Synthetic methanol for shipping decarbonisation

GENERAL PROJECT PRESENTATION

POSEIDON - GA NUMBER 101117616

21.10.2024

Funded by
the European Union

THE POSEIDON PROJECT

Coordinator: Research institute EIFER based in Karlsruhe, Germany

POSEIDON long project name: Propulsion Of Ships with E-methanol In favour of the Decarbonisation Of Naval transport

Total budget: 12,6 M€

Funding: The European Commission is co-funding the project. Swiss partner WinGD receives funding from the the Swiss State Secretariat for Education, Research and Innovation

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KEY FACTS

48 months from September 2023 to August 2027

19 partners from France, Germany, Greece, Italy, Spain, Sweden and Switzerland

The project is co-funded with nearly **€10 million** by the European Commission

2 pilot sites in Valencia and Thessaloniki to demonstrate the value chains based on e-methanol as fuel for shipping

POSEIDON PARTNERS

8 industrial partners: EDF, ICODOS, Fincantieri, Isotta Fraschini Motori - IFM, Winterthur Gas & Diesel - WinGD, Global Omnium, CAO Hellas Natural Chemicals, CAO Hellas Macedonia

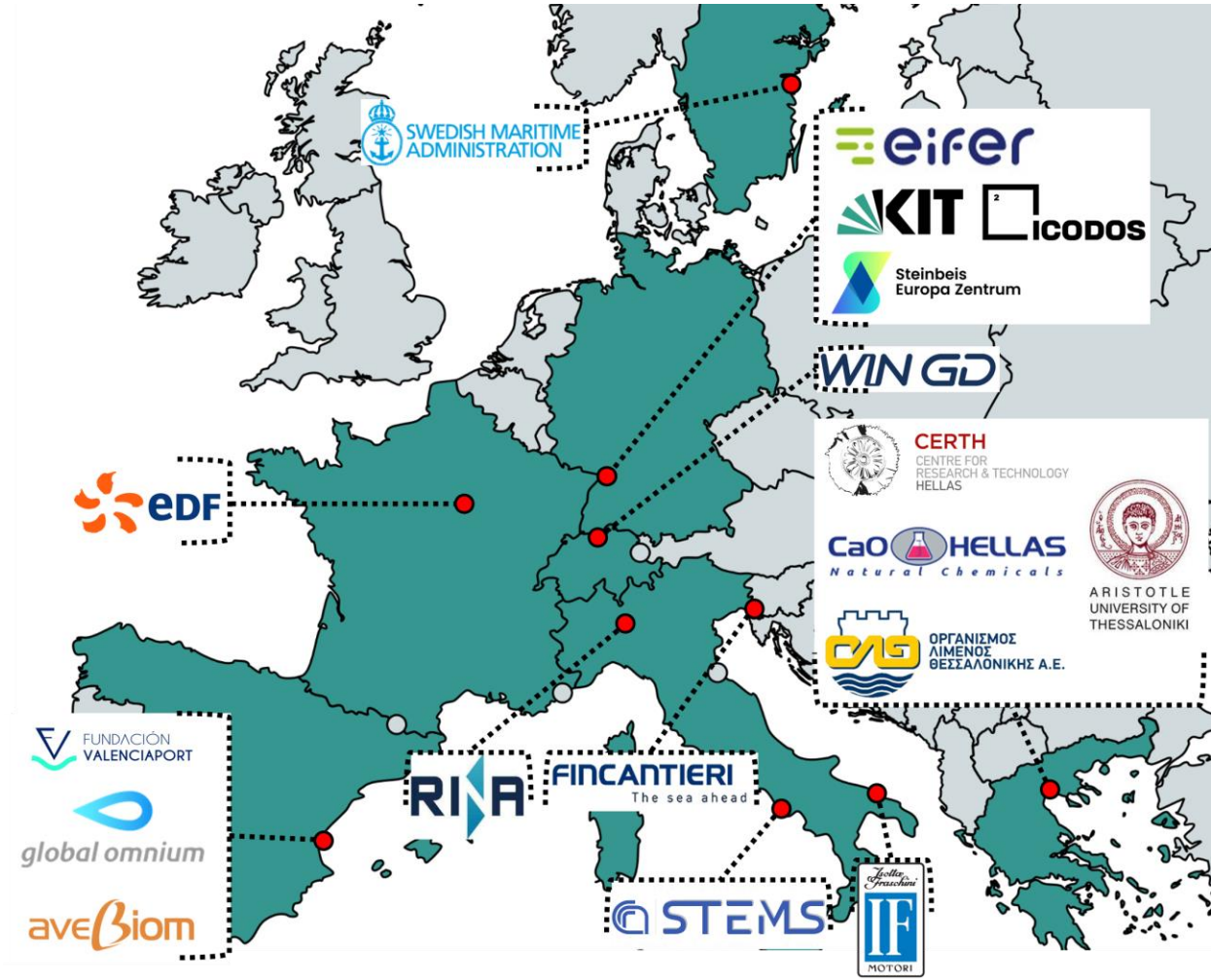
5 research partners: EIFER, KIT, Aristotle University of Thessaloniki, CERTH, CNR-STEMS

2 ports: Fundación Valenciaport, Port of Thessaloniki – ThPA S.A.

2 business support organisations: RINA, Steinbeis Innovation gGmbH

1 association: AVEBIOM

1 public agency: Swedish Maritime Administration

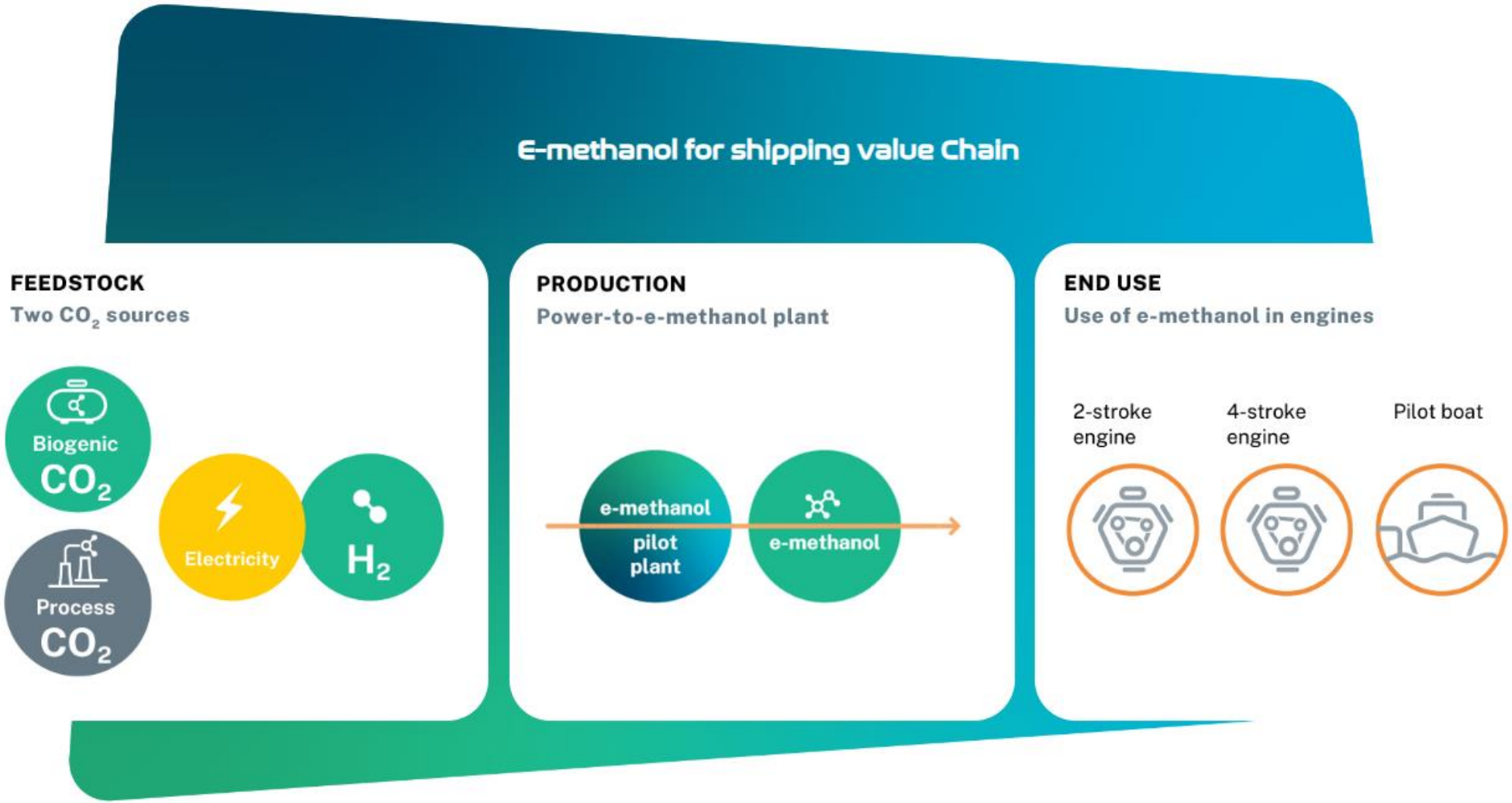


MAIN OBJECTIVES

The overall goal of the POSEIDON project is to prepare the implementation of local value chains based on e-methanol as fuel for shipping in the ports of Valencia and Thessaloniki.

- **1st objective** is to build and test an innovative TRL7 e-methanol prototype plant based on a novel concept including CO_2 capture and filtration and production of renewable e-methanol,
- **2nd objective** is to establish two communities of practice in Thessaloniki and Valencia to collect feedback and strengthen collaboration at local level,
- **3rd objective** is to assess impacts of the value chain implementation through detailed technical, economic, environmental and social assessments,
- **4th objective** is to develop local roadmaps outlining the steps to be taken by stakeholders to implement the value chain in Valencia and Thessaloniki after project end,
- **5th objective** is to regularly share project activities, progress and achievements with academia, industry, policy makers and other relevant stakeholders to foster public acceptance.

VALUE CHAIN TO BE INVESTIGATED



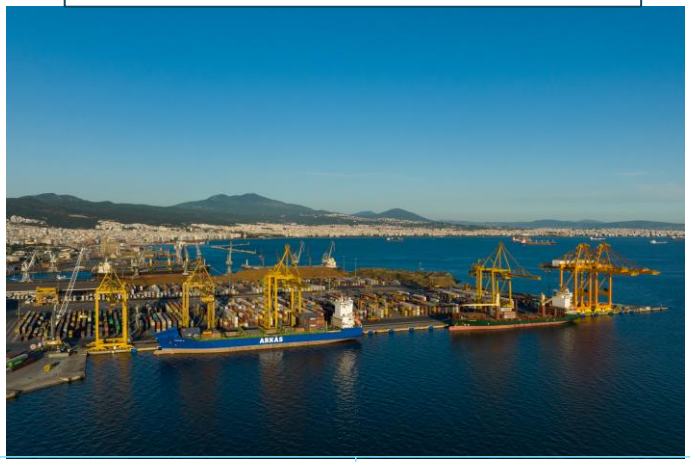
FEEDSTOCK

Two CO_2 valorisation routes will be explored: biogenic CO_2 in Valencia and process CO_2 in Thessaloniki

Use case Valencia – biogenic CO_2 from wastewater treatment plant

Port	Valencia
Sea basin	Mediterranean Sea
Port's area	5.6 km²
Yearly cargo traffic	79 million tons (2022)
Direct employment	17.973

Use case Thessaloniki - process CO_2 from lime plant



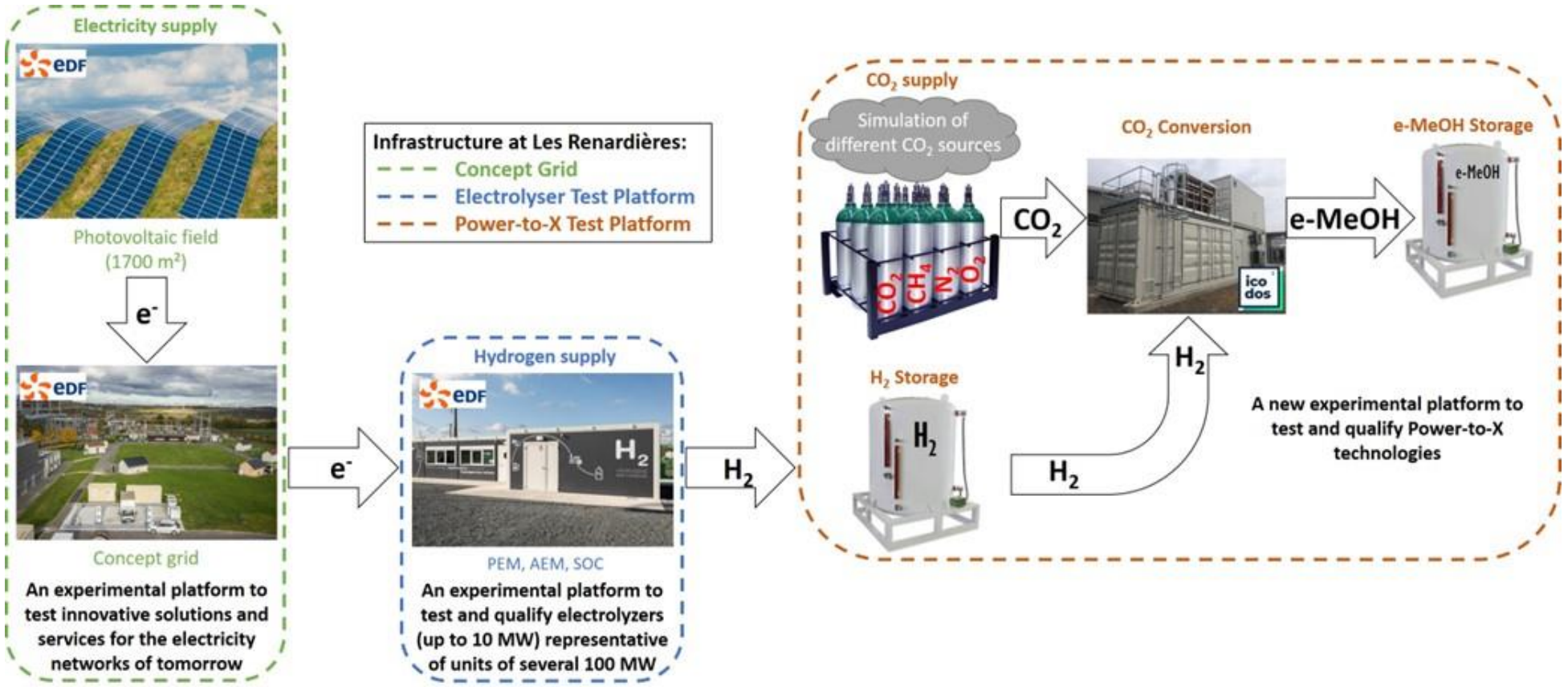
Port	Thessaloniki
Sea basin	Aegean Sea
Port's area	1.5 km²
Yearly cargo traffic	7.3 million tons (2023)
Direct employment	525

PRODUCTION

Development of a TRL7 power-to-methanol prototype plant and demonstration in test platform

POSEIDON consortium in front of proof-of-concept methanol plant developed by partner KIT and licensed to partner ICODOS, installed at the Energy Lab of KIT in Karlsruhe, Germany'

Development of a power-to-methanol prototype plant and demonstration in test platform



EDF test platform to be adapted and used to test the e-methanol prototype from ICODOS

END USE

Testing of produced e-methanol in 2-stroke and 4-stroke engine and pilot boat

WIN GD
Winterthur Gas & Diesel

2-stroke engine

Isotta Fraschini Motori
a FINCANTIERI Company

4-stroke engine

SWEDISH MARITIME ADMINISTRATION

Pilot boat

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THANK YOU FOR YOUR ATTENTION.

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