



## H2SHIPS One year on...

One year after our memorable launch event in Ostend, we now have a *fully set up project structure*, and begin to see the first results of our efforts. The effects of Covid-19 have not spared us completely, but all our partners have learned to work under the new conditions, maximising the use of remote working while maintaining the cohesion of the consortium. Amsterdam's Port vessel design is almost ready to go to tender (see p.2) and Port of Ostend is progressing on its refuelling station. Meanwhile hydrogen has gone from strength to strength on the political agenda.

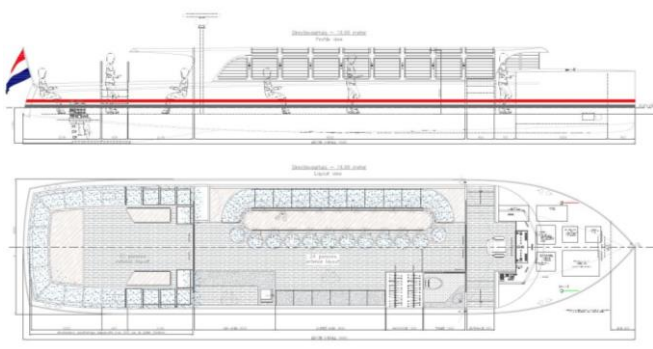
### Launch of H2SHIPS Platform

The **H2SHIPS Knowledge Sharing Platform** developed by University of Birmingham is now available at <https://h2ships.org>. It gathers all key findings from H2SHIPS and other flagship projects and includes a resource center with relevant studies, reports on innovative technologies and processes related to H<sub>2</sub> in water transport. Our aim is to provide a one-stop-shop for hydrogen in shipping. We want to help the H<sub>2</sub> community-building process by providing all necessary information as well as topical news on H2 developments.

### NEWS from the Hydrogen World

- The **Port of Ostend**, has entered a partnership with DEME Concessions and PMV to build a major green hydrogen plant in the port. The Green hydrogen will be generated using electricity from wind turbines (399 to be built by the end of 2020) and is intended to serve as industrial and fuel uses. A demonstration project of around 50 MW will be implemented first. Eventually, a green hydrogen plant is expected to deliver a CO<sub>2</sub> reduction of around 500,000 to 1,000,000 tons per year.
- **Germany has issued its Hydrogen Strategy** with planned investments of at least EUR 9 bn in order to become a global leader for green hydrogen technologies, secure growth and create hundreds of thousands of jobs while decarbonising its economy. Shipping is one of its focus areas and EUR 1 bn in green stimulus funding will be made available for it.

# Insights into the progress in the Netherlands...



preliminary design port vessel Port of Amsterdam, NL

## Vessel Design progressing in Port of Amsterdam

H2SHIPS Partner Port of Amsterdam is currently very busy working on the new port vessel, which will demonstrate the feasibility of operating an inland passenger vessel fueled by hydrogen. The 20-meter-long vessel will operate both in urban areas (Amsterdam's canals) as well as in the seaport area between Amsterdam and IJmuiden. The fuel cell vessel will be emission-free and silent. Sodiumborohydrid, a familiar ingredient in washing powders, will be used as hydrogen carrier. It is a powder (to be) diluted in water, which should guarantee a safe storage with a high flame point.

The first half of 2020 was dedicated to developing the design, including an inventory and sizing of all components. Detail design and first orders for equipment are following in the second half of 2020. According to schedule the construction of the ship will start at the end of the year. It is expected to be ready to sail in 2021.

## TU-Delft in Focus – presentation of Junior Researcher Dennis Lensing:

Since graduating for my master of Marine Technology in April I have been continuing my work with the TU Delft as a member of the research staff for the H2SHIPS project. The subject of my thesis was the implementation of a Hydrogen-battery hybrid system for maritime applications, using NaBH<sub>4</sub> as a hydrogen storage system. The pilot for the Port of Amsterdam was used as a case study in my thesis and I am therefore very excited to continue supporting the project as an employee for TU Delft.

So far, we have submitted a scientific article for the INEC 2020 conference, worked with various partners to finalize the design of the Port vessel, and we are assisting in further development of the NaBH<sub>4</sub> reformer system that will produce the hydrogen on board of the ship.



Dennis Lensing,  
Junior Researcher  
Marine Technology, TU-Delft

## Work on Action Plan for H2 shipping in Paris

Ports de Paris, Hynamics and Syctom are launching a series of studies focusing on the logistics of Hydrogen supply for shipping. These will encompass the feasibility of local green H<sub>2</sub> production for the ships, the determination of appropriate bunkering solutions, and regulatory barriers hindering the development of H<sub>2</sub> propulsion on the Seine river.

The results of these studies will feed an action plan for the implementation of a first H<sub>2</sub>-Shipping pilot site in Paris, which will be presented next year.

## H2SHIPS' Little Hydrogen Calendar

- **f-cell Stuttgart**, Germany, 29.-30. Sept. 2020
- **International Green & Smart Shipping Summit**, The Netherlands, 30. Sept. – 01. Oct. 2020
- **INEC 2020**, virtual, 05.-09. Oct. 2020
- **Hydrogen Online Conference**, virtual, 08. Oct. 2020
- **Green Port Cruise and Congress**, Greece, 14.-16. Oct. 2020
- **International Conference Maritime Hydrogen and Marine Energy**, Norway, 14.-15. Oct. 2020
- **Maritime Hydrogen and Fuel Cells Conference**, Germany, 26. Oct. 2020
- **6. Hypos-Forum**, Germany, 03.-04. Nov. 2020
- **Hydrogen Technology Conference & Expo**, Germany, 19.-20. Nov. 2020
- **2<sup>nd</sup> LEC Sustainable Shipping Technologies Forum**, Germany, 01.-02. Feb. 2021