed of a massive evacuation vehicle (MEV) replacing the traditional lifeboats and an IT and communications system that will be installed in the ship, connected to legacy systems and in the MEV to operate in conjunction with the ship systems during the evacuation and independently after the launch. The system encompasses several services and technologies that will be used during the three phases of the operation:

1. risk assessment after incident;
2. support of staff and passengers mustering after the evacuation order (guidance, detection of missing people);

3. and launch of MEV(s) and further rescue operations

PALAEMON integrates the latest communication solution to create a hybrid network that will be available in all conditions. It also incorporates an Unmanned aerial vehicle (UAV) for operations monitoring and communication with the shore and rescue ships. During the whole project, the developed solutions will be assessed as regards the legal framework to verify their acceptability.



PROJECT

A holistic passenger ship evacuation and rescue ecosystem

COORDINATOR

AIRBUS DEFENCE AND SPACE SAS (FR)

PROJECT DURATION

01/06/2019 - 31/05/2022

EU FUNDING

€8,943,775.00

WEBSITE

<https://palaemonproject.eu/>

PROMINENT

Promoting innovation in the Inland Waterways Transport (IWT) sector

The PROMINENT project was a multi-annual research and innovation programme for inland navigation which connected the economy, the environment and safety for inland navigation with a clear focus on cost-efficient solutions for reduction of air pollution and greenhouse gas emissions.

PROMINENT delivered technical options and solutions for increased environmentally friendly navigation as well as increased competitiveness of inland navigation in logistics networks, both addressing new and existing vessels carrying various cargo types or passengers. In the field of jobs and skills, PROMINENT enhanced the integration of inland waterway transport expertise in logistics educational programs. Moreover, through user

experiences of stakeholders, developers, inspection, and crew prototypes were tested to digitalise journey and crew related administrative processes on board of inland vessels. Further underlining the importance and impact of the project, currently, numerous results of PROMINENT are used in follow-up initiatives to learn how inland navigation can most effectively contribute to the ambition of efficient, climate neutral and zero-pollution mobility by 2050. For example, by introducing digital tools, cost-efficient and zero-emission technology and incentives and a financing mechanism for sector-wide introduction of greening technology.



© PROMINENT

PROJECT

Promoting Innovation in the Inland Waterways Transport Sector

COORDINATOR

STICHTING STC-GROUP (NL)

PROJECT DURATION

01/05/2015 - 30/04/2018

EU FUNDING

€6,249,997.75

WEBSITE

www.prominent-iwt.eu

RAMSSES

Realisation and Demonstration of Advanced Material Solutions for Sustainable and Efficient Ships

The RAMSSES project focuses on the recognition and an established role of advanced materials in the European maritime industry. Shipyards and suppliers are demonstrating that the application of innovative materials in their products and technologies is possible. 13 different demonstrators are designed and built, covering a broad range of materials, ship types and sizes, e.g. small work boats and ultra large cruise ships. The entire process chain is covered, including components, equipment, ship integration and repair. Tests on board or in similar conditions will show that the applications have a high level of technology maturity.

In addition, RAMSSES aims to improve the innovation capabilities of the European maritime industry in

general. The desire to introduce innovative approaches such as new designs or materials is often impeded by established regulations tailored to established solutions. The proof of an equivalent safety level needs to be provided from case to case, requiring a significantly higher effort compared to the use of conventional solutions which follow prescriptive rules. Together with other European initiatives, RAMSSES has entered into dialogue with the International Maritime Organisation (IMO) to develop approaches for a further development of regulations, respecting legitimate safety needs and at the same time enabling accelerated approval procedures.

PROJECT

Realisation and Demonstration of Advanced Material Solutions for Sustainable and Efficient Ships

COORDINATOR

CETENA S.p.A. Centro per gli Studi di Tecnica Navale (IT)

PROJECT DURATION

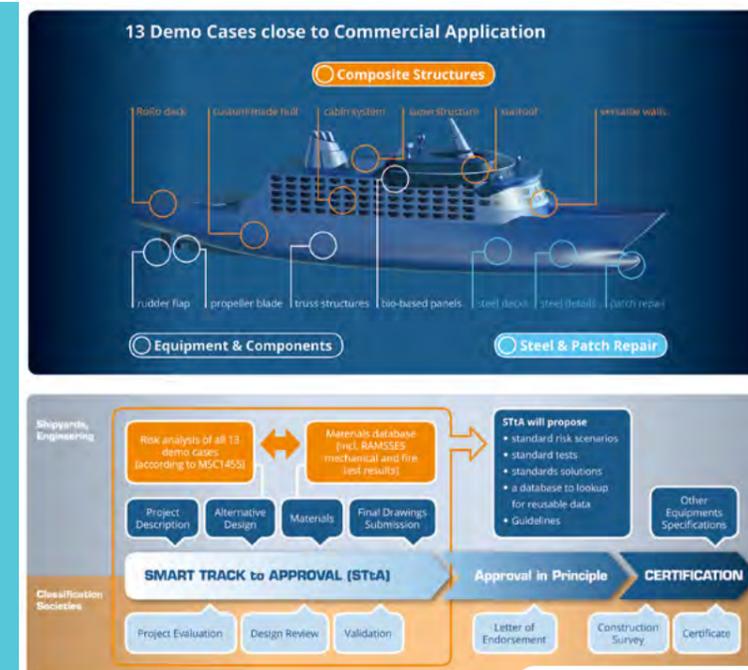
01/06/2017 - 30/11/2021

EU FUNDING

€10,799,440.65

WEBSITE

<https://www.ramsses-project.eu/>



© RAMSSES

SafePASS

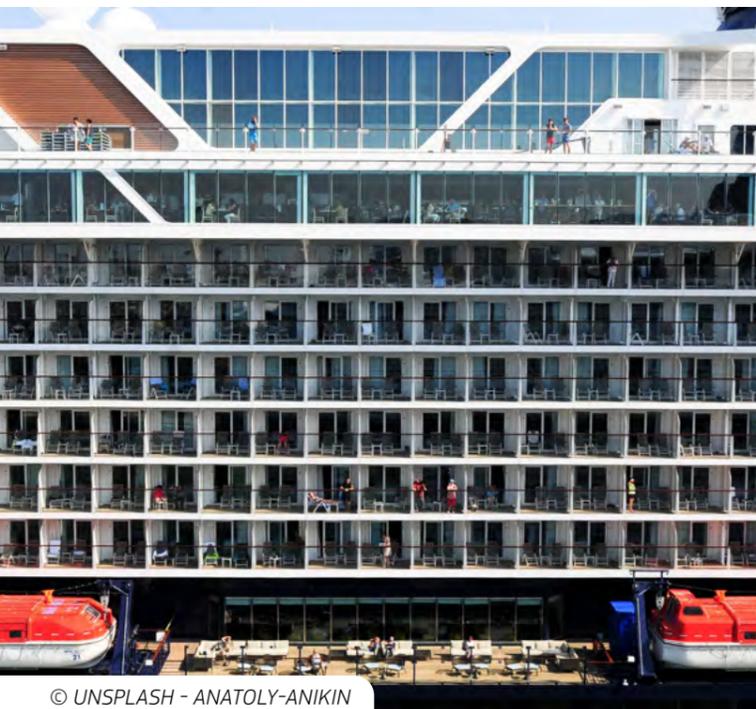
Next generation of life Saving appliances and systems for saFE and swift evacuation operations on high-capacity PASSenger ships in extreme scenarios and conditions

The SafePASS project aims to spearhead worldwide the next generation of Life Saving Appliances and systems (LSAs) for safe and swift evacuation operations on high-capacity passenger ships in extreme scenarios and conditions. With a revolutionary development and application of smart devices and novel LSAs, the ship evacuation and abandonment will be safer and faster for all demographic groups. Particularly, SafePASS develops innovative systems that will collectively monitor, process, and inform, during emergencies, both crew and passengers of the optimal evacuation routes. SafePASS is focusing on the five main ecosystems:

- next Generation LSAs (a new smart life jacket, design of lifeboats, novel access arrangements and evacuation passages and novel architectural structures);

- smart environment elements (integrating localisation sensors, wearables for passengers-integrated lifejackets, smart wristband and mobile app);
- core Platforms;
- Risk modelling; and
- an evidence-based assessment and socio-technical modelling methodology;

The consortium consists of fifteen partners representing all categories of stakeholders and eight European countries. Academic institutions, classification societies, innovating SMEs, a shipyard, LSA manufacturers and a cruise operator have teamed up in this effort.



© UNSPLASH - ANATOLY-ANIKIN

PROJECT

SafePASS Horizon2020

COORDINATOR

NATIONAL TECHNICAL UNIVERSITY OF ATHENS - NTUA (EL)

PROJECT DURATION

01/09/2019 - 31/08/2022

EU FUNDING

€8,270,366.25

WEBSITE

www.safepass-project.eu

SCIPPER

SHIPPING CONTRIBUTIONS TO INLAND POLLUTION PUSH FOR THE ENFORCEMENT OF REGULATIONS

The SCIPPER project aims to deploy state-of-art and next-generation measurement techniques to monitor emissions of vessels under their normal operation. The main objectives of SCIPPER are:

- to provide evidence on the performance and capacity of different techniques for shipping emissions monitoring and regulations' enforcement;
- to assess the impacts of shipping emissions on air quality, under different regulatory enforcement scenarios;
- in order to address the many and largely unexplored problems related to vessels emissions monitoring, SCIPPER deploys state-of-art and next-generation measurement techniques to monitor emissions of

vessels, such as on-board sensors, sniffers, optical remote techniques, Unmanned Aerial Systems (UAS) and satellite systems.

Experimental ship emission measurements will be combined with advanced plume dispersion and chemical transport models to estimate current ship-induced air pollution and predict the impact of various degrees of compliance to major port areas in the EU.

SCIPPER objectives are achieved in five real-world experimental campaigns, involving actual vessels at major sea areas and large ports in the EU (Ports of Marseille and Hamburg, Baltic Sea and the English Channel).

PROJECT

SHIPPING CONTRIBUTIONS TO INLAND POLLUTION PUSH FOR THE ENFORCEMENT OF REGULATIONS

COORDINATOR

ARISTOTELIO PANEPISTIMIO THESSALONIKIS (EL)

PROJECT DURATION

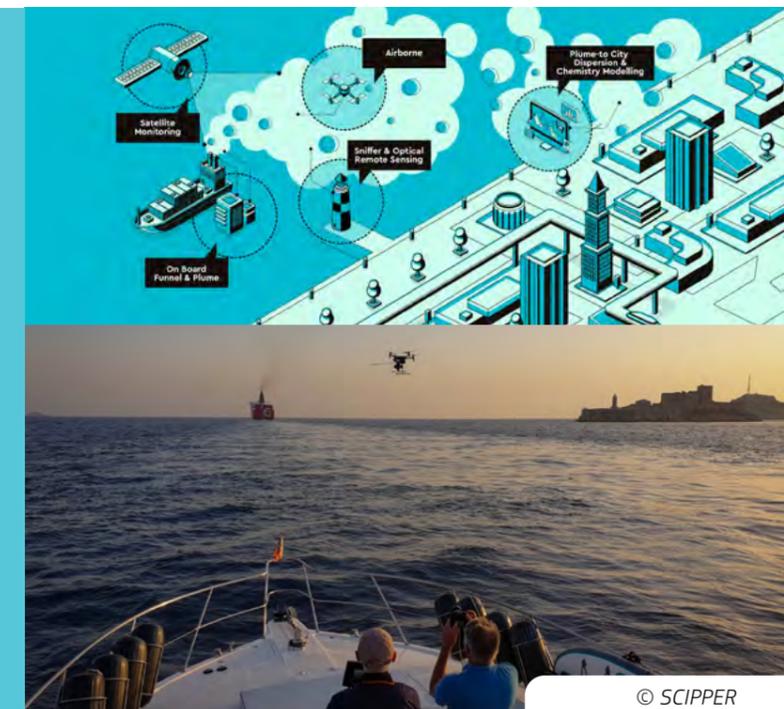
01/05/2019 - 30/04/2022

EU FUNDING

€4,987,619.25

WEBSITE

<https://www.scipper-project.eu/>



© SCIPPER

SEDNA

Safe maritime operations under extreme conditions: the Arctic case

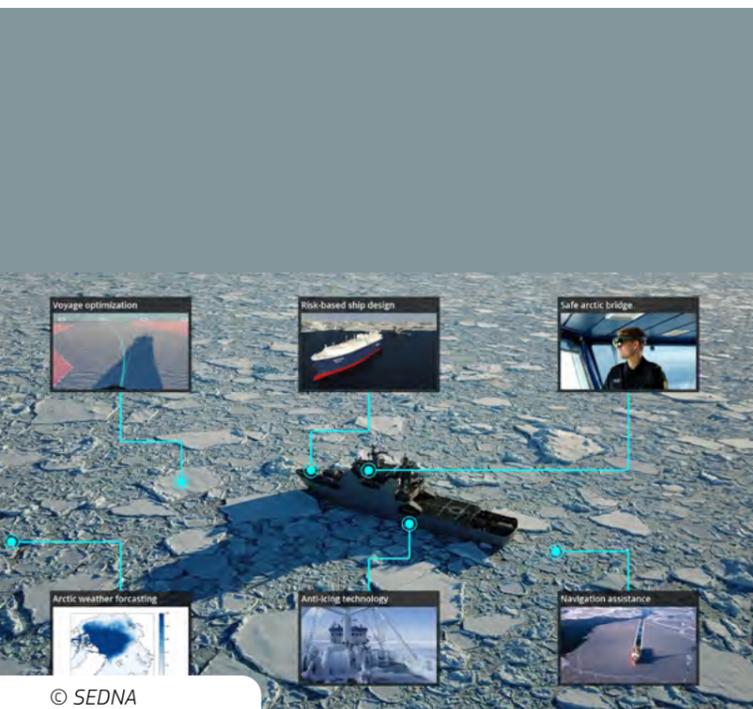
As more of the Arctic waters become navigable due to global warming, ship traffic in the Arctic regions is increasing. This brings about significant operational challenges in the region which SEDNA has addressed with five key innovations:

1. a human-centred “Safe Arctic Bridge” for ice-going vessels built on a novel augmented reality platform and integrated into a VR enabled bridge simulator;
2. optimised Arctic voyage planning, combining ice monitoring and weather forecasting, that feeds into the Arctic Bridge and supports more efficient route design and vessel usage;
3. anti-icing solutions for vessels that prevent ice build-up on the ship structure, using, for example,

electro-thermal or nature-inspired coatings;

4. a novel ‘risk-based design framework’ for Arctic ships that supports safe and sustainable Arctic shipping by providing the means for holistic risk/goal-based design of Arctic ships along the lines of the IMO Polar Code;
5. the first ever CEN workshop agreement on the safe bunkering of methanol fuelled vessels, to promote the use of Low Flash Point Fuels in Arctic shipping.

Taken together, these initiatives contribute to ensuring clean and safe maritime transport in this sensitive area.



PROJECT

Safe maritime operations under extreme conditions: the Arctic case

COORDINATOR

BMT GROUP LTD (UK)

PROJECT DURATION

01/06/2017 - 30/11/2020

EU FUNDING

€6,498,752.50

WEBSITE

<https://www.sedna-project.eu/>

SHIPLYS

Ship Lifecycle Software Solutions

The SHIPLYS project supports ship designers, shipbuilders, and ship-owners at the tendering stage to:

- improve their capability to reduce time and costs of design and production;
- obtain adequate estimates of work content, raw materials and costs, as well as adequate production process planning of the work to be carried out;
- reliably produce better ship concepts through virtual prototyping;
- meet the increasing requirements for LCCA (Life Cycle Cost Analysis), environmental assessments, risk assessments and end-of-life considerations as differentiators.

The project developed the SHIPLYS software platform

and associated software suite (called ‘SHIPLYS Applications’) to address three use cases presented by the shipyards in the consortium. The platform enables the integration of Applications that have a ‘glue code’ allowing for such integration. One use case required the optimisation of a hybrid propulsion system used in a short route ferry ship, another required support during early design stages of new building ship through inputs from risk-based life cycle assessments, and the third required support during early planning and costing of ship retrofitting accounting for life cycle costs and risk assessments. These use cases were from Ferguson Marine Engineering Ltd (UK), Varna Marine Engineering Ltd (Bulgaria) and Astilleros de Santander SA (Spain) respectively.

PROJECT

Ship Lifecycle Software Solutions

COORDINATOR

TWI LIMITED (UK)

PROJECT DURATION

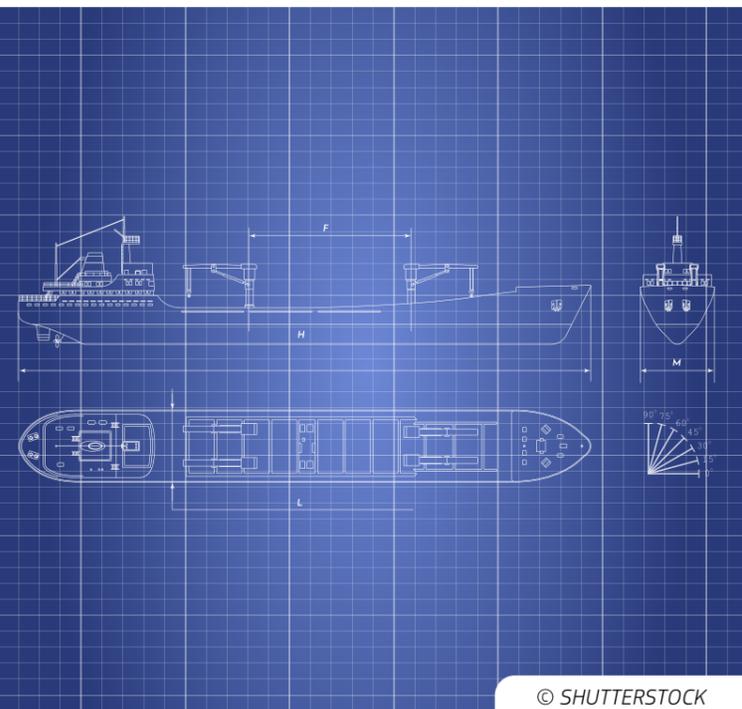
01/09/2016 - 31/08/2019

EU FUNDING

€6,144,150.00

WEBSITE

<http://www.shiplys.com/>



STEERER

Structuring towards zero-emission waterborne transport

The STEERER project will coordinate the establishment and communication of a Strategic Research and Innovation Agenda and an Implementation Plan towards zero-emission waterborne transport, in cooperation with all key stakeholders needed to facilitate this transformation. In the definition of STEERER, in addition to cutting green house gas emissions, all harmful environmental emissions, water pollution and noise emissions have to be eliminated. STEERER's mission is to bring the various initiatives and sectors' stakeholders together to join forces for a combined effort with the maximum impact for the climate, people's health, and Europe's economy. STEERER is coordinated by the Waterborne Technology Platform (www.waterborne.eu), with the participation of a total of seven partners from six EU countries.

In sum, STEERER aims to:

- jointly set emission targets towards 2050 (including targets for 2025 and 2030);
- develop a Strategic Research and Innovation Agenda to be able to reach these targets in time;
- develop an Implementation Plan to reach the targets in due course, while staying competitive and offering a valid business case;
- develop and implement a communication campaign, aimed at broader awareness of the waterborne transport sector and its commitment towards zero-emission transport.

TRAM

Transport: Advanced and Modular

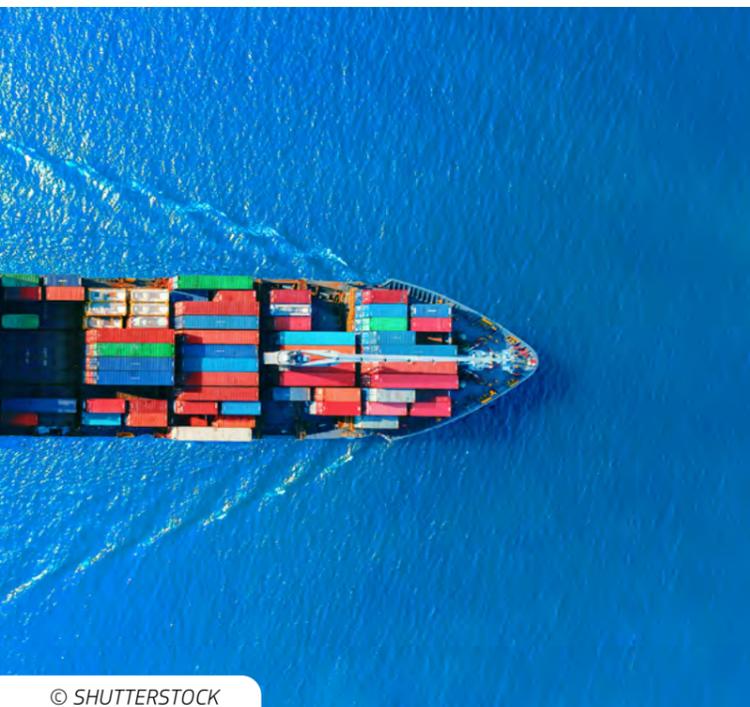
The TrAM project's main objective is to develop and validate a concept for waterborne transport by implementing modular design and production methods, with a main focus on electrically powered vessels operating in protected waters. The project will lead to 25% lower construction costs and 70% reduction in engineering hours for new vessels operating with zero emissions.

The project will develop a toolkit of methods and software tools to be used by the industry when designing and constructing inshore vessels: passenger ferries, vessels for cargo transport on inland waterways, and workboats. The proposed modular concept is

validated and refined through a demonstrator and two replicators, of which one will be a physically built, zero emissions passenger ferry that will service a commuter route into the city of Stavanger in Rogaland County from 2022.

The design of the demonstrator vessel has been completed together with a detailed plan for production which started in 2021. The first model tests of the hull and propulsion system have been performed.

Furthermore, the process of developing demands and identifying limitations for the replicators in London and Belgium has progressed further.



© SHUTTERSTOCK

PROJECT

STRUCTURING TOWARDS ZERO EMISSION WATERBORNE TRANSPORT

COORDINATOR

SHIPYARDS AND MARITIME EQUIPMENT ASSOCIATION OF EUROPE (BE)

PROJECT DURATION

01/12/2019 - 30/11/2022

EU FUNDING

€1,498,687.50

WEBSITE

<https://waterborne.eu/projects/coordination-projects/>

PROJECT

Transport: Advanced and Modular

COORDINATOR

ROGALAND FYLKESKOMMUNE (NO)

PROJECT DURATION

01/09/2018 - 31/08/2022

EU FUNDING

€11,741,430.63

WEBSITE

<https://tramproject.eu/>



© TRAM

Synergies with Connecting Europe Facility

CINEA implements most of the Connecting Europe Facility (CEF) programme budget, in total € 28.3 billion out of € 30.4 billion for the 2014-2020 period (€ 23.2 billion for transport, € 4.5 billion for energy, and € 0.6 billion for telecommunications). The CEF Transport programme objectives are to remove bottlenecks, provide missing links, and ensure sustainable and efficient transport systems. The programme also promotes integration and interconnection of transport modes, as well as digital mobility solutions.

Within the Connecting Europe Facility, support is given to the maritime sector through numerous funding priorities including Motorways of the Sea, projects on the Core & Comprehensive network, Multimodal logistic platforms, Innovation, Urban Nodes as well as the Synergy Priority. Throughout the 2014-2020 funding period, CEF Transport has funded in total 152 Actions benefiting the maritime transport sector, corresponding to EUR 1.58 billion of actual CEF transport investments. Actions include port infrastructure development, alternative fuels facilities, the environmental upgrade of maritime vessels, facilitating multi-modality through the hinterland connectivity as well as improvement of maritime access to ports.

Out of these, the Motorways of the Sea as well as the Innovation priorities contribute to greening the shipping with Actions that retrofit vessels with clean fuel propulsions, pilot environmental upgrade technologies and install On-shore Power Supply connections for vessels.

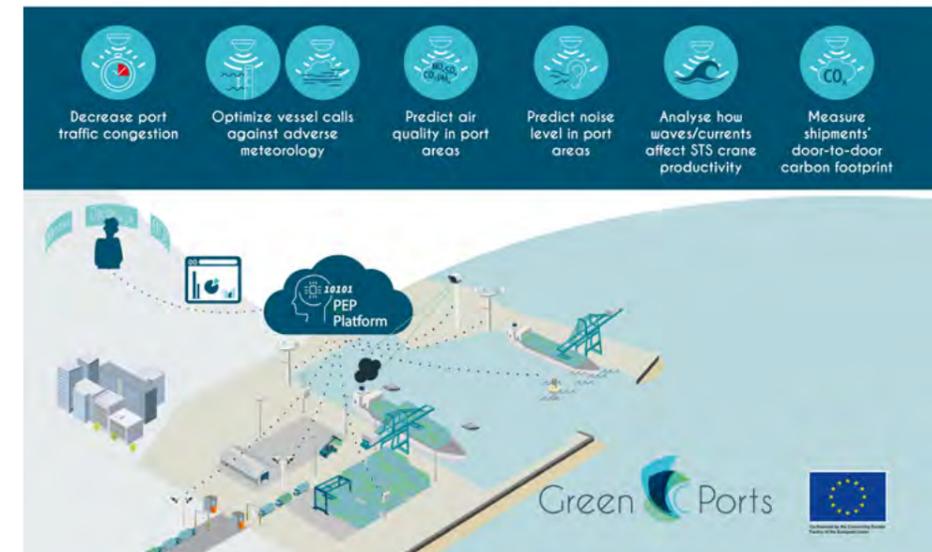
The Connecting Europe Facility intends to prioritise Actions with high Technology Readiness Levels (TRL) achieved through Horizon 2020 support. This approach will guarantee a synergy effect of EU funding in the future to even better address the needs of the waterborne sector. It is envisaged that the future new technologies could initially be developed under H2020 Programme and further tested in larger operational conditions under CEF. Ultimately, this would all lead to a market roll-out at a much larger scale with a continuous EU financial support at all technological levels.

Green C Ports

The GREEN C Ports Action pilots the use of sensors, big data platforms, business intelligence tools and artificial intelligence at the ports of Valencia, Venice, Piraeus, Wilhelmshaven and Bremerhaven, thus contributing to the future roll out of these technologies in the market.

More specifically the project aims at:

- Upgrading existing sensor networks with new sensors at the pilot ports
- Implementing a Port Environmental Performance (PEP) IT platform that will receive real time data from the sensor networks and from existing port systems
- Reducing the impact of port operations on their cities
- Monitoring emissions from ports and vessels
- Increasing the efficiency of port operations and optimising handling of cargo in ports
- Facilitating access and exit of cargo in and out of ports.
- Communicating effectively case studies results and the main benefits of the technologies piloted



PROJECT

Green C Ports

COORDINATOR

FUNDACIÓN DE LA COMUNIDAD VALENCIANA PARA LA INVESTIGACIÓN

PROJECT DURATION

01/04/2019 – 31/03/2023

EU FUNDING

€3,577,854

WEBSITE

<https://greencportsproject.eu/>

STM Validation

Sea Traffic Management

Sea Traffic Management (STM) connects the maritime world in real time through data exchange among selected parties such as ships, service providers and shipping companies. STM-services allow personnel on-board and on shore to make decisions based on real-time information. These services enable more just-in-time arrivals, right steaming, reduced administrative burden and decreased risk related to human factors.

In the STM Validation Project, the theoretical definition work carried out in MONALISA 2.0 was taken into practice by establishing large-scale test beds for Sea Traffic Management in the Nordic region and in the Mediterranean Sea. In these test beds, Voyage Management, Flow Management and Port Collaborative Decision Making were tested and validated in practice. An infrastructure for the information exchange in the test beds was set up.

311 ships representing different market segments and several shore-based services were upgraded with STM capability. Nine ports have been participating. The systems, developed by different market-leading manufacturers were tested in everyday operations. The information exchanged in testbeds included voyage plans, navigational warnings, port call message and text messages. In addition, route messages were



sent to other ships within AIS range. The following operational services were implemented in the testbeds: Nordic Pilot Route Services, Baltic Navigational Warning Service, Route optimisation service, Winter Navigation Service, Port call optimisation service, ship-to-ship route exchange, SAR information services and Enhanced monitoring service. Services that could not be tested in day-to-day operations, were tested in simulation campaigns.

PROJECT

Action 2014-EU-TM-0206-S "STM Validation Project"

PROJECT DURATION

01/01/2015 - 30/06/2019

EU FUNDING

€21,488,717

WEBSITE

<https://ec.europa.eu/inea/en/connecting-europe-facility/cef-transport/2014-eu-tm-0206-s>

Zero Emission Ferries

A green link across the Öresund

In the very busy maritime link connecting the comprehensive Trans-European Transport (TEN-T) network ports of Helsingør (DK) and Helsingborg (SE), this project aimed at converting two existing RoPax ships - originally driven by marine gasoil - to plug-in, all-electric powered operation using water cooled batteries, charged with onshore electricity in both ports.

The battery system on-board was designed for a 100% electrical supply with an energy storage of 4160kWh. The batteries are installed on the top of the ferries, together with two casings of transformers, converters, and cooling equipment. The diesel power generators have been kept as back-up.

In conjunction with the ship fitting, the required on-shore power supply and charging installations in the ferry terminals have been realised. Two power supply towers, equipped with fully automatic laser robots, have been installed on each side, connecting the vessels calling at the port and guaranteeing 5 to 9 minutes effective charging process at a maximum of 10MW.

Crews have been trained on high voltage battery management as well as on operation of electrical system, cooling water system, control system and alarm system.



Key goals achieved

- Both ferries are able to run on close to 100% green energy, saving up to 13 500 tons CO₂ per year per ship, totalling a potential reduction by 27 000 tons CO₂ per year.
- Reduction in noise level and vibrations in the engine room from 110 DB to 65 DB, contributing to an increased comfort level for passengers and crew.
- Reduction of noise level in the ports, contributing to an improved environment for both commercial and civil residents in the proximity of the ports.
- Improvement of safety on board, thanks to water cooled batteries installed on top of the ships instead of within the super structure of the ships. The chosen batteries contain 24 cells and every cell is isolated, preventing a thermal runaway in one cell to spread to another cell.
- Energy efficiency, thanks to heat pumps which extract the heat generated by the batteries and reuse it to heat up the vessel.
- This is a pioneering project with very good impact on emissions cuts and a huge step forward to ensure less fuel leakage, smoke, and noise.

PROJECT

Action 2014-EU-TM-0489-S "Zero Emission Ferries - a green link across the Öresund"

PROJECT DURATION

01/11/2014 - 31/12/2017

EU FUNDING

€13,150,000.00

WEBSITE

<https://ec.europa.eu/inea/en/connecting-europe-facility/cef-transport/2014-eu-tm-0489-s>

CINEA IN BRIEF

The European Climate, Infrastructure and Environment Executive Agency has been established by the European Commission to implement parts of EU funding programmes for transport, energy, climate action, environment and maritime fisheries and aquaculture.

CINEA has a multinational team, organised in four departments.

Seven European Commission's Directorates-General oversee CINEA's activities:

- » DG Mobility & Transport (MOVE)
- » DG Energy (ENER)
- » DG Research & Innovation (RTD)
- » DG Climate Action (CLIMA)
- » DG Environment (ENV)
- » DG Maritime Affairs and Fisheries (MARE)
- » DG Regional and Urban Policy (REGIO)

Providing added value to beneficiaries

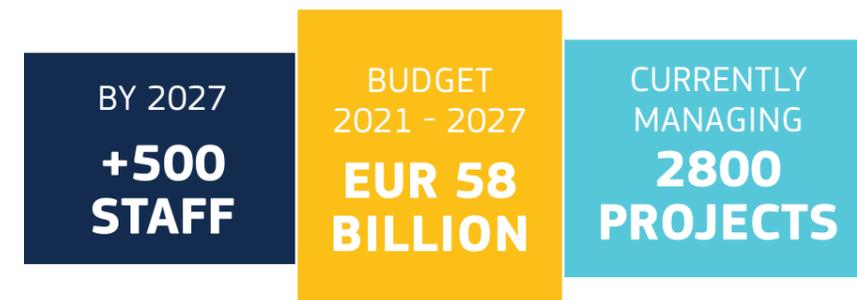
CINEA's long-standing experience in programme management provides the beneficiaries with:

- » Simplified access to EU funding opportunities
- » Promotion of project results and achievements for increased visibility of EU actions and promotion of the programmes
- » Guidance and technical support in project management, financial engineering, public procurement, and environmental legislation in close collaboration with beneficiaries
- » Streamlined and harmonised procedures for a better use of EU funds and maximised programme efficiency, such as shorter payment times and faster response rate
- » Efficient evaluation procedures, user friendly and transparent call documentation, and customised IT tools to support applicants.

Supporting the European Commission

The Agency is also supporting the policy makers and the European Commission with:

- » Relevant feedback on programme implementation as input to policymaking
- » Developing synergies between programmes to bridge the gap between R&I results and infrastructure development
- » Bringing innovative ideas, concepts and products to implementation
- » Building significant economies of scale



European Climate, Infrastructure and Environment Executive Agency (CINEA)

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