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FUEL CELLS AND HYDROGEN
JOINT UNDERTAKING



Is FCH becoming a must have maritime alternative?

Graz– 26/09/2019

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



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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

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

GASEOUS HYDROGEN

A passenger and car ferry operating as part of the local public transport network.



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New builds to replace



Passenger & car ferry

- Stavanger area Norway
- 600 kW FC power



Pusher

- Lyon, France
- 400 kW FC power

Timeline

Specification

Design

Build

Test & approval

2019-2020

2021-2022

Operation in commercial service

Project consortium

Overarching

- VTT
- Ballard
- Persee
- NCE Maritime Cleantech

Team Stavanger

- Norled
- LMG Marin Norway

Joining soon...

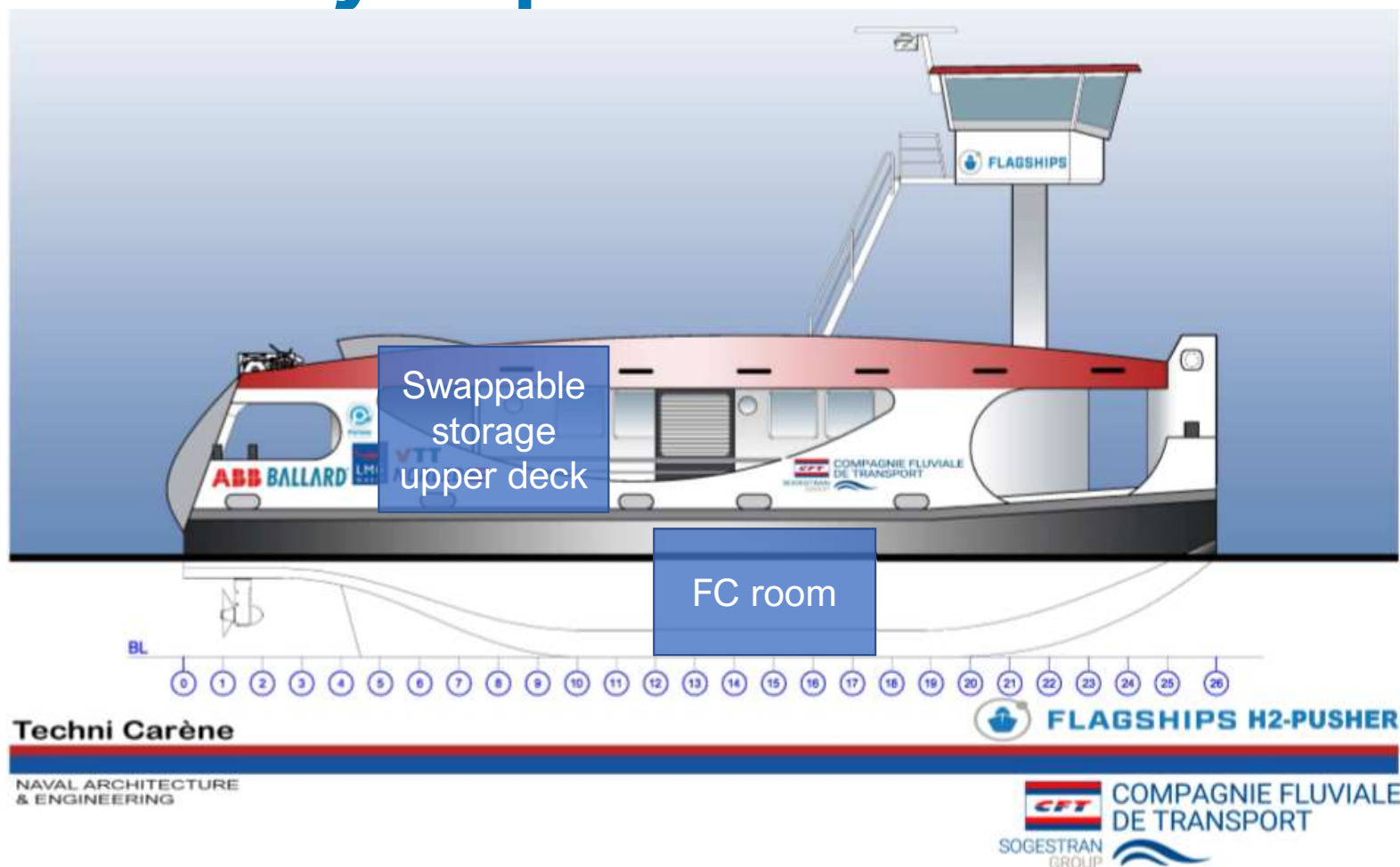
- Westcon P&A

Team Lyon

- CFT
- ABB
- LMG Marin France



Focus on Lyon pusher



FCH vessels are accelerating

Race for Water (2017)



Energy Observer (2017)



Concept boats

Interreg 
2 Seas Mers Zeeën
ISHY
European Regional Development Fund



Future Proof Shipping



Elektra

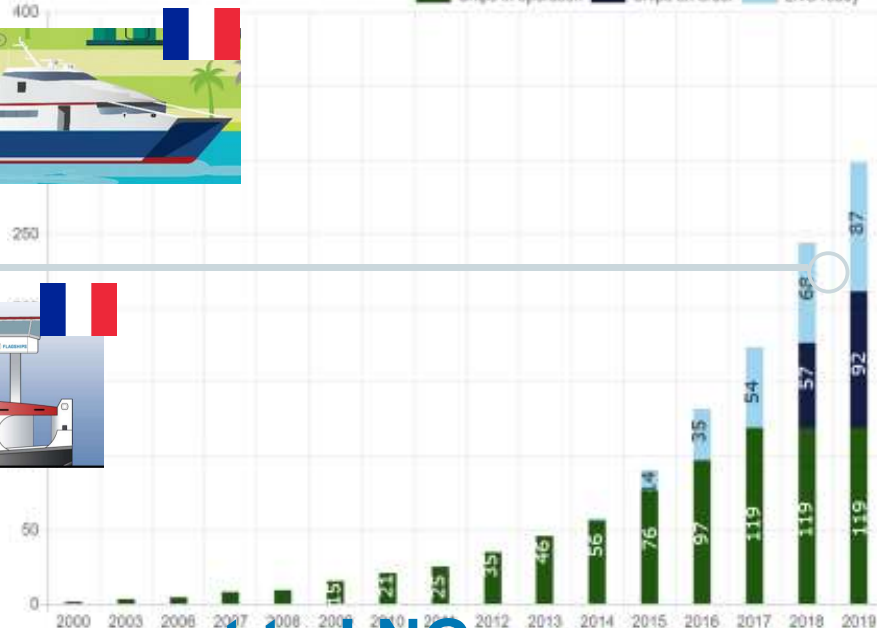


2021



Yearly development of fleet

Ships in operation Ships on order LNG ready



Today

2020

FCH JU Maranda Water-Go-Round



NPRA



in respect to LNG
development

HYSEAS III



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FLAGSHIPS

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