FLAGSHIPS
Clean waterborne transport in Europe
Floro – 18/09/2019

An innovation action under the FCH 2 JU, 2019, grant n:o 826215
Project overview

**AMBITION:** Illustrate the business viability and promote social acceptability of zero-emission shipping based on hydrogen and fuel cells

**FEATURES**

- **Total Budget:** 6.8 MEUR
- **Duration:** 4 years, 2019-2023
- **A total of 1 MW installed on-board fuel cell power**
- **On-site hydrogen production with electrolysis powered by renewable electricity**
Project objectives

• Raise the global readiness level of hydrogen-powered zero-emission waterborne transport
  • Develop and deploy H2+FC vessels in two commercial applications
    • Reach runtime of at least 18 months in day-to-day operation
  • Drive the uptake of H2 fueling infrastructure for hydrogen vessels
  • Develop and strengthen supply chains for the marine FC & H2 technology
  • Clarify approval practices for hydrogen ships
Building on long-running experience

- Past experience from electric and fuel cell transport applications is leveraged for pan-European commercial benefit
Two hydrogen flagships

VESSEL 1:
LYON
GASEOUS HYDROGEN

A push-boat operating as a utility vessel on one of the most demanding rivers, the Rhône.

VESSEL 2:
STAVANGER
LIQUIFIED HYDROGEN

A passenger and car ferry operating as part of the local public transport network.
New builds to replace

Passenger & car ferry
- Stavanger area Norway
- 600 kW FC power

Pusher
- Lyon, France
- 400 kW FC power
Timeline

Specification 2019-2020  
Design 2019-2020  
Build 2019-2020  
Test & approval 2021-2022  
Operation in commercial service 2021-2022
Project consortium

Overarching
- VTT
- Ballard
- Persee
- NCE Maritime Cleantech

Joining soon...
- Westcon P&A

Team Lyon
- CFT
- ABB
- LMG Marin France
Focus on Lyon pusher

- Swappable storage
- Upper deck
- FC room
Lyon H2 infrastructure

• Building on a HRS under construction with on-site electrolysis fueled by hydro-electricity river

• Located at the heart of Lyon port area
Contact points

• Coordinator: VTT Technical Research Centre of Finland Ltd.
  • Antti Pohjoranta, antti.pohjoranta@vtt.fi, tel. +358-40-5709825

• HFC supervision: Persee
  • Laurence GRAND-CLEMENT, lgc@pers-ee.com

www.flagships.eu
Acknowledgements

The FLAGHSIPS 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 and from Hydrogen Europe.