

PROJECT

SeaTech

Next generation short-sea ship dual-fuel engine and propulsion retrofit technologies

Funding: European (Horizon 2020)

Duration: Jun 2020 - May 2023

Status: Ongoing

Total project cost: €6,478,472

EU contribution: €4,999,243



Call for proposal: H2020-MG-2019-TwoStages

[CORDIS RCN : 229504](#)

Objectives:

The SeaTech consortium is proposing to develop two symbiotic ship engine and propulsion innovations, that when combined, lead to an increase of 30% in fuel efficiency and radical emission reductions of 99% for NO_x, 99% for SO_x, 46% for CO₂ and 94% for particulate matter. The innovations will be characterized by high retrofitability, maintainability and offer ship owners a return-on-investment of 400% due to fuel and operational cost savings.

The proposed renewable-energy-based propulsion innovation is the bio-mimetic dynamic wing mounted at the ship bow to augment ship propulsion in moderate and higher sea states, capturing wave energy, producing extra thrust and damping ship motions.

The proposed power generation innovation is based on the idea of achieving ultra-high energy conversion efficiency by precisely controlling the auto-ignition of the fuel mixture at every operating point of the engine for achieving radically reduced emissions.

The ultimate objective of the project is to upscale both technologies, demonstrate them in relevant environment and finally model the expected complementarities and synergy effects of deploying both innovations on a short-sea vessel scenario by extrapolating demonstration data with the help of a bespoke Advanced Data Analytics Framework.

The project partners envisage to commercialize both symbiotic innovations in the European and Asian short-sea market by 2025, followed by the adjacent deep-sea market. Assuming only 10% of EU short-sea vessels would be retrofitted with SeaTech, this would result in CO₂ savings of 32.5 million tons annually, which equals the emissions of 200.000 passenger cars/year. Further impact includes savings of EUR 85.2 billion in health and climate change damages due to lower emissions, the creation of +100 jobs at the project partners with a cumulative net profit of EUR 820 million in the first 5 years post-commercialisation, and the indirect creation of 250 new jobs in the EU shipyard industry.

Parent Programmes:

[H2020-EU.3.4. - Horizon 2020: Smart, Green and Integrated Transport](#)

Institute type: Public institution

Institute name: European Commission

Funding type: Public (EU)

Lead Organisation:

Wartsila Netherlands Bv

Address:

HANZELAAN 95
8017 JR ZWOLLE

Netherlands

Organisation Website:

<http://www.wartsila.com>

EU Contribution: €474,589

Partner Organisations:

Universitetet I Tromsoe

Address:

HANSINE HANSENS VEG 14
9019 TROMSO
Norway

Organisation Website:

<http://uit.no/>

EU Contribution: €591,187

Wartsila Finland Oy

Address:

Tarhaajantie 2
65380 Vaasa
Finland

EU Contribution: €2,047,880

National Technical University Of Athens

Address:

Heron Polytechniou 9 (polytechnic campus)
15780 ZOGRAFOS
Greece

Organisation Website:

<http://www.martrans.org>

EU Contribution: €1,137,161

University Of Southampton

Address:

Highfield
Southampton
SO17 1BJ
United Kingdom

Organisation Website:

<http://www.soton.ac.uk>

EU Contribution: €314,368

Liewenthal Electronics Ltd

Address:

KOIDU 50
10142 TALLINN
Estonia

EU Contribution: €251,647

Huygens Engineers Bv**Address:**

JAN TINBERGENSTRAAT 336
7559 ST HENGELO
Netherlands

EU Contribution: €143,036

Utkilen As**Address:**

STRANDGATEN 197
5811 BERGEN
Norway

EU Contribution: €39,375

Technologies:

Ship propulsion
Hybrid drive for hybrid
propulsion

Development phase: Research/Invention

STRIA Roadmaps: Vehicle design and manufacturing
Water transport (sea &

Transport mode: inland)

Transport sectors: Passenger transport, Freight transport

Transport policies: Environmental/Emissions aspects

Geo-spatial type: Other