//EU HYDROGEN RESEARCH DAYS 15-16 NOVEMBER

GREEN HYSLAND
Deployment of a H_2 Ecosystem on the Island of Mallorca

Víctor Encinas

Enagás Renovable

https://greenhysland.eu/

vencinas@enagasrenovable.es

GREEN HYSLAND

Clean Hydrogen Partnership

European Hydrogen Week

Co-funded by the European Union

Project Overview

Call year: 2020

Call topic:
FCH-03-2-2020: Decarbonising islands using renewable energies and hydrogen - H2 Islands

Project dates:
January 2021 - December 2025

Total project budget:
21,037,535.22 €

GREEN HYSLAND

% stage of implementation 01/11/2023:
58 %

Clean Hydrogen Partnership max. contribution: **9,999,999.50 €**

Other financial contribution:
14,617,515.72 €
(*own contribution + other grants*)

Project Summary

Green Hysland

An Ongoing Reality

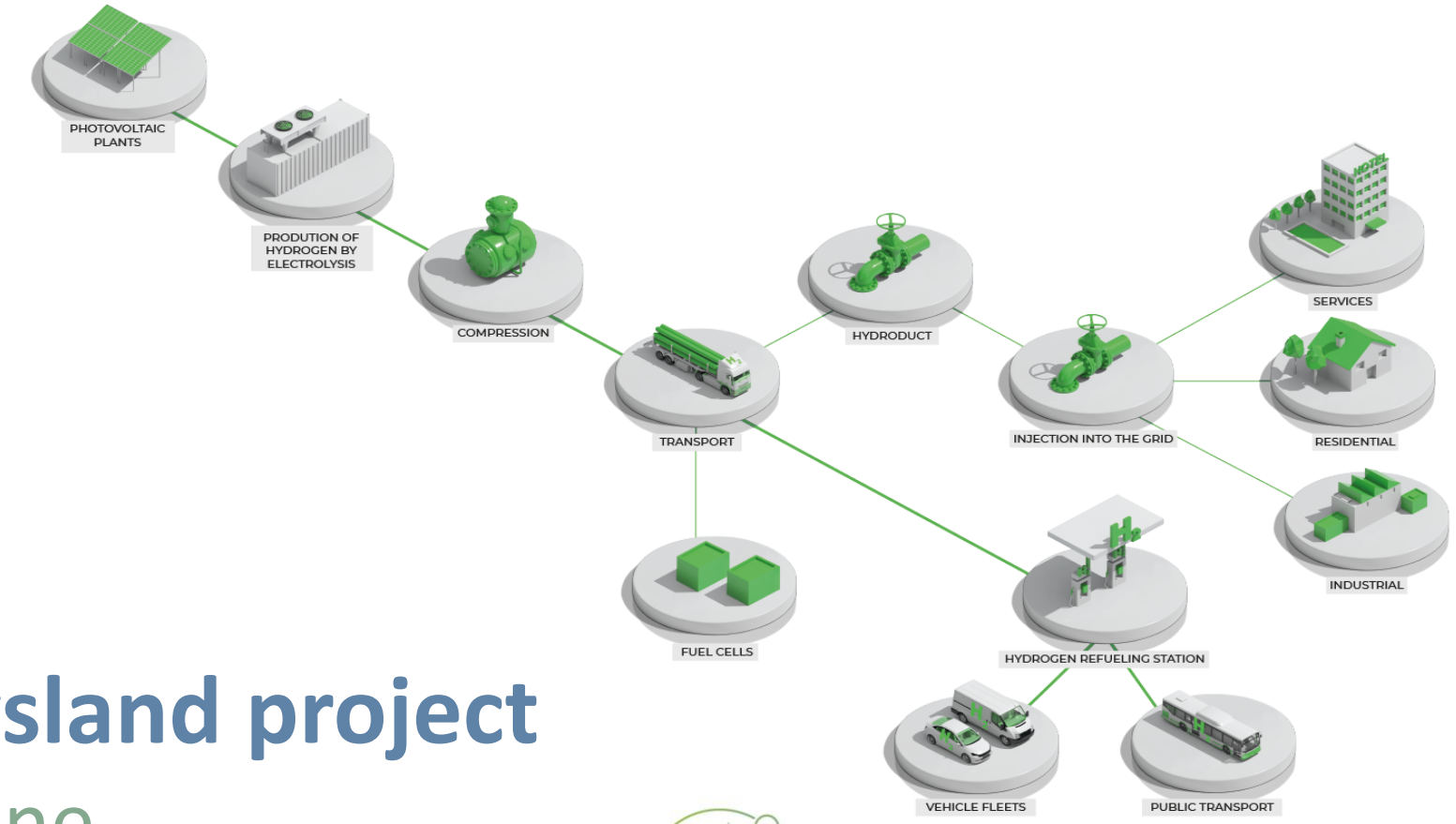
Project Summary

Green Hysland

An Ongoing Reality

- **Main Objective:** Bringing together all core elements of the H_2 value chain into a fully-integrated and functioning H_2 ecosystem that can be replicated across other islands and remote territories in Europe and beyond, while achieving self-sustaining market-based scale.
- **'Close-to-market' & commercially available technologies**, reaching TRL-9 at project close: Multi-MW electrolyser, dedicated pipeline, injection into NG network, FC-based CHP, HRS and H_2 vehicles.

Project Summary



Green Hysland project

Main Outline

Clean Hydrogen Partnership

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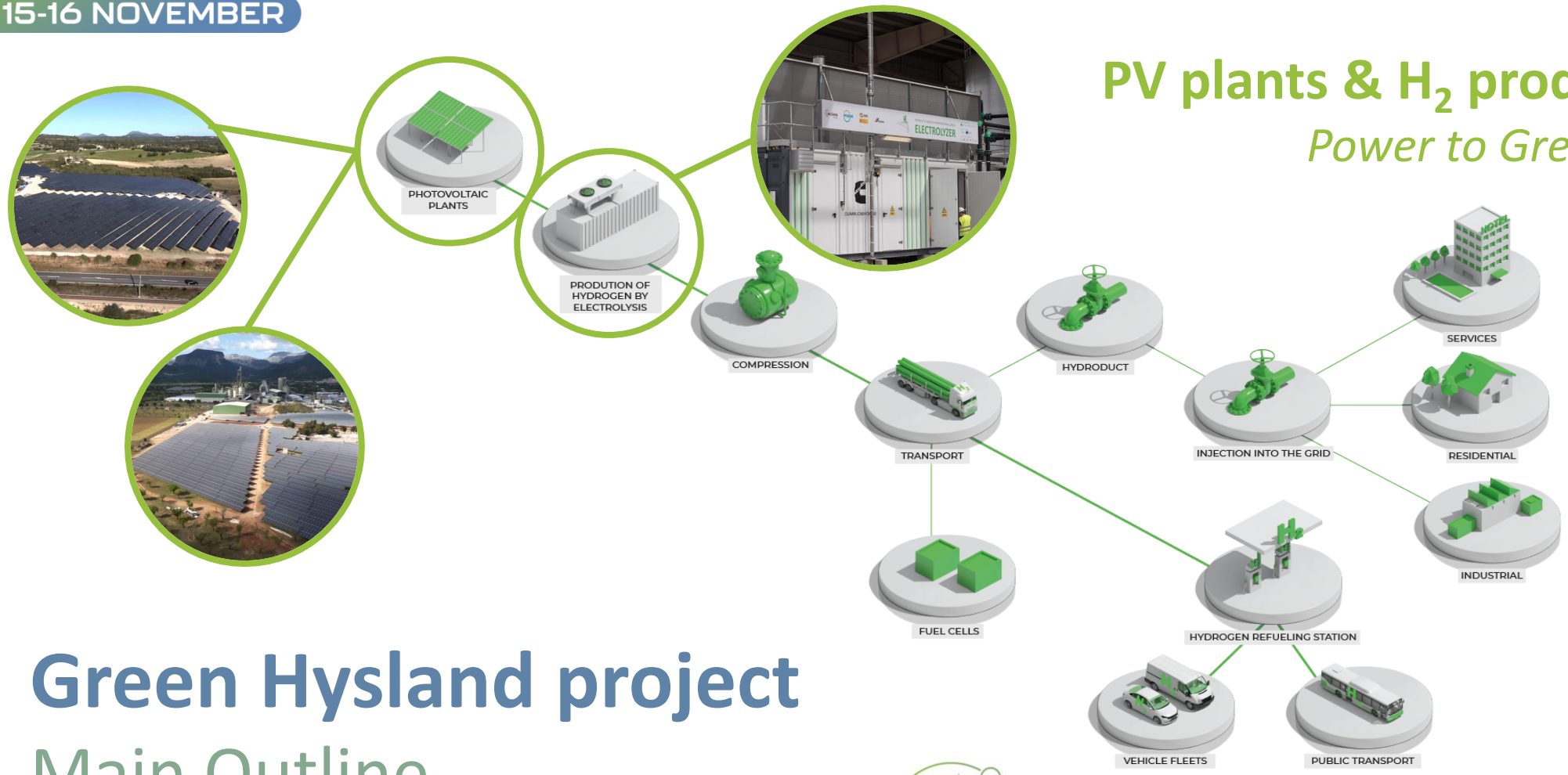
Project Summary



PV plants & H_2 production plant

Power to Green H_2 Mallorca

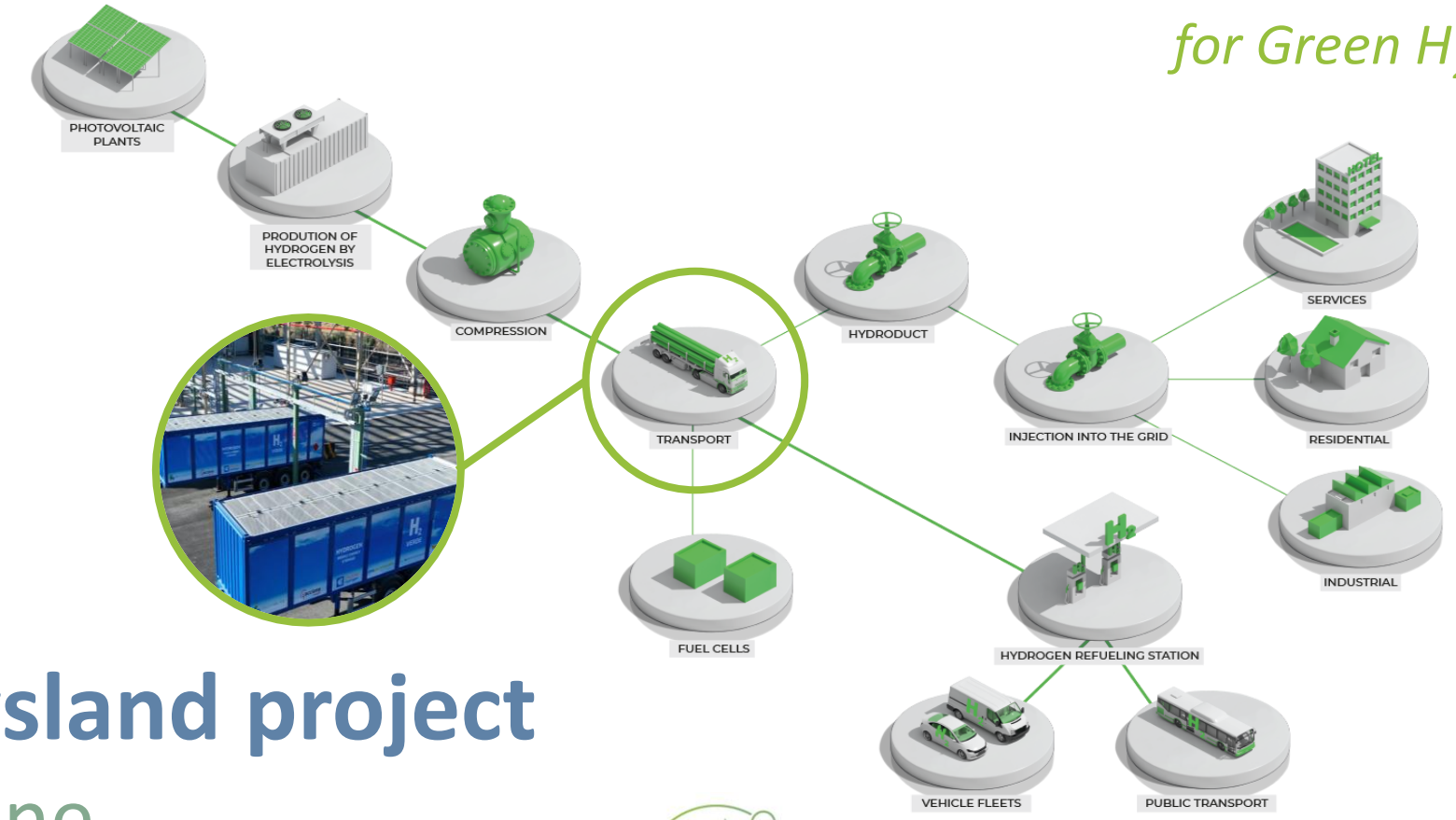
Green Hysland project

Main Outline

Project Summary

Tube Trailers

for Green H_2 transport



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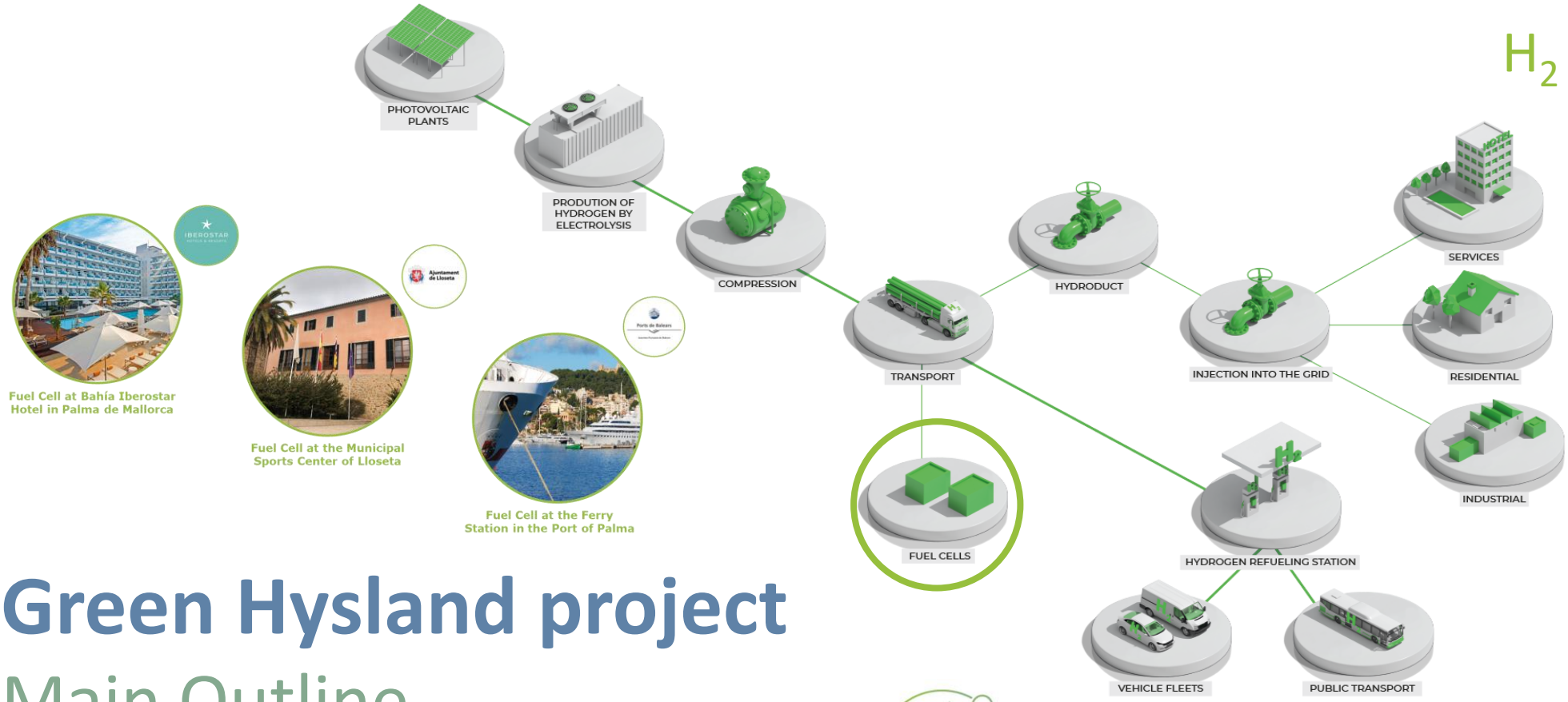
Main Outline

Project Summary

Stationary Uses

H_2 Fuel Cells



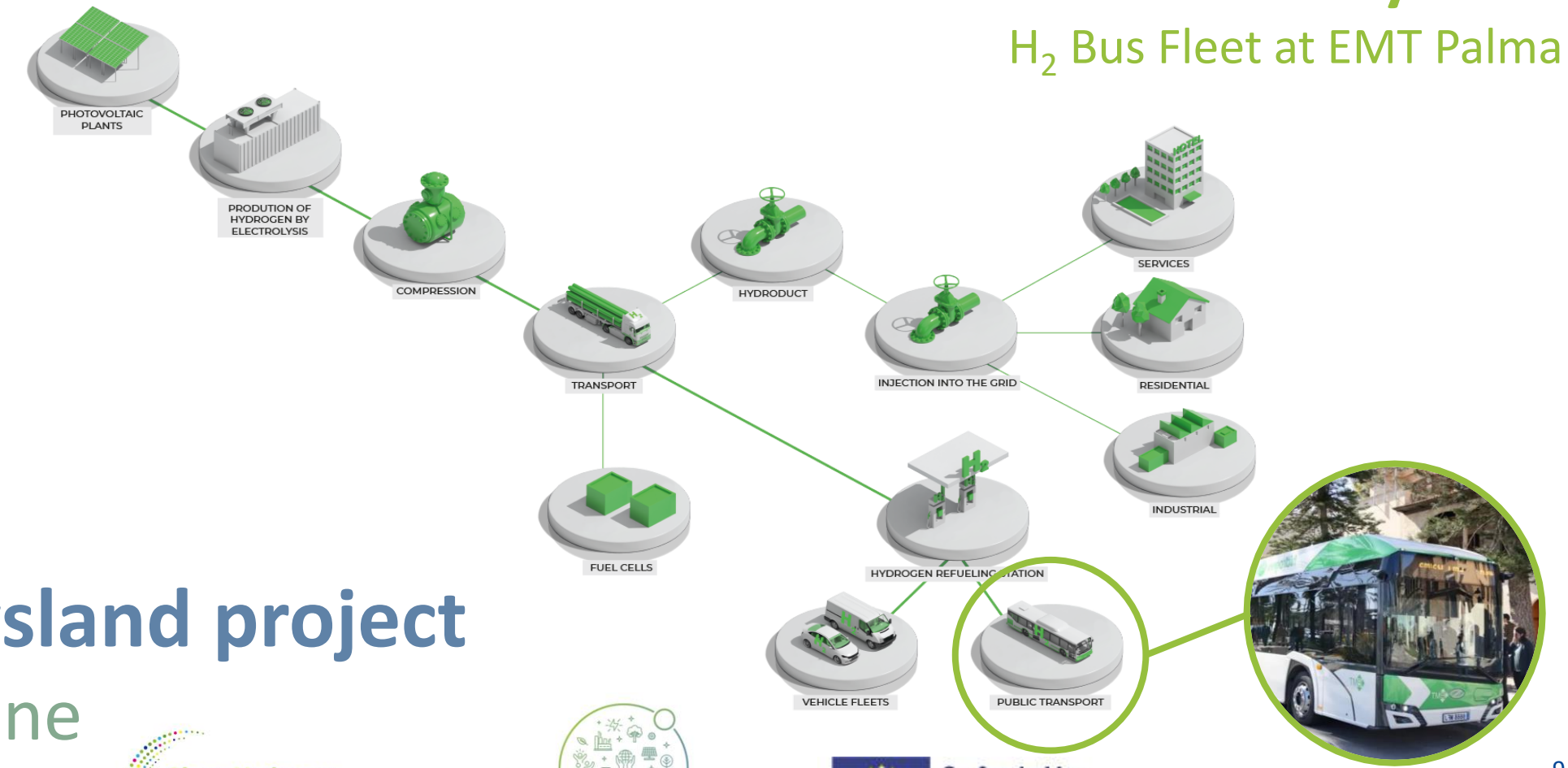
Green Hysland project

Main Outline

Project Summary

Mobility Uses

H_2 Bus Fleet at EMT Palma



Green Hysland project

Main Outline

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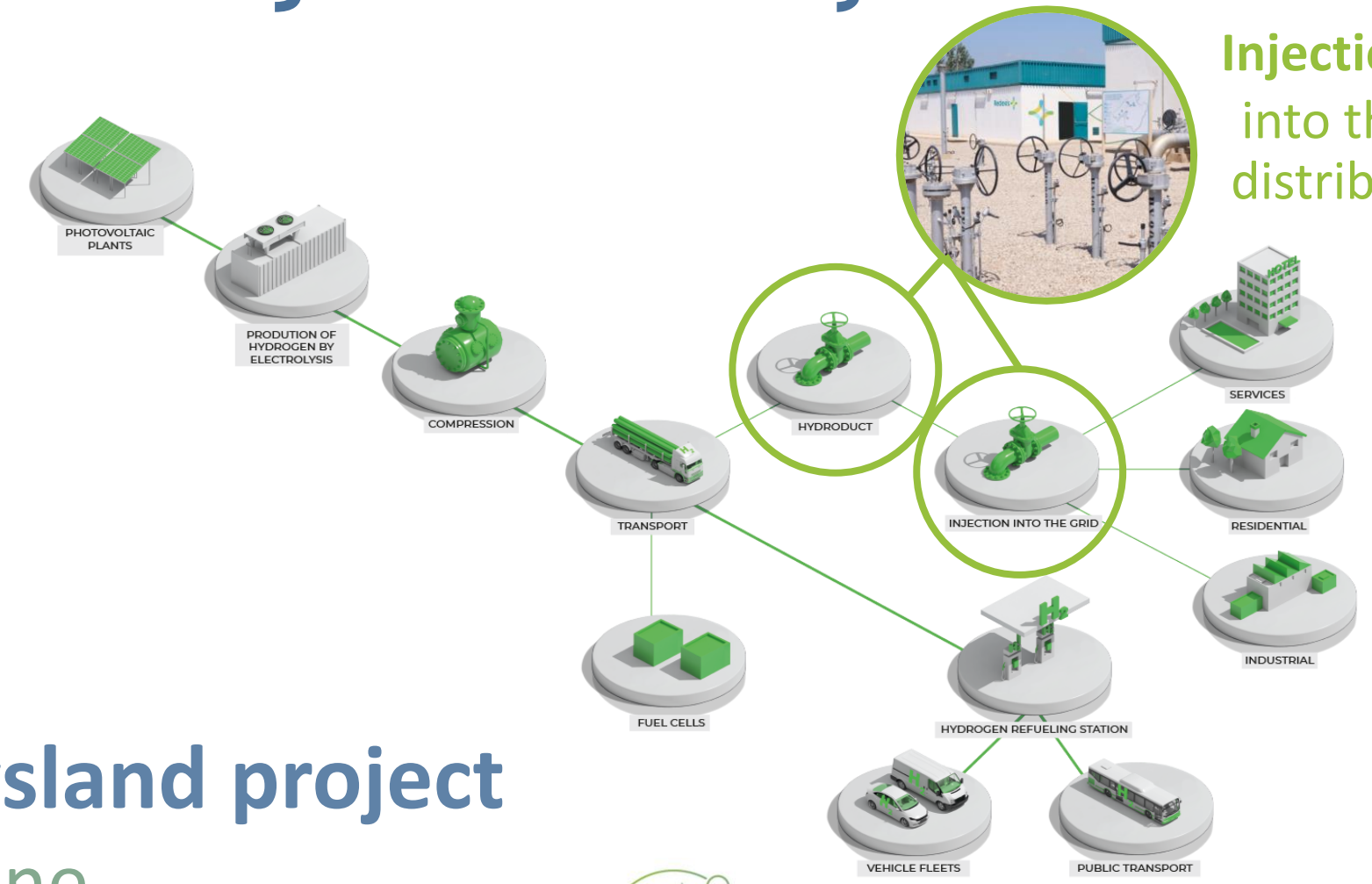

Injection of green H_2 into the Natural Gas distribution network

Green Hysland project

Main Outline

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Project Summary

Green Hysland project Consortium

Multidisciplinary team

Clean Hydrogen Partnership

European Hydrogen Week

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Project Progress/Actions - H_2 production plant in operation

Status at Month 35 (out of 60 months of project)

90%

Start-up of the plant 0% → 25% → 50% → 75% → H_2 production plant 100% in operation

Project Progress/Actions
FCEV deployment & Heat and Power

Status at Month 35 (out of 60 months of project)

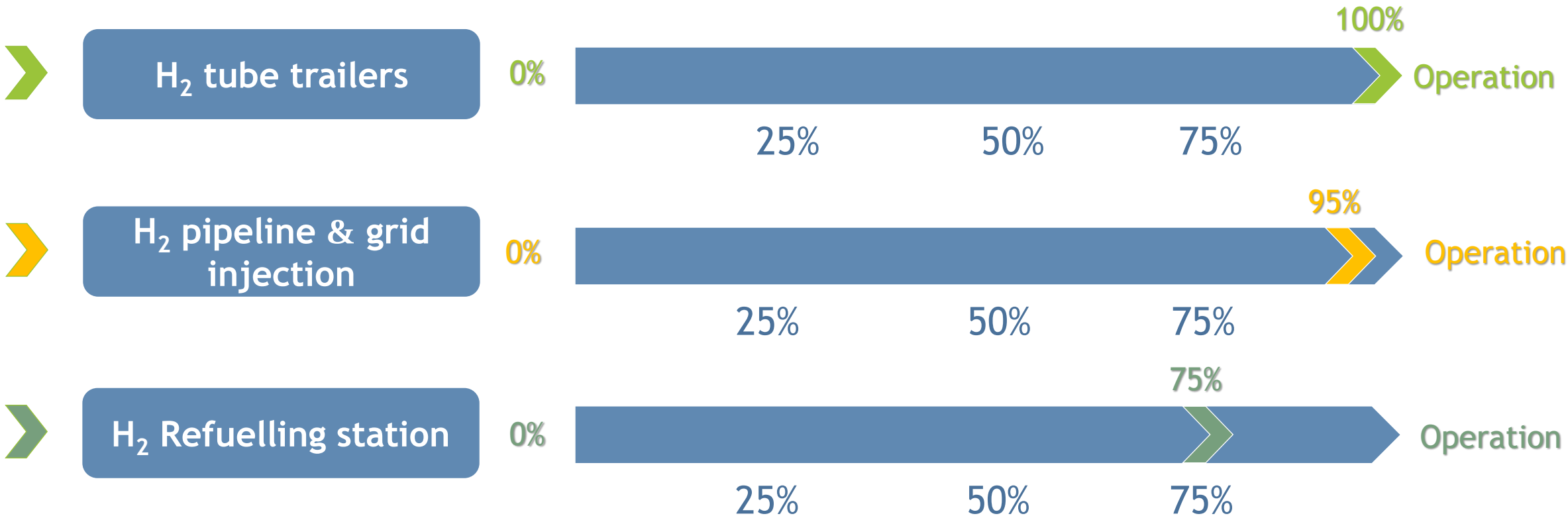
FCEV deployment — 0 buses → 5 buses available

25% 50% 75%

- Buses procured: 5 x 12 m buses from Solaris
- Delivered in Q1 2023
- H_2 storage: 5 tanks with total of 37.5 kg of H_2
- 70kW HDv8 Ballard Fuel cell
- 1 pack of LTO batteries: 30.4 kWh

Project Progress/Actions
FCEV deployment & Heat and Power

Status at Month 35 (out of 60 months of project)



Risks, Challenges and Lessons Learned

Since 2021, the project has found many different challenges that have been translated into risks

New industrial activity: technology, permitting & regulation

Risks and delays associated with the pandemic

Delays in the procurement process and commissioning

Change in government

Co-funding the project using public resources

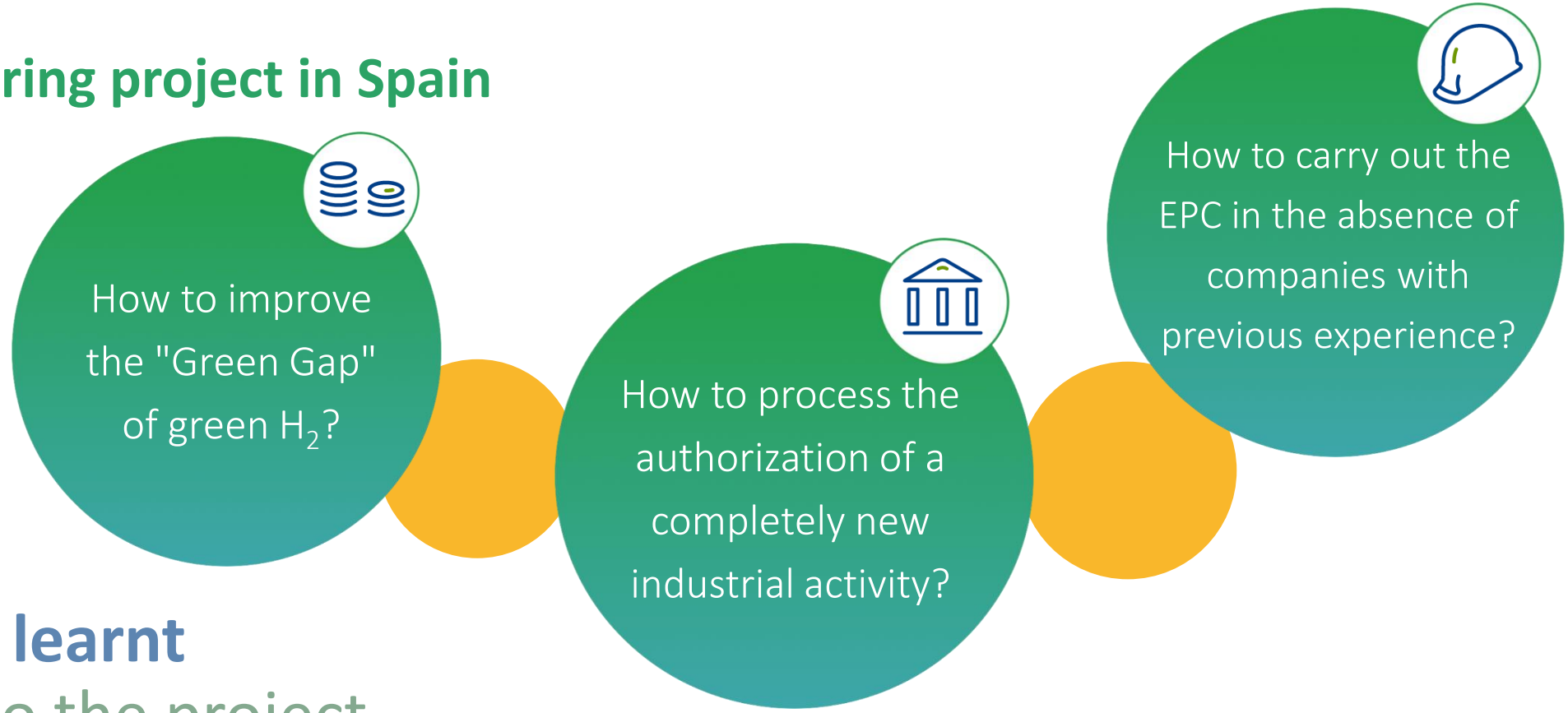
Awareness - Difficult to engage with public and offtakers

+32 partners in the Consortium

Risks & Challenges
during project execution

Risks, Challenges and Lessons Learned

As a pioneering project in Spain

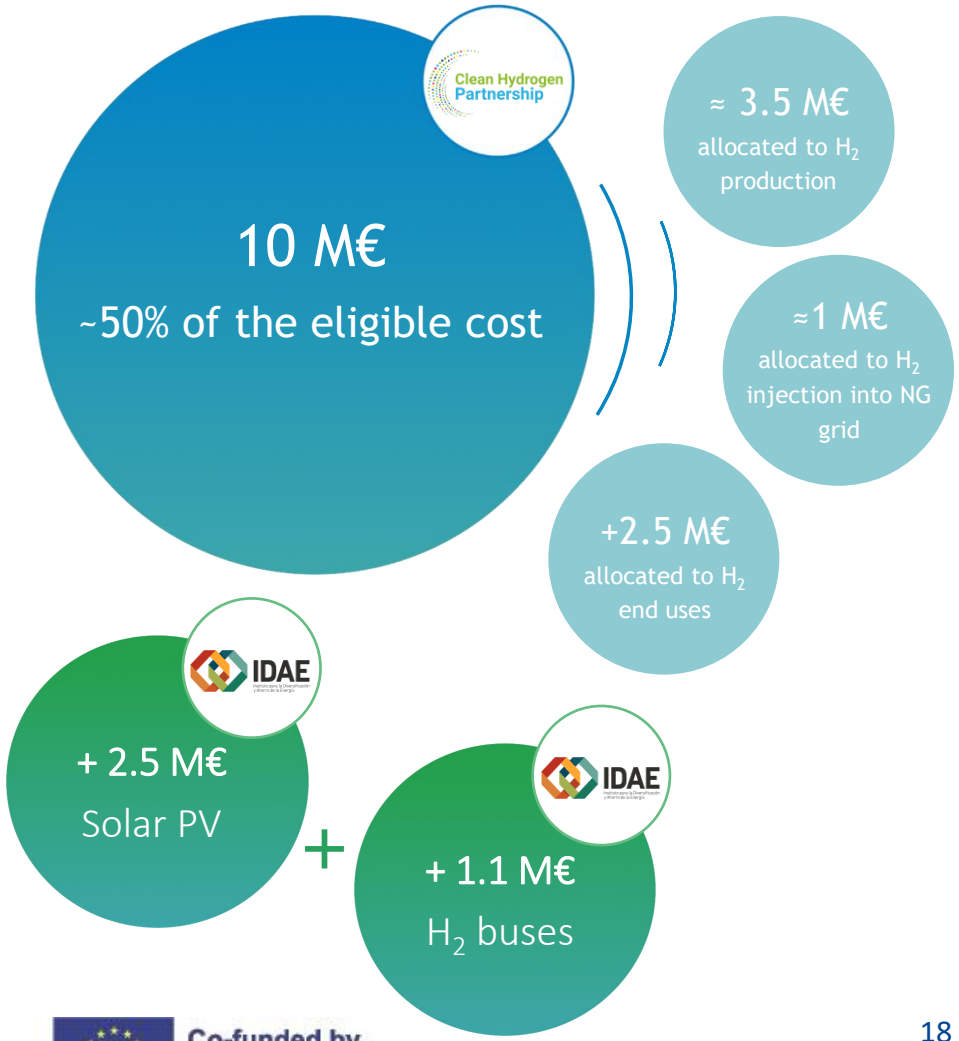


Lessons learnt
thanks to the project

Risks, Challenges and Lessons Learned

Public Finance: Incentivising the entire value chain of the green hydrogen economy

- Green Hysland has received funding from the Clean Hydrogen Partnership under Grant Agreement No 101007201.
- The public aid is targeted at the entire green H_2 value chain: production, transport & distribution, consumption.
- Solar PV farms have also received public funding from IDAE. Besides, mobility uses also received complementary public funding through “MOVES II: Singular Projects” of IDAE.



Lessons learnt

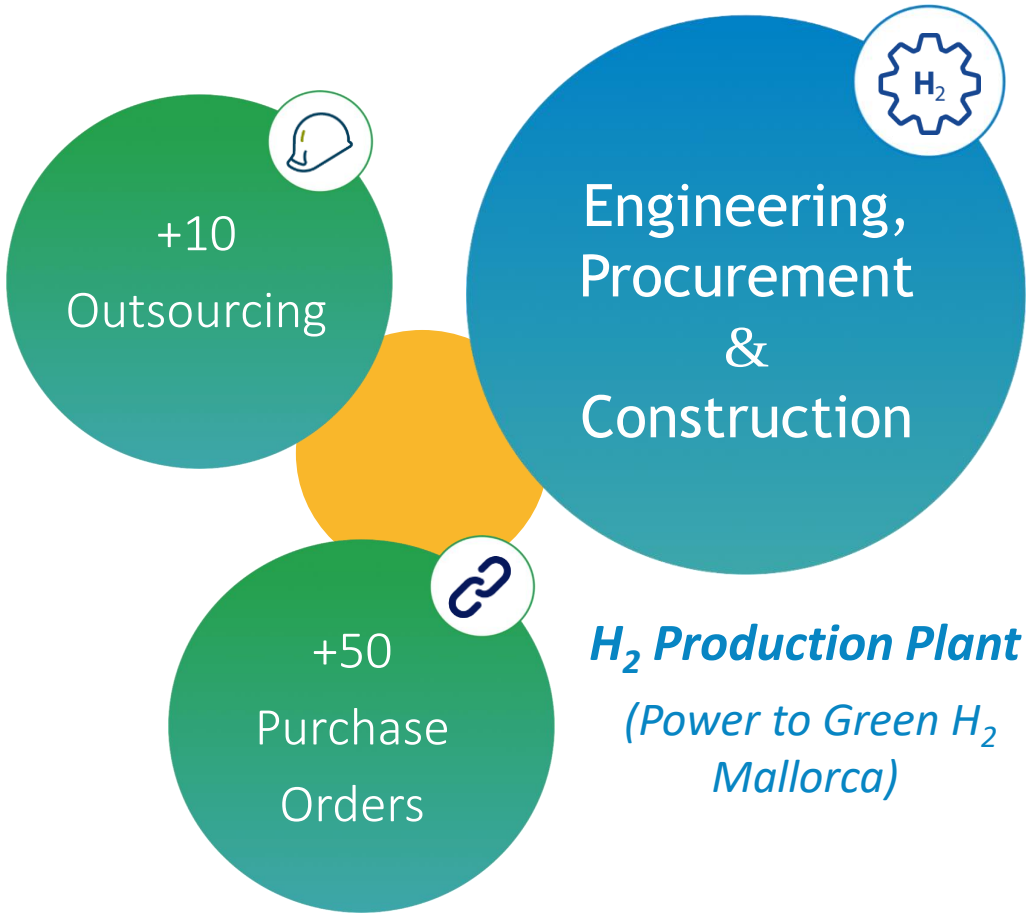
thanks to the project

Risks, Challenges and Lessons Learned

A bet for the future

- Acquiring technical and operational skills in the execution and management of H_2 production, storage, distribution and application projects.
- Understanding the challenges associated with H_2 technology and the regulatory and policy issues.
- Excellent way to acquire knowledge and experience, essential for the development of larger projects.

Lessons learnt
thanks to the project



Exploitation Plan/Expected Impact

Power to Green H_2 Mallorca

First industrial renewable Hydrogen plant in Spain

Petra
(5.8 MWp)

14 MW
Solar PV farms

Lloseta
(8.5 MWp)

300
t H_2/year

Electrolyser
(2.5 MW)

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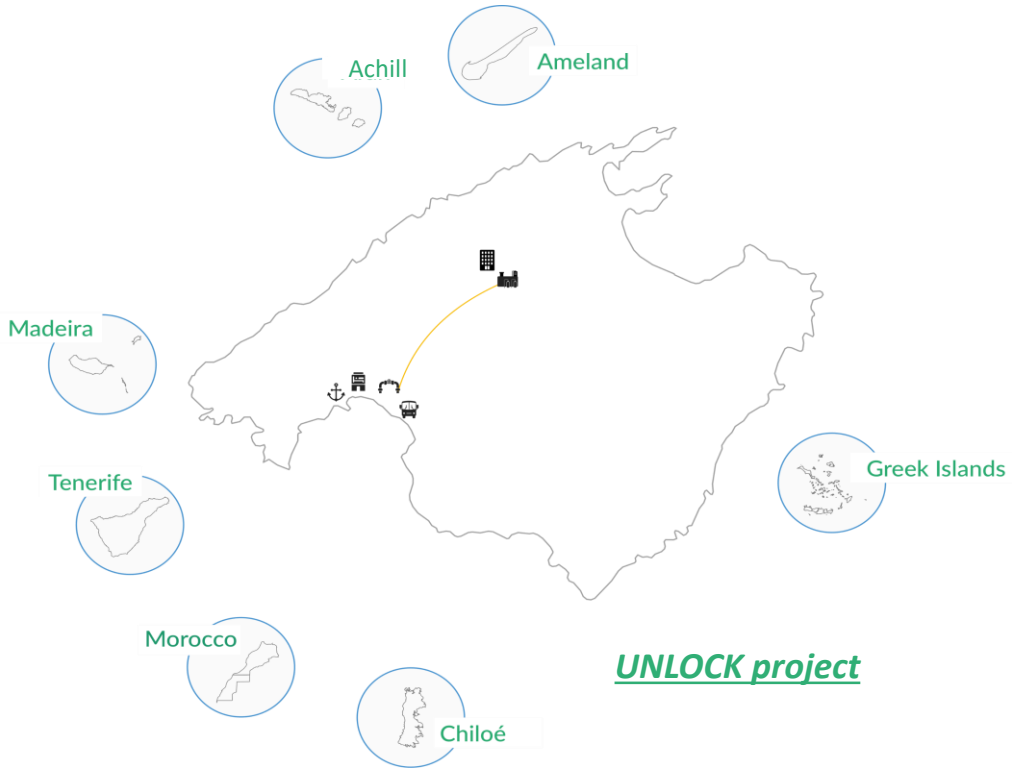
Exploitation Plan/Expected Impact

Multidisciplinary team covering the entire value chain

Clear commitment to a replicable H_2 ecosystem

*"**GREEN HYSLAND** will provide a blueprint to Europe for the decarbonisation of island economies"*



UNLOCK project

Replicable business case
in other territories

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