

SOGESTRAN GROUP

FROM ZULU H2 TO THE RH2IWER PROJECT

Bringing Fuel Cell Ships to the European Waterways

1st

for barging in France and one of the market leaders in shipping with an international dimension

1948

We are a family group nearly 75 years old



Today

over 150

inland units

over 30

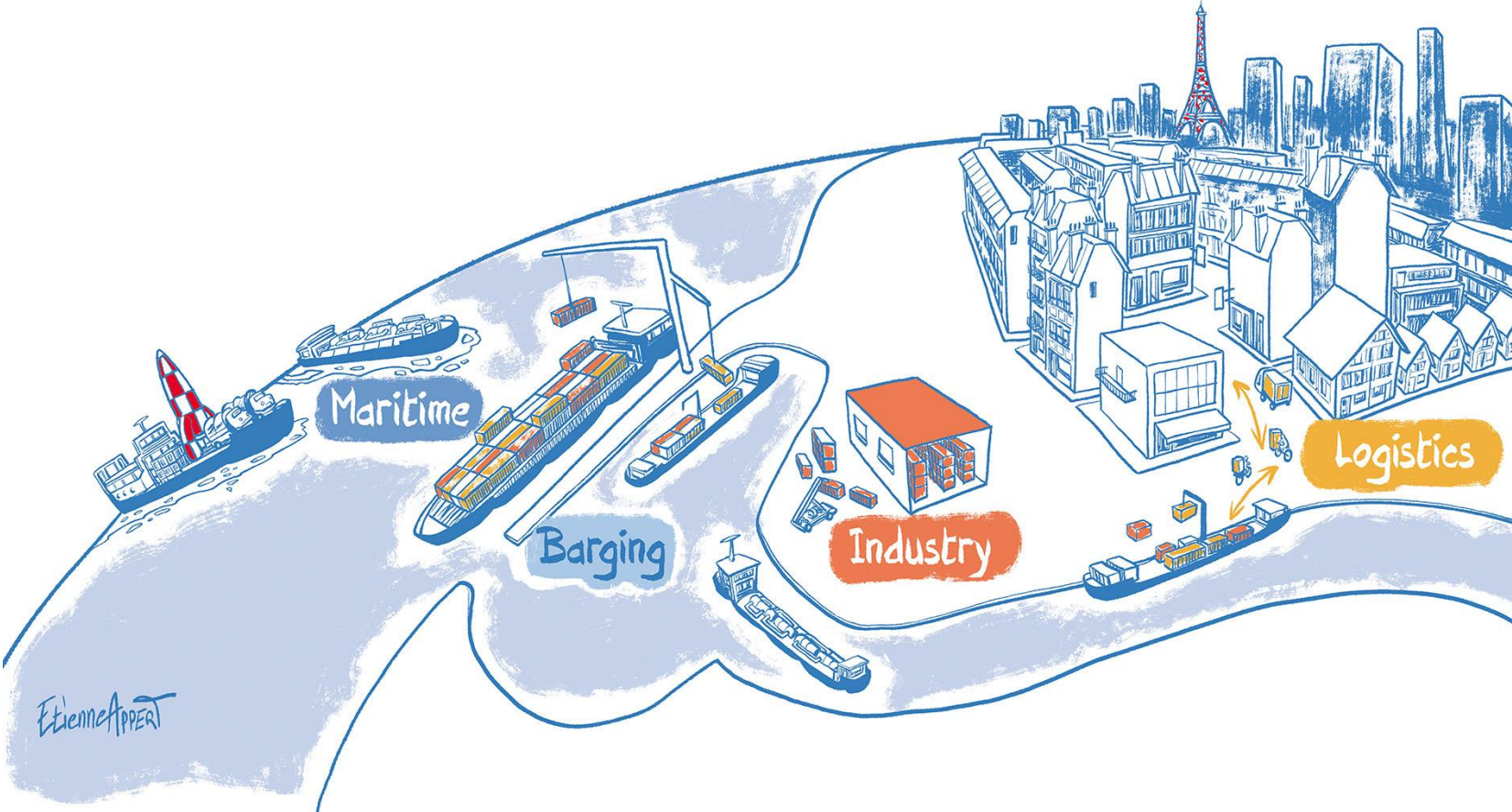
sea going ships

owned and operated

Photo - Quentin NEDEAU



SOGESTRAN'S ACTIVITIES

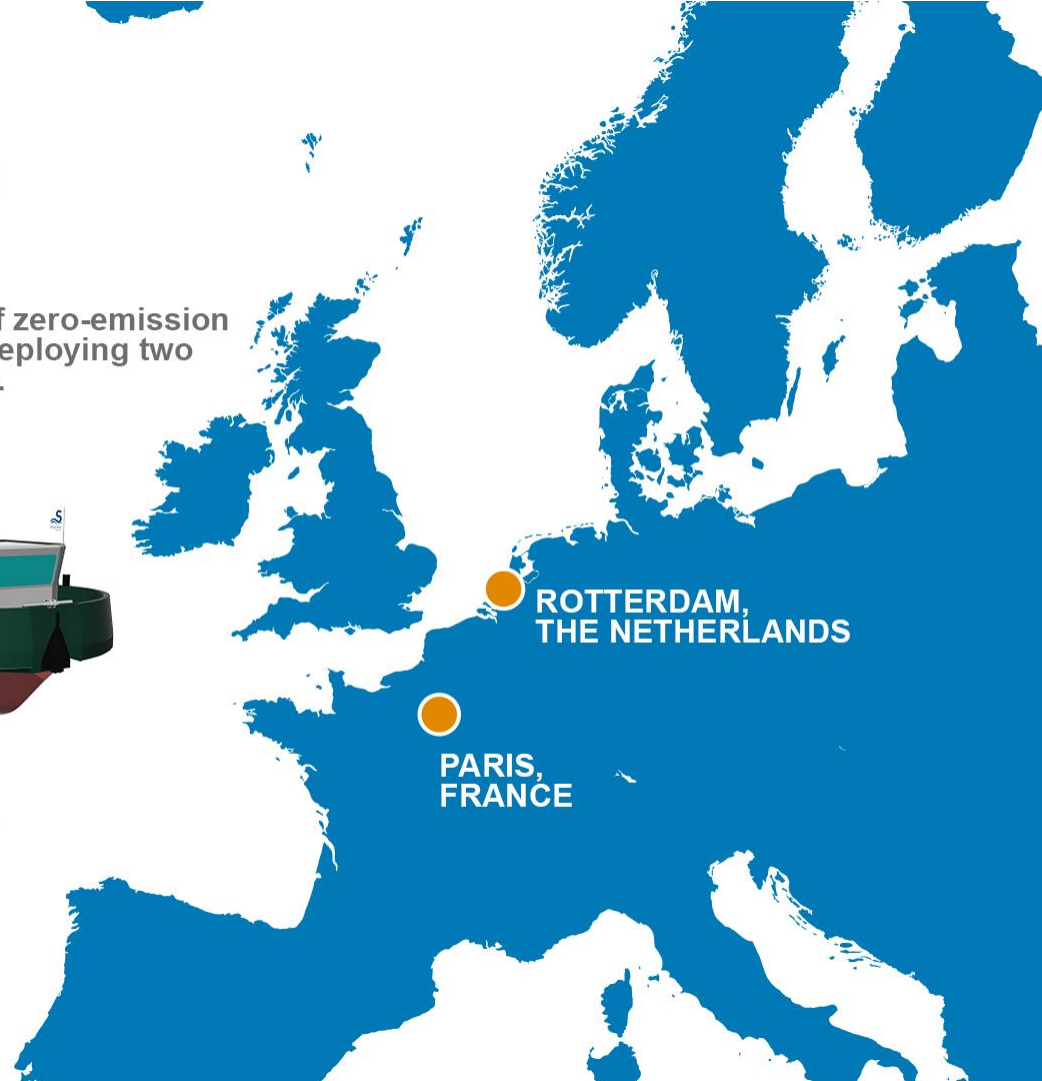


FLAGSHIP: THE ZULU PROJECT



FLAGSHIPS

The FLAGSHIPS project will raise the readiness of zero-emission waterborne transport to an entirely new level by deploying two commercially operated hydrogen fuel cell vessels.



ROTTERDAM,
THE NETHERLANDS

PARIS,
FRANCE



Strong consortium

Collaboration is key to accelerate the green shift.

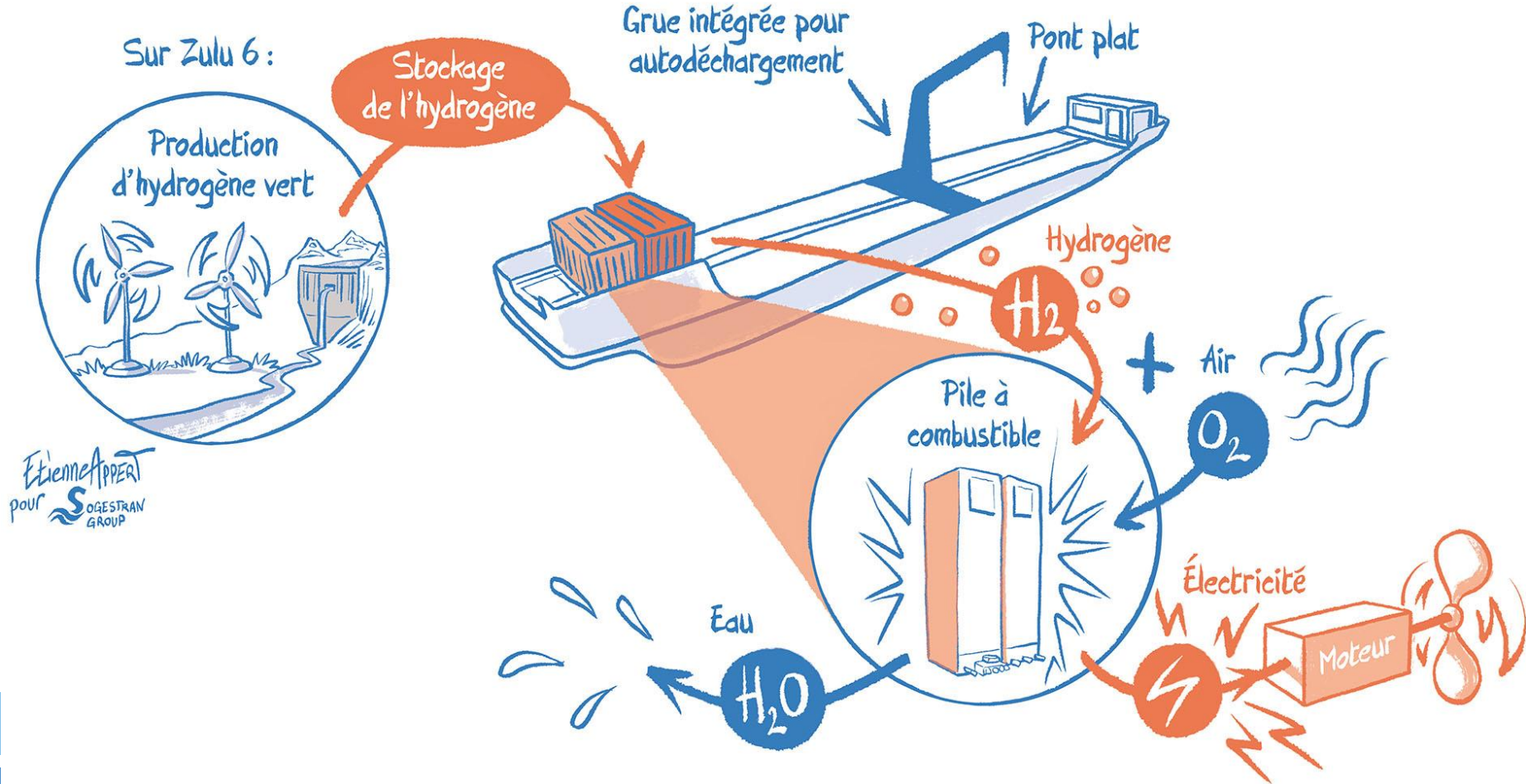


maritime
cleantech
Norwegian Centre of Expertise



SEAM

A ZERO EMISSION VESSEL TAILORED FOR URBAN DISTRIBUTION



Etienne APPERT
pour SOGESTRA
GROUP

300 bar Compressed H₂ (bunkering by Swap)

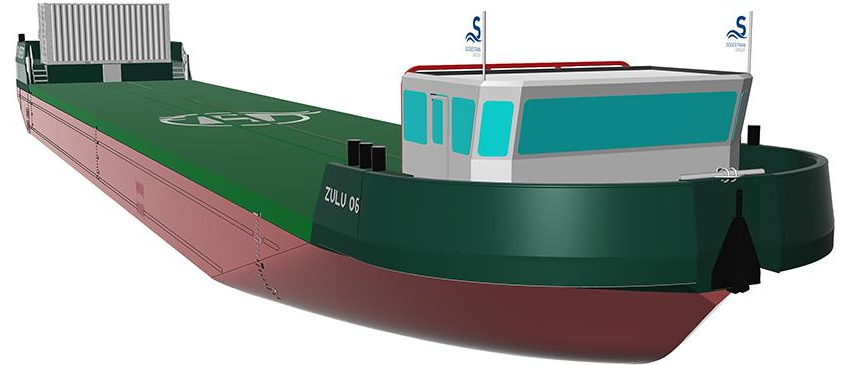
300 kg of Stored H₂

1 week of Operational Range

Meet Zulu!

The world's first commercial cargo transport vessel operating on hydrogen

- Owned by CFT (Sogestran Group)
- Soon operating the river Seine in Paris
- Route: Gennevilliers – Bonneuil Sur Marne
- Running on compressed green hydrogen
- Power generation system from ABB
- Fitted with 2x 200kW PEM Fuel Cells from Ballard



- Status:
Vessel outfitting finished in Le Havre
CCNR approval pending

CLEAN HYDROGEN EUROPE:

RH2IWER PROJECT

RH2IWER PROJECT

Consortium

Shipowners



Technology Providers



Knowledge Providers



Funding:



RH2IWER PROJECT

RH2IWER Objectives

- RH2IWER will build and retrofit 6 inland waterway vessels
 - an average power of over 1 MW and minimum power of 600 kW;
 - 3 vessel types;
 - Demo times 1-2 years



RH2IWER CFT PROPELLED TANKER CONCEPT



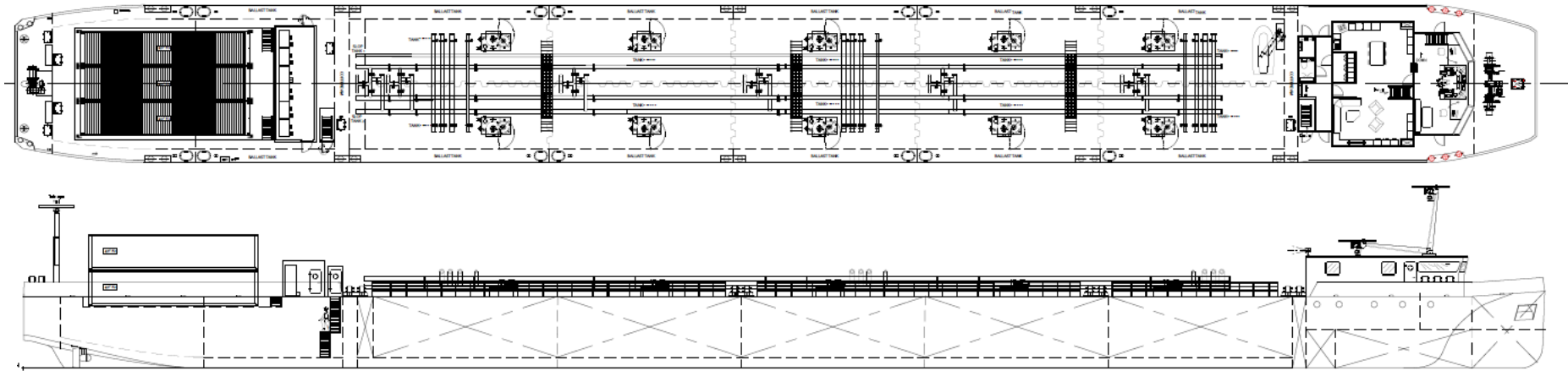
RH2IWER CFT Tanker

SPECIFICATIONS SHEET:

- Reference Trade: ARA
- Autonomy Required: 600km
- Propulsion: Hydrogen Fuel Cells : 1,2 MW
- Max: 6* 40'' container of 300 bar
- Gaseous Hydrogen (Container Swap)

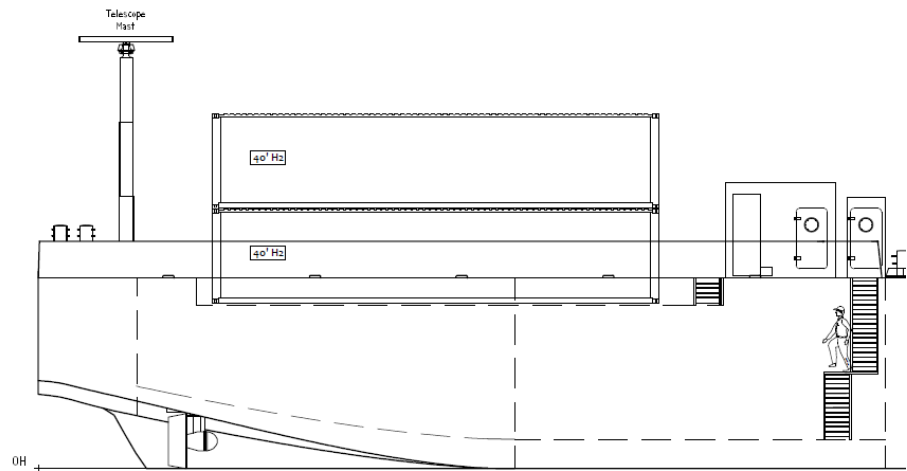
Moulded length	110	m
Beam overall	11.4	m
Depth	5.2	m
Draught	3.5	m
Cargo capacity approx	2750	m3
Air draught	8.5	m

RHINE H2 PROPELLED TANKER CONCEPT

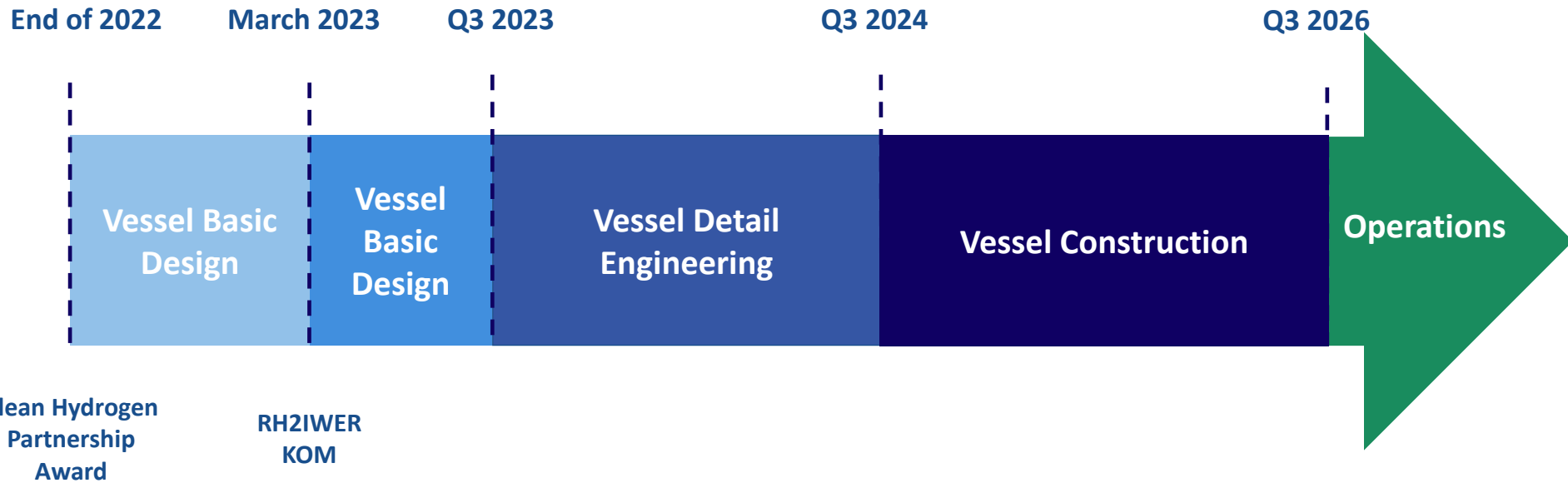


Main Design Constraints:

- Front End Wheelhouse + Deck House:
Isolate the crew from H2 Hazards
Avoid boat length large power cables
- Gas Hazard Distances
Limitation of the number of H2 Storages
Fuel Cell + Storage On Deck



RH2IWER PROJECT TIMELINE



THANK YOU FOR YOUR ATTENTION



Acknowledgments

The FLAGSHIPS and RH2IWER projects have received funding from Clean Hydrogen Partnership (previously Fuel Cells and Hydrogen 2 Joint Undertaking) under grant agreement No 826215 and 101101358. This Joint Undertaking receives support from the European Union's Horizon 2020 research and innovation program and from Hydrogen Europe.