



SEASTEMA is partner in the “ENGIMMONIA” project: Sustainable technologies for future long distance shipping towards complete decarbonisation

Testing on board of vessels clean energy solutions to make EU shipping sector lighthouse in maritime pollution reduction

On May 1st 2021, the project ENGIMMONIA officially started and the kick-off meeting of the project was organized virtually on May 4th-21st.

ENGIMMONIA Project aims to develop and test innovative solutions that focus on two main pillars: i) promote the global introduction of alternative fuels (ammonia) in shipping sector reducing their environmental impact, ii) transfer to maritime sector clean energy technologies robustly demonstrated for terrestrial application (e.g. waste heat recovery, renewables, etc.) in order to reduce vessels' emission.

ENGIMMONIA will indeed study the benefits of using a carbon-free fuel like ammonia (that in any case could have a GHG impact due to N₂O emissions that should be properly treated by an Exhaust After Treatment System (EATS) to be developed in the project) in vessel engines also coupling its benefits/performances with other clean energy technologies like: (1) waste heat recovery solutions based on ORC and absorption chiller for the production of electricity and space cooling respectively, (2) renewables integration on board thanks to the installation of PV composite surface easily installable on vessel structural parts, (3) on board fuel/energy/heat management optimization via real time Energy Management System. Such technologies will be moved to marine sector also from a regulatory/business point of view.

To do so ENGIMMONIA technologies will be demonstrated at TRL>5 in real scale engines (MAN) and on board of three vessels: an oil tanker (FAMOUS), a shipping vessel (DANAOS) and a ferry (ANEK) thus proving their replicability on board of different type of vessels. To guarantee ENGIMMONIA innovations wide acceptance, maritime sector's key players are involved in the project while other will interact as stakeholders, also supporting IMO and IACS initiatives at policy/regulatory level.

In this way, ENGIMMONIA consortium composed by 21 partners from 9 countries under RINA Consulting coordination, will demonstrate a rich portfolio of clean energy solutions towards a full decarbonization goal, promoting Renewables on board and the optimization of on-board energy assets.

SEASTEMA will develop and implement its Energy Management System to evaluate how new installed systems (ORC, Adsorption Chiller, PV Solar Face, MAN engine) can reduce fuel consumption and CO₂ emissions.

SEASTEMA on board data acquisition & monitoring system will be installed on the demo-vessels to collect and analyze various measurement data and to give a real-time support to operations.

The main target is to implement this platform to evaluate best practices following main parameters: vessel performance propulsion, energy consumption management and environmental footprint.

ENGIMMONIA was funded by the European Commission in the framework of Horizon 2020 research and innovation program Grant Agreement 955413 in line with the commitment to decarbonize the shipping sector targeting ambitious decarbonisation goals set by IMO.

Main information:

Start Date: 01/05/2021

End Date: 30/04/2025

Overall budget: € 9 500 000

Project Coordinator: RINA CONSULTING SpA (Italy)

Project Partners: NATIONAL TECHNICAL UNIVERSITY OF ATHENS (Greece), Consiglio Nazionale delle Ricerche (Italy), TECHNISCHE UNIVERSITÄT MÜNCHEN (Germany), UNIVERSITÀ DEGLI STUDI DI GENOVA (Italy), ARISTOTELIO PANEPISTIMIO THESSALONIKIS (Greece), FUNDACION TECNALIA RESEARCH & INNOVATION (Spain), DANMARKS TEKNISKE UNIVERSITET (Denmark), LUNDS UNIVERSITET (Sweden), POLITECNICO DI MILANO (Italy), ORCAN ENERGY AG (Germany), METIS CYBERSPACE SOCIETE ANONYME SOFTWARE AND ELECTRONIC SYSTEMS (Greece), Fahrenheit GmbH (Germany), C-

SEASTEMA

Società per Azioni a socio unico

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Useful Link: <https://cordis.europa.eu/project/id/955413>

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