

Hydrogen Research & Innovation Days

24-25 November 2025



Hydrogen Research & Innovation Days
24-25 November 2025



HYDROGEN VALLEYS

Working with Regions: Driving Europe's
Competitiveness through Hydrogen Valleys

Aguilo, Antonio

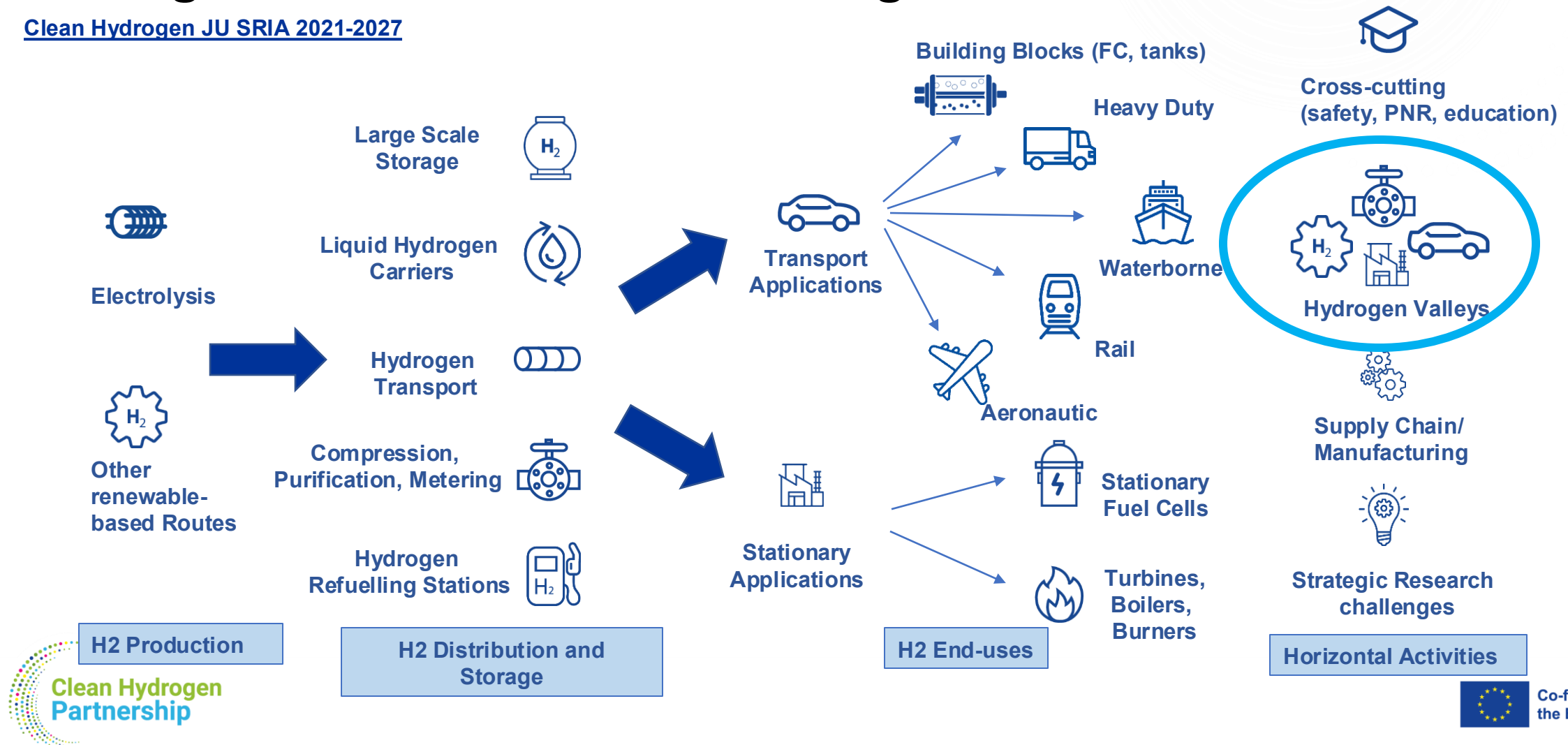
Caloprisco, Pietro

Kadric, Renata



Strategic Research & Innovation Agenda

Clean Hydrogen JU SRIA 2021-2027

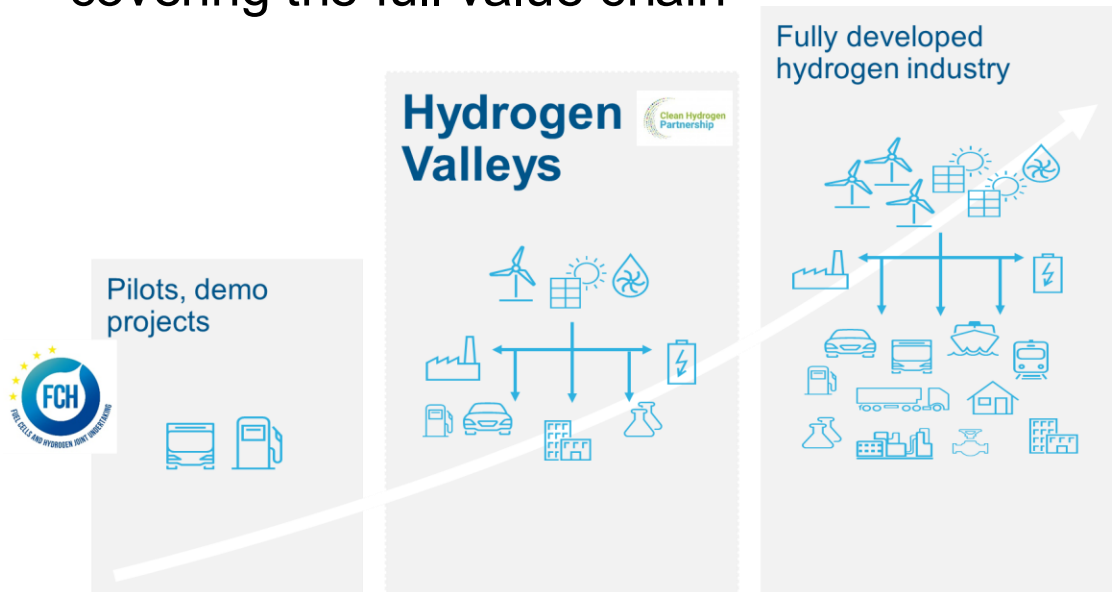


“Hydrogen Valleys” are local market makers for clean hydrogen

Integrated infrastructure projects along the whole value chain

Bottom-up contribution to market development

- Next-generation H2 market development
- Integrated (and larger-scale) projects covering the full value chain



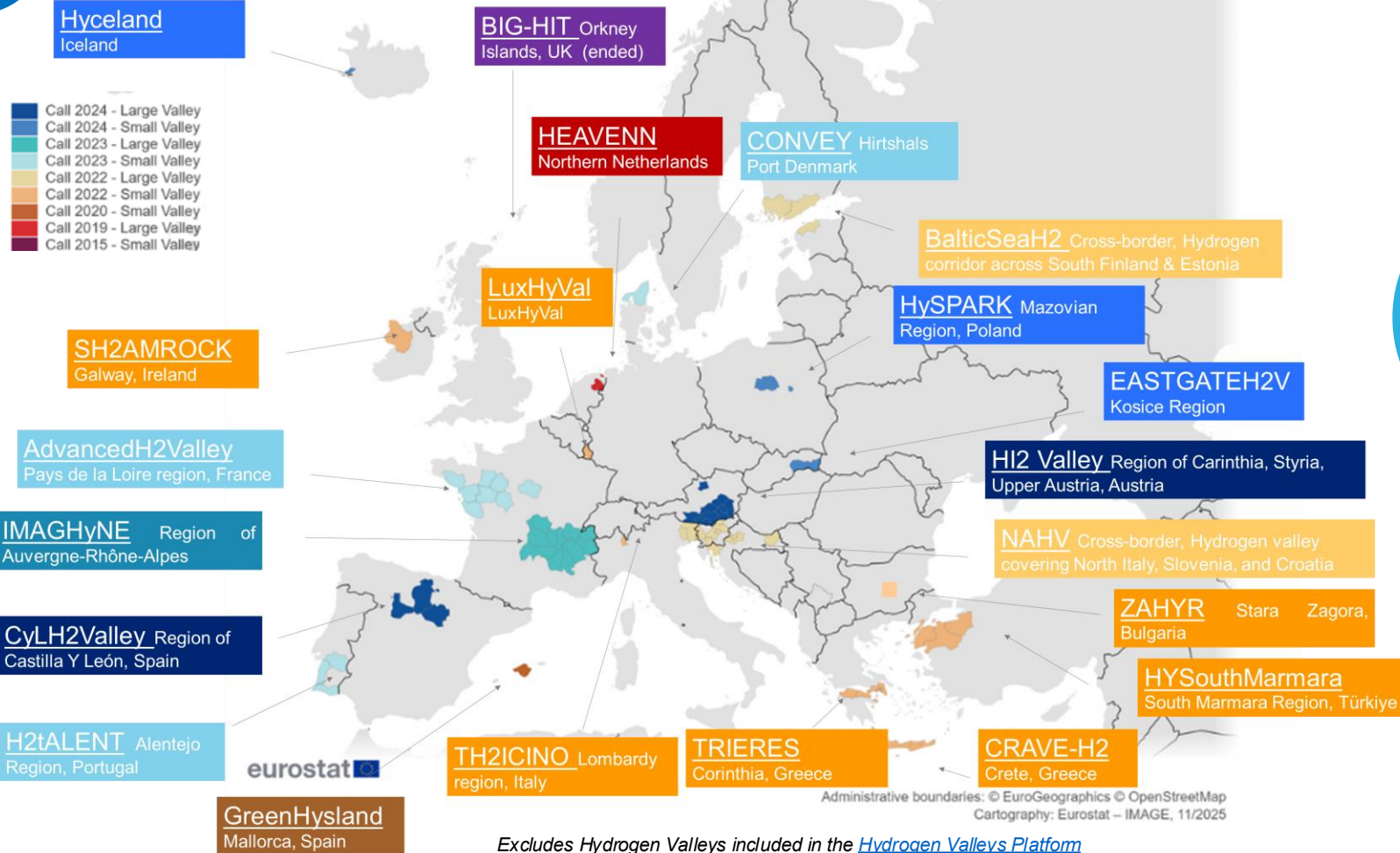
What they're made of

- **Large-scale joint investment** (x10 m EUR and up to multi-bn EUR)
- **Full hydrogen value chain coverage**
 - Centralized clean hydrogen production (*de facto* mostly green H2)
 - Shared infrastructure (e.g., pipelines, refueling stations)
 - Multiple end-uses (e.g., petrochemical industry, hydrogen road mobility)
- **Geographically defined scope** (from local, regional to international/cross border)

REPowering the EU with Hydrogen Valleys

Support to pre-FID activities & CAPEX

1



Excludes Hydrogen Valleys included in the [Hydrogen Valleys Platform](#)
Excludes 7 Valleys Call 2025, currently being prepared



21
Hydrogen
Valleys

+7 grants under preparation



Across
19
countries



488
partners
40
countries



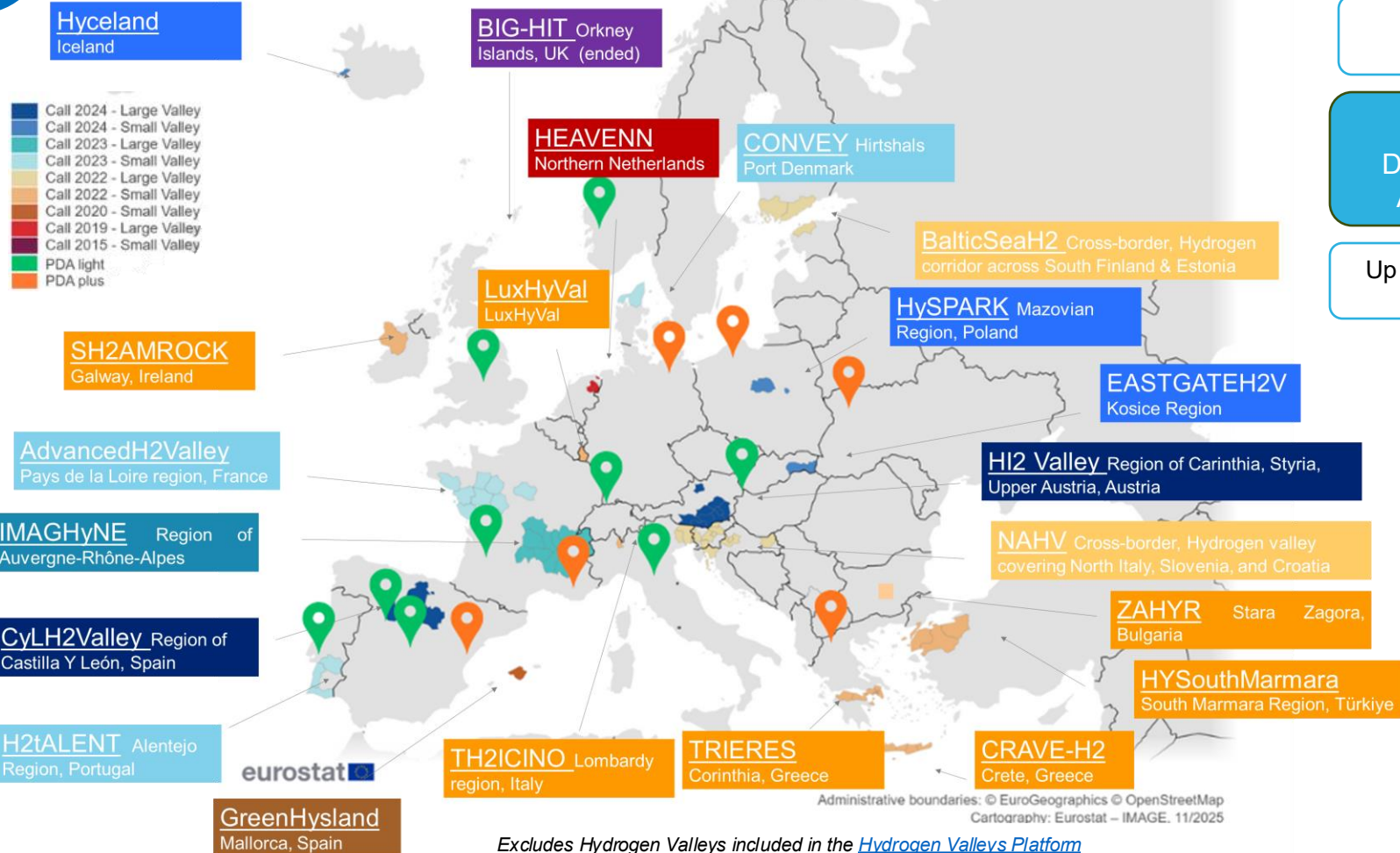
Total costs:
+1,300 M€

JU funding:
+250 M€

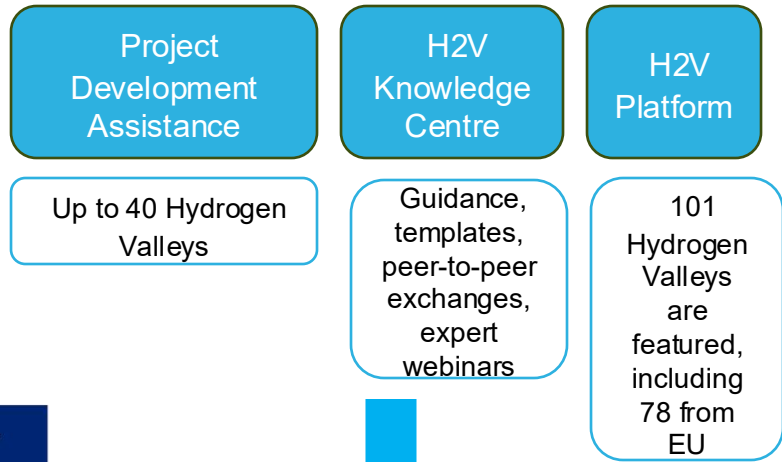
Accelerating deployment

Support for Hydrogen Valleys on their way to FID via a dedicated Hydrogen Valleys Facility

2

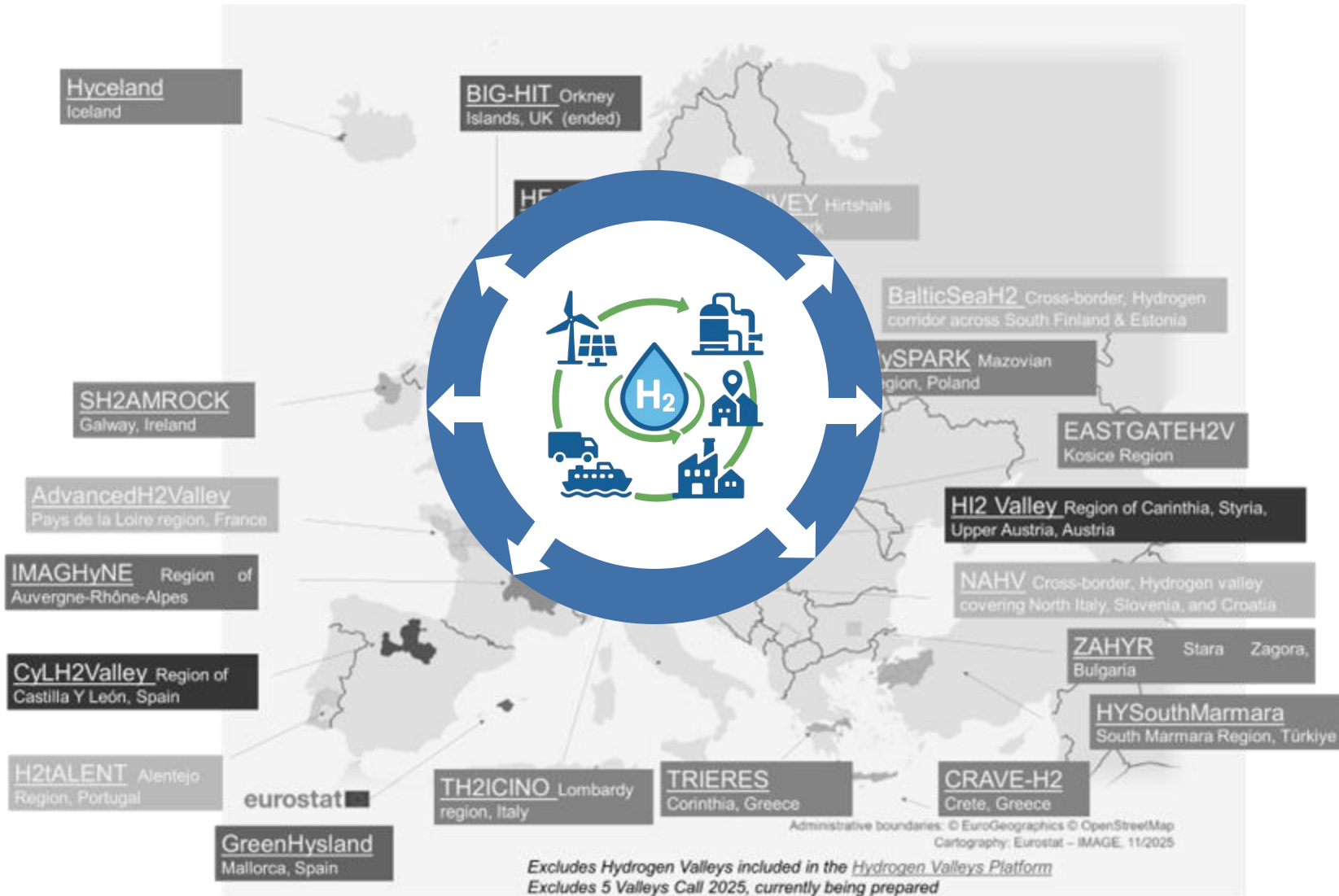


Hydrogen Valleys Facility



Excludes Hydrogen Valleys included in the [Hydrogen Valleys Platform](#)
 Excludes 7 Valleys Call 2025, currently being prepared

Despite the challenges encountered... Progress is underway

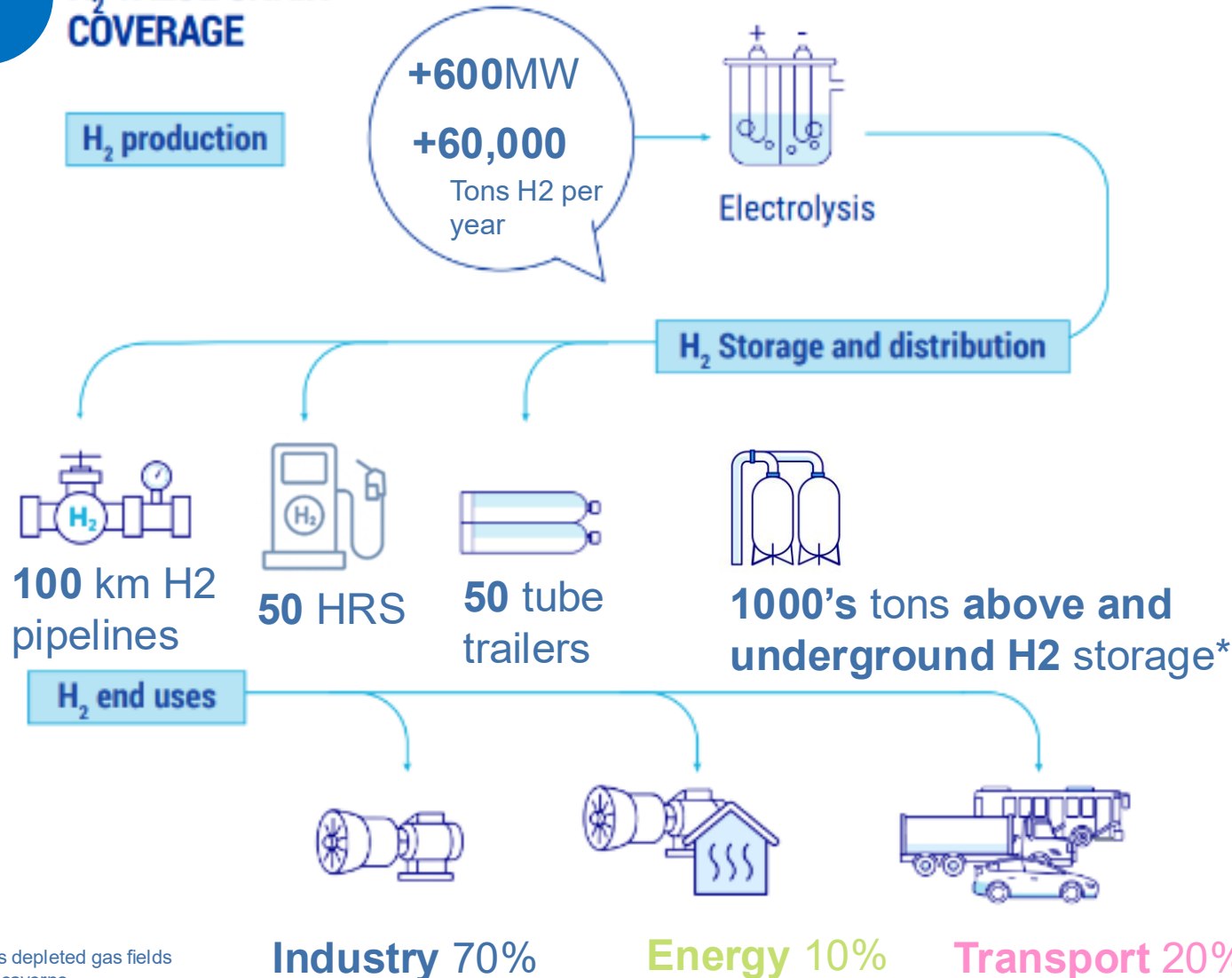


Hydrogen Valleys Value Chain Coverage

Indicative plans (exc. PDA support)

1

H₂ VALUE CHAIN COVERAGE



Energy

100 MW fuel cell for heat & power
 Gas/H₂ turbines
H₂ blending gas grid
Heat only (domestic, commercial, industry)

Industry

Ammonia production
Refineries
Steel making
Other chemical industry

Transport

+150 buses
 ~**200** Long-Haul trucks
 ~**7** garbage trucks
 ~**4** vessels
+150 vans
Light duty vehicles (taxis)
 non-road-mobile machinery (forklifts, tractors, etc.),
Others

*Includes depleted gas fields and salt caverns

Progress is underway...



Production

+600 MW



2.5 MW
GREEN HYSLAND



20 MW
3 MW
BalticSeaH2



30 MW
TRIÈRÈS
EPHYRA



10 MW
6 MW
H2 VALLEY
H2FUTURE



Storage

1000's tons above and Underground storage

Tests salt caverns
HEAVENN
IMAGHyNE
hypster



Distribution

50 HRS, 100 km H2 pipelines, 50 tube-trailers



GREEN HYSLAND
3 km H2 pipeline



1 HRS
TRIÈRÈS
CEF Transport



7 HRS
IMAGHyNE

2 tube-trailers
GREEN HYSLAND



3 tube-trailers
TRIÈRÈS

8 tube-trailers
IMAGHyNE



Progress is underway...



Transport



✓ 5 buses



✓ 7 coaches

✓ 4 buses



✓ 1 truck



Energy



FCs for heat and power



Hydrogen injection in gas grid



Industry

E-methane, eSAF, food industry



Steel production



Domestic heating



✓ 5 garbage trucks



✓ 5 taxis

✓ 1 salt-barge



Heavy duty trucks



Tailored Support for Hydrogen Valley

Wholistic approach



Tailored Support for Hydrogen Valley

Shaping What Comes Next

»» Looking ahead »»

- Intensify support to pre-FID activities -> derisking tool for project developers and investors
- CAPEX support conditionally granted to projects reaching FID (inc. contracts with offtakers)
- Market activation incentives (e.g OPEX support)
- Synergies by design with other EU, national and regional programmes,
- etc



Project Factsheet per project

TRIERES

Towards the development of a hydrogen valley demonstrating applications in an integrated EcoSystem in Greece

Project ID: 101112056
PRR 2025: Pillar 6 - H₂ Valleys
Call Topic: HORIZON-JTI-CLEANH2-2022-06-02
Coordinator: MOTOR OIL, EL
Beneficiary: MOTOR OIL, EL
Project Period: 01-07-2023 - 30-04-2028
Location: Greece

Finances:
 98 M€ Investments
 10.5 M€ Project costs
 8 M€ JU contribution
 Others

<https://www.trieres-h2.eu/>

Timeline:
 Phase 1: Project concept developed
 Phase 2: Feasibility study ongoing
 Phase 3: Pre-FID development
 Phase 4: Post-FID development
 Phase 5: Under construction
 Phase 6: In operation

Hydrogen Valley represents Greece's first of hydrogen initiative, anchoring the country's to the global clean hydrogen economy. Centered to the Motor Oil Corinth Refinery, the project aims to establish a hydrogen value chain—from production to end-use applications—positioning Greece as a regional hub for hydrogen in the Balkans, stem Europe, and the Eastern Mediterranean, with a particular focus on Crete and Cyprus.

ISS, MAIN ACHIEVEMENTS AND RESULTS

FETY AND SUPPLY
 Preliminary Safety framework for the Corinth Hydrogen Valley completed.
 Green hydrogen supply to be initiated according to schedule.
 Open access publication of a scientific paper on alternative green hydrogen production technologies from biomass.
 HAZOP study for electrolyser and tube trailers completed.
 HAZOP study and QRA for 1st HRS of AVINOL (subsidiary of Motor Oil) in Agioi Theodoroi completed.

LOGISTICS AND DISTRIBUTION
 Four Tube trailers for virtual pipelines acquired (-990 kg H₂ at 380 bar) (3 co-funded by the project and 1 by Motor Oil's own resources).
 Scheduling and distribution optimization underway for road-based hydrogen transport (virtual pipeline).

INFRASTRUCTURE DEVELOPMENT
 Following a positive FID, the EPHYRA electrolysis unit will be upgraded to 50 MW under the PRP, including ancillary construction works for renewable hydrogen supply and distribution, with first green hydrogen expected to flow in 2026.
 One Hydrogen Refueling Station (HRS) operational in Agioi Theodoroi Corinth, constructed with co-funding of GEF-Transport; one HRS under preparation of tendering procedure for public buses depot; three more planned.
 One hydrogen car under tender procedure by the Municipality of Loutraki-Piraeus-Agioi Theodoroi with possibility now to load fuel from Agioi Theodoroi HRS.
 Technical specs completed for three hydrogen buses (OSY) to be co-funded by the project and 50 more hydrogen powered buses expected to be funded by secured Modernisation Fund resources.
 Preparation of tender documents/specifications under way for 100kWe FC APU in Port of Piraeus.
 Feasibility studies launched for:

H₂ VALUE CHAIN COVERAGE

H₂ production: >2410 tonnes H₂ per year via Electrolysis.

H₂ Storage and distribution: H₂ pipeline, HRS, Tube trailers, CGH, above-ground storage, Compressor & Trailer filling Terminal.

H₂ end uses: Industry (H₂ in lubricant, Industry H₂ in refinery), Energy (FC APU for Port H₂ injection in gas grid), Transport (Vessels coastal and sea-going, Bus, Car private).

Portfolio level information



Working with the regions

You can find here information about our extensive work with the regions, from 2014 onwards, including the FCH Regions and PDA Initiatives, Hydrogen Valleys, and other related actions.

Working with regions



Hydrogen Valleys

Latest information, publications and events on Hydrogen valleys in Europe.

Hydrogen Valleys



Hydrogen Valleys Facility

We're accelerating the number of hydrogen valleys in Europe by providing technical, financial and legal support through dedicated Project Development Assistance (PDA).

H2Vs Facility

Annual EU Hydrogen Valleys Days



2025 Edition

Hydrogen Research & Innovation Days

24-25 November 2025



Thank you for your attention!