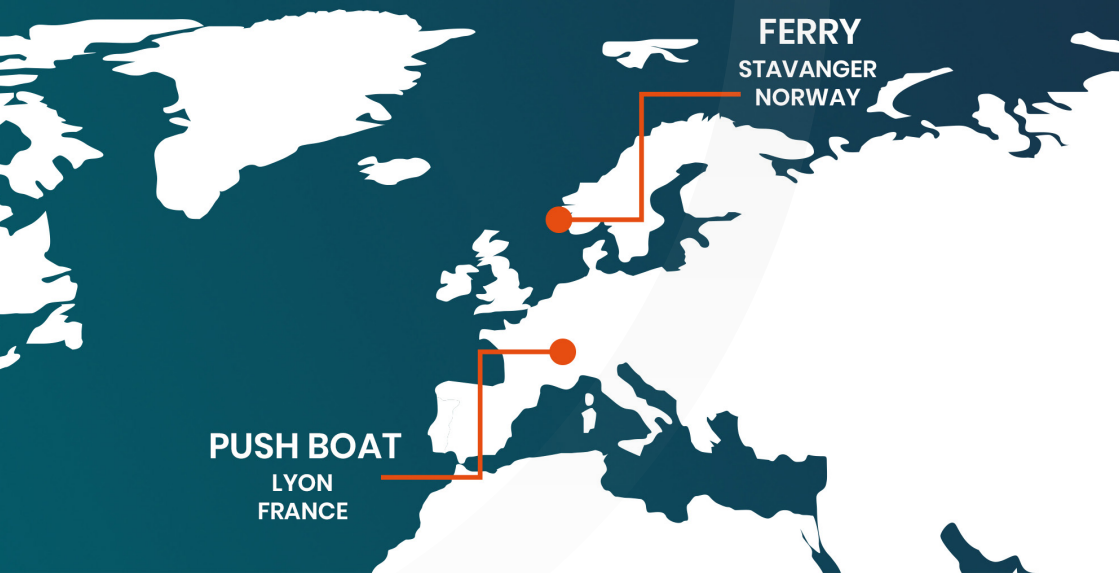




FLAGSHIPS

*Raising the readiness of
hydrogen-powered waterborne
transport to a new level globally*



FERRY
STAVANGER
NORWAY

PUSH BOAT
LYON
FRANCE



flagships.eu



Clean waterborne transport

Ever increasing regulations and ambitious climate targets govern the shipping industry to seek new means to reduce emissions. Both the EU and the shipping industry see hydrogen as a key contributor in the work to mitigate climate change.

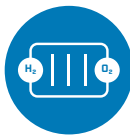
The FLAGSHIPS project sets out to raise the readiness of hydrogen-powered waterborne transport to an entirely new level globally. The project will support the deployment of two commercially operated zero-emission hydrogen fuel cell vessels in France and Norway. The project will reduce the capital cost of marine fuel cell power systems significantly by leveraging knowhow from existing on-shore and marine system integration activities.

Around these activities, a network of supporting actions will emerge, including hydrogen fuel supply chains, vessel design and manufacturing competence networks as well as significantly broad-based regulatory expertise.

Commercial operation

Both vessels are designed to be commercially viable and will be operated in the public domain. Therefore, the safety analysis and the related approval process of both vessels shall be completed according to current commercial standards.

A total of 1 MW of on-board fuel cell power will be installed. Gaseous hydrogen will be used in the vessels' on-board hydrogen storage and the aim is that both vessels will run on hydrogen produced on-site with electrolyzers powered by renewable electricity during 2021. The ship owners expect to maintain the ships in normal commercial operation after the 18-month demonstration period of the project.



A total of 1 MW installed on-board fuel cell power



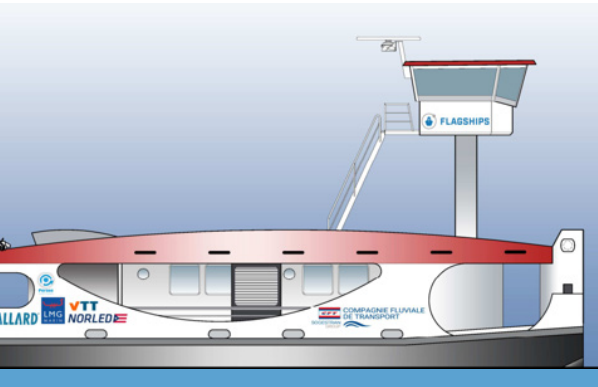
Hydrogen produced from renewable energy



Potential reduction of 1600 tonnes CO₂ annually



rt in Europe



In Lyon, a hydrogen push-boat operated by Compagnie Fluviale de Transport will serve as a utility vessel on one of France's most demanding rivers, the Rhône.



In Stavanger, hydrogen is intended to power a passenger and car ferry operated by Norled as part of the local public transport network.

Partners:





FLAGSHIPS

flagships.eu

For more information contact:

Jyrki Mikkola
Project Coordinator

Tel.: +358 40 170 1744
Email: jyrki.mikkola@vtt.fi



The FLAGSHIPS project has received funding from the Fuel Cells and Hydrogen 2 Joint Undertaking under grant agreement No 826215. This Joint Undertaking receives support from the European Union's Horizon 2020 research and innovation program, Hydrogen Europe and Hydrogen Europe research.