PROJECT

HyShip

DEMONSTRATING LIQUID HYDROGEN FOR THE MARITIME SECTOR

Funding: European (Horizon 2020)

Duration: Jan 2021 - Dec 2025

Status: Ongoing

Total project cost: €10,796,560

EU contribution: €7,993,942

Call for proposal: H2020-JTI-FCH-2020-1

CORDIS RCN : 232496

Background & policy context:

The proposal, HyShip, is a response to topic “FCH-01-6-2020: Demonstration of liquid hydrogen as a fuel for segments of the waterborne sector”, in the “Fuel Cells and Hydrogen Joint Undertaking”. We propose the development and validation of a 2MW fuel cell liquid hydrogen ship, used in a hydrogen bunkering and supply chain, along with developing business models and the innovation ecosystem for multiple vessels and European regions.

Objectives:

This proposal involves the development and validation approaches to build (3MW) and scale (to 20MW) fuel cell approaches that lower operational cost (capex) and design cost of LH2 PEM operations. We will integrate the technical solutions in a larger socio-technical system, in cooperation with linked projects and considerable investments that the project will help generate, with the result of providing what could be the first European maritime supply chain for LH2. This is helped by having the demonstrator as one of two planned sister ships that will connect a new hydrogen production facility with LH2 demand in a series of vessels. Most of these new vessels are in planning stages, and one of them is now built for operation in September 2021 (which then will be the first LH2 ship in operation, with a smaller 400 kW system, by consortia member Norled).

HyShip combines the state of the art in ship design (building on the RHODA-method to incorporate logistics and fuel supply in the design process), intelligent energy management systems (lowering capex) and a range of novel conceptual designs of LH2 systems. The project will generate considerable value for Europe, both as its generic approaches will lower cost and time for new vessel projects, but also through its initiative to initiate a scalable distribution system where operators have stable and low-cost access to CertifyHy’ed Green H2. Behind the project is a combination of leading expertise on LH2, energy systems, business models and ship design. Industry partners cover the energy system (Kongsberg Maritime), LH2 systems.

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)

Other programmes: FCH-01-6-2020 Demonstration of liquid hydrogen as a fuel for segments of the waterborne sector

Lead Organisation:

Wilh Wilhelmsen Holding Asa

Address:
STRANDVEIEN 20
1366 LYSAKER
Norway

EU Contribution: €4,675,038

Partner Organisations:

Dnv Gl Se

Address:
BROOKTORKAI 18
20457 HAMBURG
Germany

EU Contribution: €88,636

Kongsberg Maritime As

Address:
Strandpromenaden 50
3183 Horten
Norway

EU Contribution: €702,275

Equinor Energy As

Address:
FORUSBEEN 50
4035 STAVANGER
Norway

Organisation Website:
http://www.statoil.com

EU Contribution: €0

Persee

Address:
12 PL FONTAINE
39130 PONT DE POITTE
France

EU Contribution: €107,888

Air Liquide Norway As

Address:
DRAMMENSVEIEN 64B
3051 MJONDALEN
Norway

EU Contribution: €0

Norled As

Address:
BOREHAUGEN 1
4004 STAVANGER
Norway

EU Contribution: €253,750

Eidgenoessische Technische Hochschule Zuerich

Address:
Raemistrasse 101
8092 ZUERICH
Switzerland

Organisation Website:
http://https://www.ethz.ch/de.html

EU Contribution: €363,500

"national Center For Scientific Research ""demokritos"""

Address:
END OF PATRIARCHOU GRIGORIOU E AND 27 NEAPOLEOS STREET
15341 AGIA PARASKEVI
Greece

Organisation Website:
http://www.demokritos.gr

EU Contribution: €248,500

Maritime Cleantech

Address:
MEATJONNSVEGEN 74
5412 STORD
Norway

EU Contribution: €425,625

Lmg Marin France

Address:
32 RUE DE METZ
31000 TOULOUSE
France

EU Contribution: €618,363

Diana Shipping Services Sa

Address:
AVENIDA FEDERICO BOYD PISO 12 EDIFICIO UNIVERSAL
PANAMA
Panama

EU Contribution: €42,306

Stolt Tankers B.v.

Address:
WESTERLAAN 5
3016CK ROTTERDAM
Netherlands

EU Contribution: €51,188

University Of Strathclyde

Address:
Richmond Street
Glasgow
G1 1XQ
United Kingdom

Organisation Website:
http://www.strath.ac.uk

EU Contribution: €416,875

Technologies:

Fuel cells and hydrogen fuel
Development of new Fuel Cells and Hydrogen (FCH) technologies

Development phase: Validation

Electric vehicle batteries (and energy management)
Vehicle energy management systems

Development phase: Validation

Ship propulsion
Hybrid propulsion for vessels

Development phase: Validation

Fuel cells and hydrogen fuel
Offshore floating platform for hydrogen refuelling and production

Development phase: Validation

STRIA Roadmaps: Vehicle design and manufacturing
Transport mode: Water transport (sea & inland)
Transport sectors: Passenger transport, Freight transport
Transport policies: Safety/Security, Other specified
Geo-spatial type: Other