



Welcome to H2SHIPS

Welcome to the very first newsletter of the Interreg North-West Europe project H2SHIPS! Our Newsletters will bring you insights into our project activities, news from related projects, current developments in the hydrogen world and upcoming events. The project started off in July 2019 and is swiftly gathering speed, having just held an internal kick-off meeting followed by a public launch event. Both took place in a sunny Oostende (BE) between 26th-27th August 2019.

H2SHIPS in a Nutshell

The Interreg North-West Europe project H2SHIPS will demonstrate the **technical and economic feasibility** of **hydrogen bunkering** and **propulsion for shipping** and will identify the conditions for successful market entry for these technologies. Two pilot projects will be implemented as part of H2SHIPS: A hydrogen powered port vessel will be built in **Amsterdam** and in **Oostende** a hydrogen refuelling system will be developed and tested. A further major output will be an action plan for the implementation of an H2SHIPS pilot on the river Seine in Paris in 2022.

H2SHIPS will demonstrate the added-value of hydrogen for water transport and develop a blueprint for its adoption across North-West Europe which can avoid the considerable CO₂, CO_{2eq} and particle emissions arising from shipping.

By the end of the project H2SHIPS expects to have created the necessary conditions for uptake of its technologies by 2% of the fleet renewal (retrofit or new) with positive impacts on cross-sector industry uptake. This will not just lead to emission reductions but also to the creation of several jobs every year.

Key Project Data:

- Total budget of € 6.33 million
- receives € 3.47 million from Interreg North-West Europe between 2019 and 2022
- has 13 Partners from 5 countries
- is coordinated by Europäisches Institut für Energieforschung (EIFER).

www.nweurope.eu/h2ships

H2SHIPS Introduces Itself

The H2SHIPS-Project brings together stakeholders from science, industry, port authorities and NGOs in North-West Europe, all determined to tackle emissions from shipping.

In each Newsletter H2SHIPS will introduce a partner in detail, starting here with the Lead Partner.

A Snapshot of H2SHIPS' Lead Partner EIFER

EIFER (Europäisches Institut für Energieforschung EDF-KIT EWIV) is a joint research institute founded by Electricité de France (EDF) and the Karlsruhe Institute of Technology (KIT). EIFER employs more than 100 scientists and works on projects at international scales with a specific focus on Germany and France. The institute provides interdisciplinary expertise for the development of sustainable energy strategies for cities and regions. EIFER follows a holistic approach towards the energy transition incorporating technological and socio-economic considerations.

The Institute develops innovative multi-energy systems in a wide range of readiness levels from experimental to operational stages. The technological expertise of EIFER covers innovative solutions based on biomass, geothermal energy, district heating systems and, most importantly, low carbon hydrogen systems.

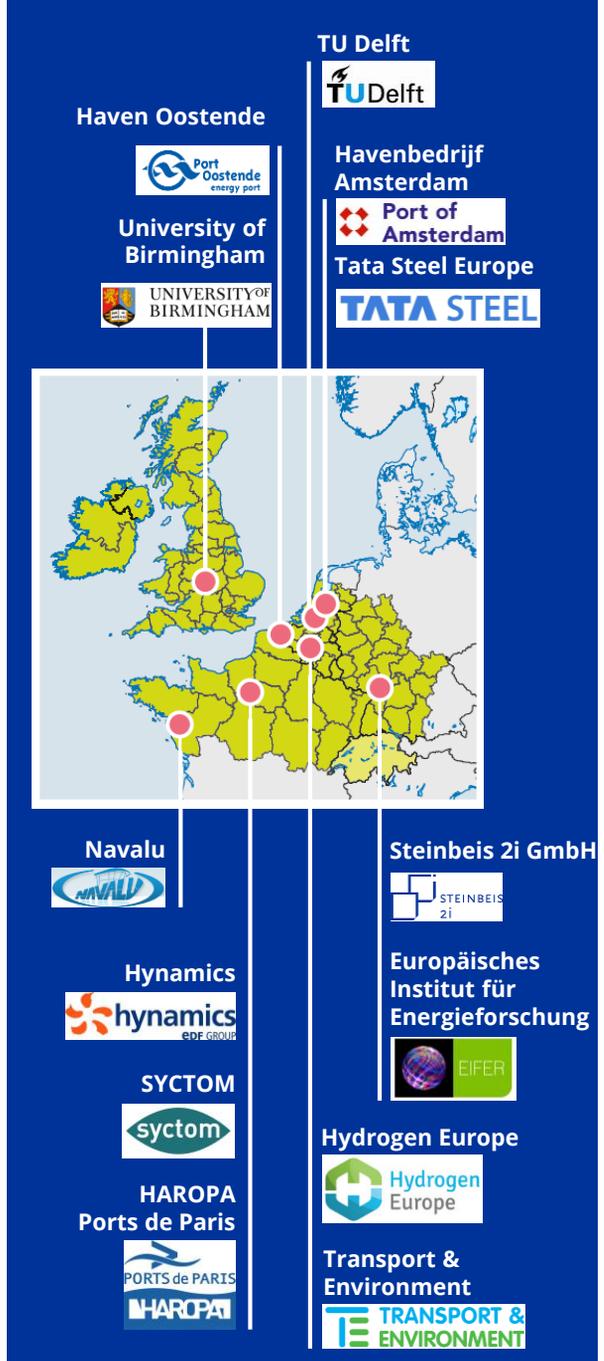
EIFER on Hydrogen

EIFER's research activities have the aim to develop low carbon hydrogen production and its use for mobility and in industry. The activities of EIFER cover the whole value chain from material development for electrolysis via stack testing and system integration to field-testing, and also include techno-economic and environmental assessments.

In collaboration with R&D departments of the EDF Group and a large network of academic and industrial partners in Europe, EIFER has been studying the opportunities offered by hydrogen mobility as part of its technical and economic research activities for more than 15 years. EIFER's work recognises the decarbonisation of hydrogen as the key issue. Low carbon hydrogen is a prerequisite to reduce significantly greenhouse gas emissions of the transport sector via hydrogen mobility. The challenges linked to the implementation and deployment of the future hydrogen-refuelling infrastructure are key drivers for the research at EIFER. Therefore, electrolyser technologies and their integration in refuelling stations are a major research focus.



H2SHIPS Partners at Kick-off meeting in Oostende, BE



Insights into the marine hydrogen world at our Project Launch...



: full house at the public launch event, both in Oostende, BE

H2SHIPS was pleased to welcome an impressive 70 participants to its official launch on 27th August 2019 in Oostende. The event was set up as part of the Hydrogen Days in Oostende offering various events around hydrogen in water transport throughout the week, including the opportunity to ride on the „Hydroville“, a passenger vessel powered by hydrogen in a diesel engine.

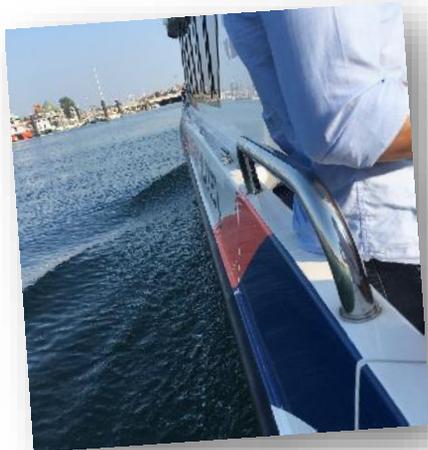
A key note speech entitled „we need to talk about hydrogen“ by project partner **Prof. Robert Steinberger-Wilckens** of **Birmingham University** started off the event. **Dr. Nicolas Brahy** of **Hydrogen Europe** followed, illuminating a range of different angles, from the pressing issue of addressing emissions in shipping via the broader role of hydrogen in the energy transition to related legal and regulatory issues. H2SHIPS enters into an already very active hydrogen community, which provided cutting-edge insights into hydrogen in shipping during the event. Some of these will be introduced briefly here:

Mercedes de Juan Muñozerro of **Port of Valencia** presented the port's comprehensive efforts to decarbonise their operations and the **H2PORTS** project which tests and validates hydrogen technologies for

Port machinery in order to achieve solutions that produce zero local emissions, without affecting the performance and safety of port operations.

Trond Strømgren presented the work of the **Ocean Hyway Cluster**, Norway. The cluster represents companies in the hydrogen value chain with a focus on the maritime sector, a centre of competence for the hydrogen value chain and a meeting place for the hydrogen industry and associated technology suppliers. It is involved with the development of a wide range of hydrogen ships and green hydrogen systems solutions.

Richard Ainsworth of **EMEC** presented Orkney Island's journey from marine renewables to hydrogen resulting from export constraints and consequent need for energy storage. This led to the projects **HyDIME** (Hydrogen Diesel Injection in a Marine Environment) and **HySeas III**, which has the aim to realise the world's first sea-going hydrogen-powered RoPax ferry and demonstrates that fuel cells may be successfully integrated with a proven marine hybrid electric drive system, while also addressing the related hydrogen storage and bunkering arrangements.



Cruising through Oostende's Port aboard the Hydroville as part of the Hydrogen Days

H2SHIPS' Little Hydrogen Calendar:

- [JESS Summer School 2019 - Part 2, Athens, Greece, 23-26-Sept. 2019](#)
- [Hydrogen For Clean Transport, Hamburg, Germany, 25 Oct. 2019](#)
- [European Utility Week and POWERGEN Europe 2019, Paris, France, 12-14 Nov. 2019](#)
- [8th European Fuel Cell Technology & Applications Piero Lunghi Conference - EFC19 Naples, IT, 9 -11 Dec. 2019](#)