

Hydrogen SKILLS development - *Educational & Training activities at EU level*

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23 September 2026

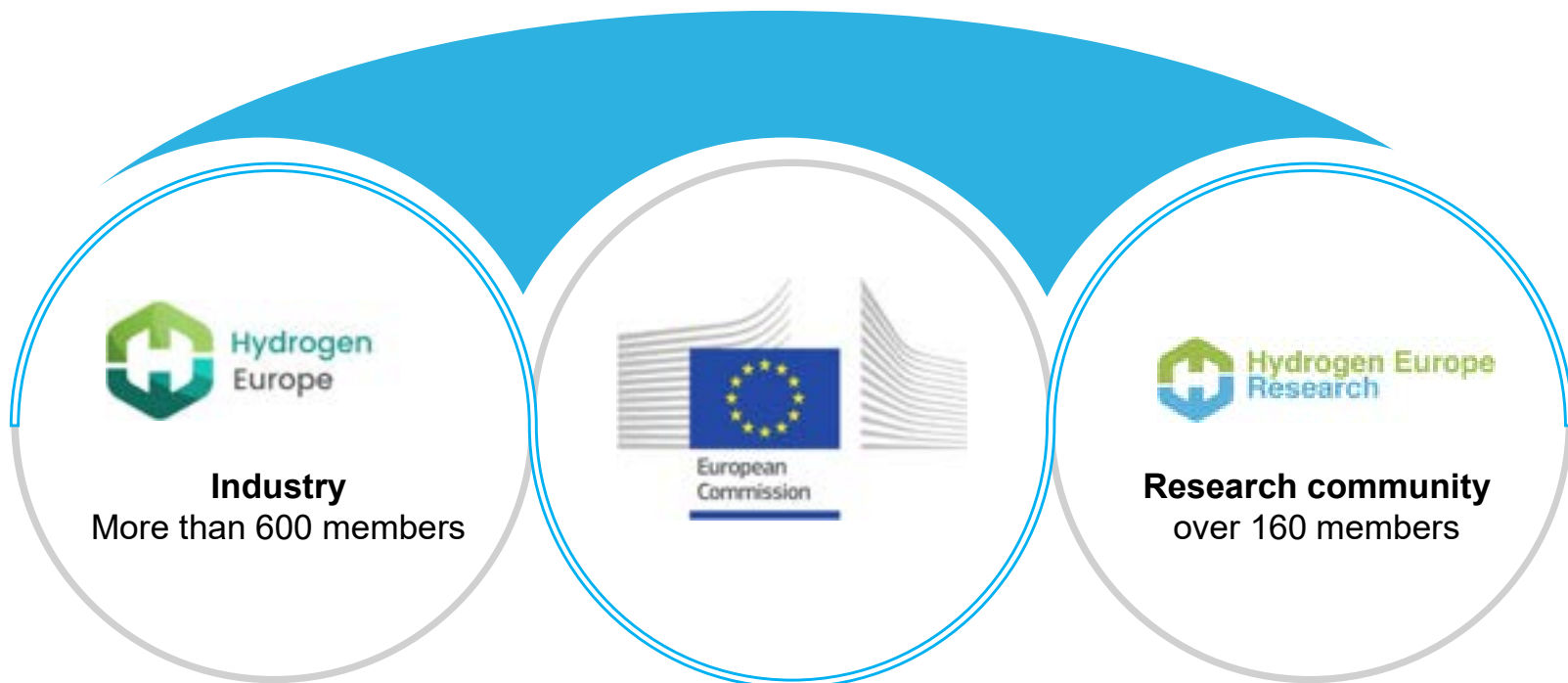
EUROPEAN PARTNERSHIP





Clean Hydrogen Joint Undertaking

EU Institutional Public-Private Partnership (IPPP)



1 billion EURO from Horizon Europe* to implement R&I activities and facilitate the transition to a greener EU society through the development of hydrogen technologies

*** additional 200 million EURO for Hydrogen valleys (under REPowerEU)**

Clean Hydrogen JU Objectives

General/alignment to EU policies

-  Support the implementation of the Commission's **Hydrogen Strategy**
-  Stimulate **research and innovation on clean hydrogen** production, distribution, storage and end use applications
-  Strengthen the **competitiveness of the EU clean hydrogen value chain**
-  Contribute to the EU ambitious **2030 and 2050 climate ambition incl Green Deal**

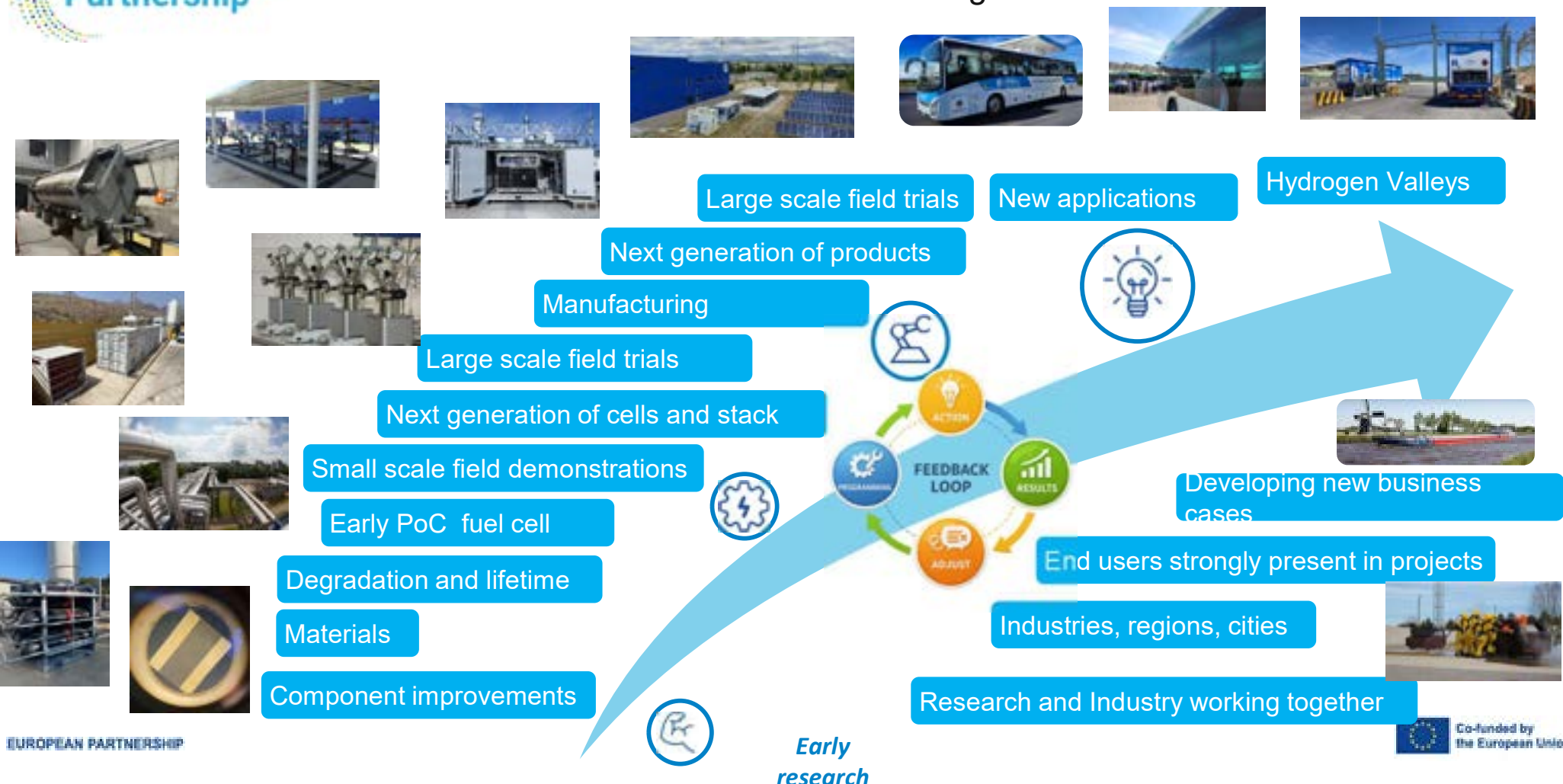
Specific/tech to market leadership of the sector

-  Improve the **cost-effectiveness, efficiency, reliability**, quantity and quality of clean hydrogen solutions across **entire value chain**
-  Strengthen the **knowledge/capacity of scientific and industrial actors** along the Union's hydrogen value chain while supporting the **uptake of skills**
-  Demonstrations of clean hydrogen solutions with a view to **local, regional and Union-wide deployment**, aiming to involve stakeholders in all Member States and across **entire value chain**
-  Increase **public and private awareness, acceptance** and uptake of clean hydrogen solutions



Almost two decades of the Joint Undertaking

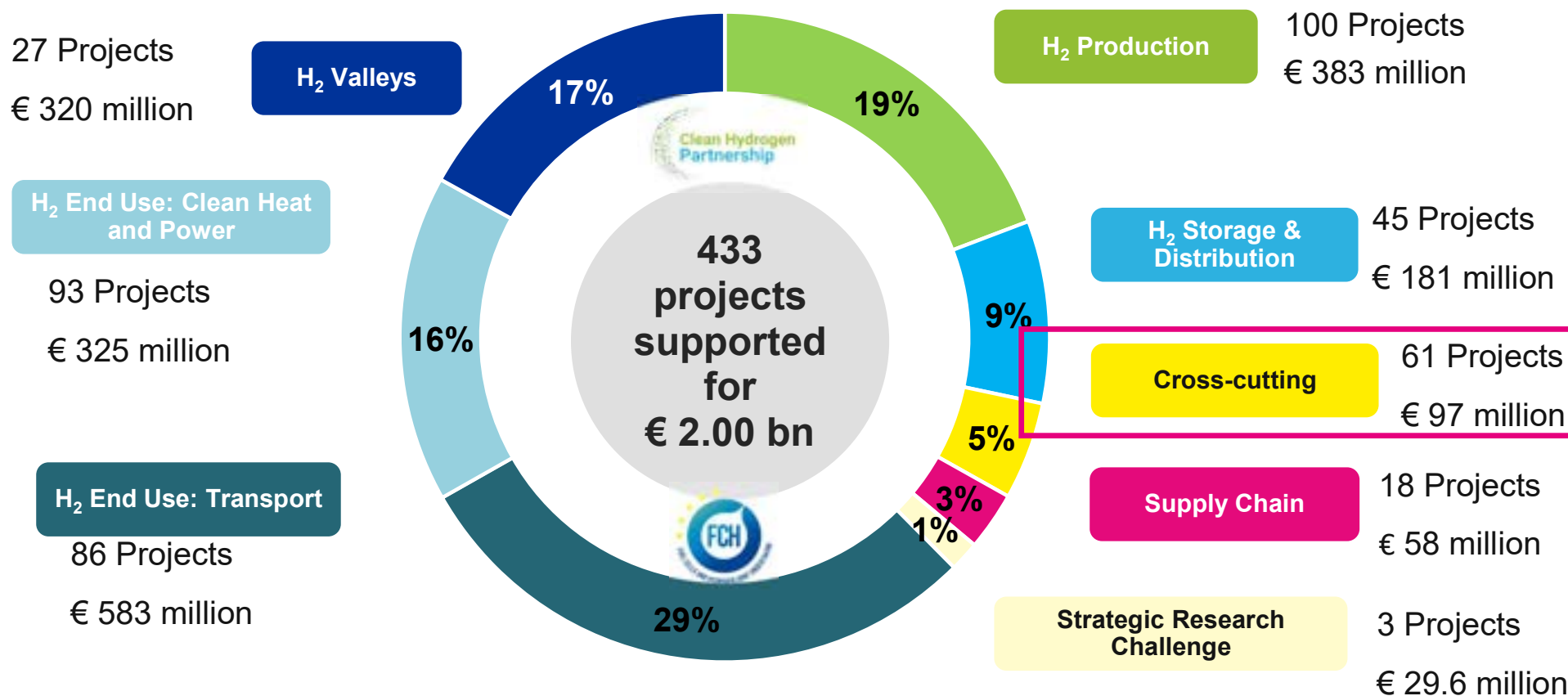
From **research and innovation** to delivering solutions in the market



Clean Hydrogen JU Programme

2008-2026 Cumulative funding

5



* None of the projects from Call 2026 are included as they are under GA preparation



Activities on Education and Training - Overview

Grants - 17 dedicated Projects

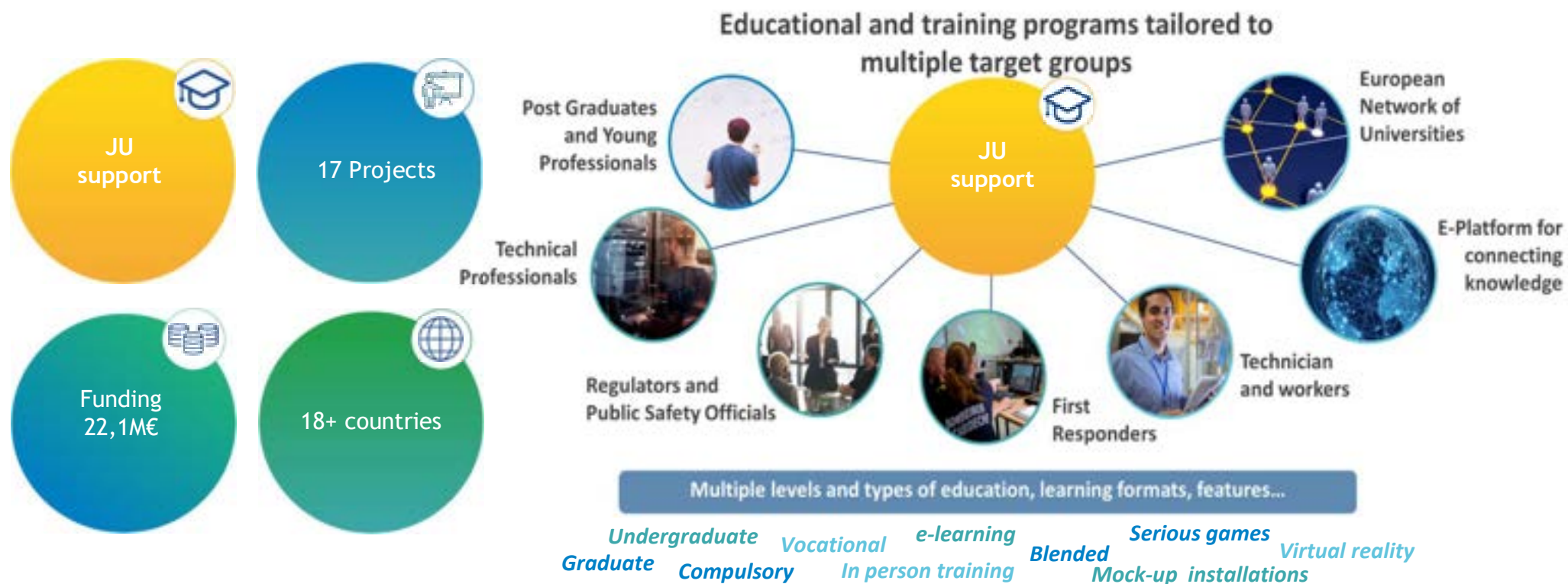


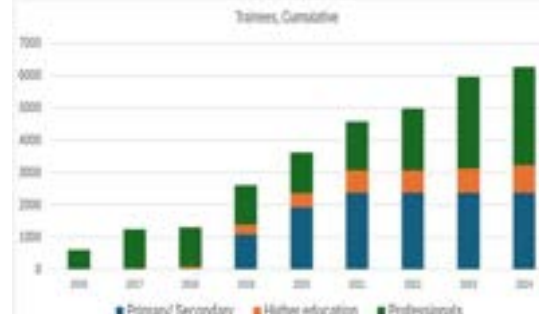
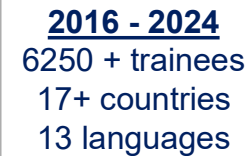
Other activities - Observatory

This block contains two screenshots. The top screenshot shows the 'Clean Hydrogen Partnership' website, specifically the 'European Partnership for Hydrogen Technologies' section. The bottom screenshot shows the 'European Hydrogen Observatory' website, featuring a map of Europe with numerous location pins and a section titled 'Report 1: The European hydrogen education and research landscape'.

Educational Activities - Projects - Overview

- Promoting excellence in education and training and preparing the European workforce while increasing trust





Educational Activities: e-tools

9



Novel Education and Training Tools based on digital applications related to Hydrogen and Fuel Cell Technology

Project Information

NET-Tools
Grant agreement ID: 738648

DOI
10.3000/738648

Closed project

Start date
1 March 2017

End date
30 November 2020

Funded under
SOCIAL CHALLENGES - Secure, clean and efficient energy

Total cost
€ 1 096 007,50

EU contribution
€ 1 096 007,50

Coordinated by
KARL-FRUEH INSTITUT FÜR TECHNOLOGIE
Germany




- Education and training e-tools dedicated to FCH relevant themes
- Education and training for students and professionals
- Interaction and interconnection with relevant projects
- Informal platform for any stakeholder, public, etc.



Category	Tools
e-Laboratory	1. Design & optimization of novel H₂ storage systems for mobile applications and uses 2. Simulation of H₂ storage systems for mobile applications 3. Design, simulation and optimization of H₂ storage systems for mobile applications 4. Design, simulation and optimization of H₂ storage systems for mobile applications 5. Design, simulation and optimization of H₂ storage systems for mobile applications 6. Design, simulation and optimization of H₂ storage systems for mobile applications 7. Design, simulation and optimization of H₂ storage systems for mobile applications 8. Design, simulation and optimization of H₂ storage systems for mobile applications 9. Design, simulation and optimization of H₂ storage systems for mobile applications 10. Design, simulation and optimization of H₂ storage systems for mobile applications
e-Education	1. Design & optimization of novel H₂ storage systems for mobile applications and uses 2. Simulation of H₂ storage systems for mobile applications 3. Design, simulation and optimization of H₂ storage systems for mobile applications 4. Design, simulation and optimization of H₂ storage systems for mobile applications 5. Design, simulation and optimization of H₂ storage systems for mobile applications 6. Design, simulation and optimization of H₂ storage systems for mobile applications 7. Design, simulation and optimization of H₂ storage systems for mobile applications 8. Design, simulation and optimization of H₂ storage systems for mobile applications 9. Design, simulation and optimization of H₂ storage systems for mobile applications 10. Design, simulation and optimization of H₂ storage systems for mobile applications

38 e-tools publicly accessible!
21 e-engineering tools
17 e-science tools



Educational Activities: **First responders**



European Hydrogen Emergency Response training programme for First Responders

Project Information

HYRESPONSE
Grant agreement ID: 325348

[View project](#)

Start date
1 June 2013

End date
30 September 2019

Funded under
Specific Programme "Cooperation" Joint Technology Initiative

Total cost
€ 2 928 522.40

EU contribution
€ 1 606 433.00

Coordinated by
ECOLE NATIONALE SUPERIEURE DES OFFICIERS
DE SAPEURS-POMPIERS (ENSOPI)
France




World's First responder educational and practical hydrogen safety training

- Educational training
- Operational training
- Virtual reality training



Learning H2 Safety



Virtual Reality Training



International Trainees



Achievements

400+ course slides and 300+ pages divided into 10 items: safety basics, RCS, cases studies

Exercise scenarios using virtual reality gives first hand experience

Real-life scenarios, to practice what has been learned

Realization of a European emergency response guide

70+ (firefighters) trainees from 15 countries
21 international observers



Educational Activities: **First responders II**

HORIZON
2020

European Hydrogen Train the Trainer Programme for Responders

Project Information

HyResponder
Grant agreement ID: 675006

Project website [\[link\]](#)

DOI: [10.30001/300013](#)

Project closed

ERC signature date: 9 December 2019

Start date: 1 January 2020

End date: 31 May 2023

Funded under
SOCETAL CHALLENGES – Secure, clean and efficient energy

Total cost: € 1 000 000.00

EU contribution: € 1 000 000.00

Coordinated by
UNIVERSITY OF ULSTER
United Kingdom



Achievements

Update and develop operational, educational, and virtual reality (VR) training tools (HYRESPONSE project)

Revise the European Emergency Response Guide (EERG) to include liquefied hydrogen intervention tactics

Provide multi-lingual resources translated into 8 languages via a centralized digital e-Platform (NET-Tools project)

Pan-European network of certified safety trainers across 10 countries

(<https://hyresponder.eu/e-platform/>)



Training
Materials

European Emergency
Response Guide

e-Laboratory
e-Forum

All resources
freely accessible!!



Co-funded by
the European Union



Educational Activities: H2 Academy



The European Hydrogen Academy

Shape your future through education:

Welcome to the European Hydrogen Academy

Search...

>>>>> 230 programmes available Find Your Programme



Learn
Learning about hydrogen technology and production.

Find
Discover various resources and information on hydrogen technology.

Link
Access school network interested in hydrogen technology.

Explore
Dive deeper into the world of hydrogen technology.

Objectives

Focus is on coordination/ quality assurance (all “formal” education levels)

Development of teaching materials: >10 books, library/ repository, work-books, etc.

Setup a large alliance of universities, institutions and schools (the networks)

Online platform to collect & share knowledge



Willing to join?
Join the networks!!



Educational Activities: **Training of public authorities**



Training Permitting Staff in Hydrogen Technologies – PERMITTHY

JU Contribution: ca. 1 M€;

Start: January 2026. Duration: 30 months

PermittHy Enabling confident, informed and efficient hydrogen permitting.

... to Hydrogen.EU [new tab](#)

- 1 Strengthening Permitting Capacity**
Improve the ability of authorities and stakeholders to assess hydrogen projects clearly and consistently through guidance, training, and practical resources.
- 2 Developing Practical Tools and Guidance**
Provide a Best Practice Handbook and introduce contemporary tools to support hydrogen safety engineering.
- 3 Delivering Training and Skills Development**
Deliver multilingual training through in-person and online courses, including Train-the-Trainer programmes, to build skills across Europe.
- 4 Ensuring Long-Term Impact and Integration**
Align outputs with the Net-Zero Hydrogen Academy and support continued use through sustainable delivery beyond the project duration.



- Educational material in 18 EU languages;
- Trainings across 25 Member and 4 Associated States

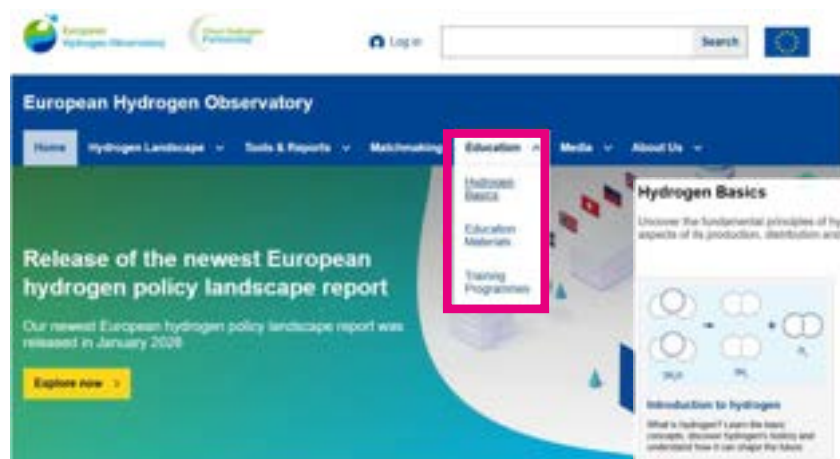


Co-funded by
the European Union

Other activities - Observatory

15

- European Hydrogen Observatory (former Fuel Cells and Hydrogen Observatory – FCHO)



Annual reports!
The hydrogen education and research landscape
(October 2025)



Education Materials

Find publicly accessible educational materials available online. Documents can be searched by educational level, by course subject, by language or by the year of release.

Education materials (198)
Show 1 - 10 of 198
of to the (198) items

Training Programmes

This map displays training programmes based on location and allows filtering by type of training, focus of the training and language. The type of training refers to a broad variety of training opportunities, such as vocational or professional training, summer schools, or Executive or Master programmes.

The training data on the Observatory are shared by training providers and processed by Hydrogen Europe. It is provided as an information tool; an individual is provided information on training opportunities by filling in the application. The training to be added, a complete set of information and references are required in order to allow its posting.

Filter by

Search

Level of Ed

Hydrogen

Filter by

Search

Training Programmes (327)

Show 1 - 20 of 327



Ongoing Public consultation on the future Regulation/Single Basic Act for Joint Undertakings/JUs

Clean Hydrogen Partnership is essential for Europe's hydrogen future

- The **JU (treaty-based partnership) model**: building a coordinated hydrogen ecosystem
- Strengthens **European industrial competitiveness and sustains technological leadership**
- Contributes to **EU market leadership by bringing technologies from research to the market**
- Accelerates research and innovation with both **public-private combined support**

➔ Supporting documents are on our [webpage](#).

Have your say **until 16 October 2026** .

https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/16413-Horizon-Europe-European-Partnerships-to-be-implemented-as-joint-undertakings_en



For further information
<https://www.clean-hydrogen.europa.eu/>



Hydrogen Skills Development and Training Landscape - Canada

Western Canada

- 1** - SAIT's Centre for Energy Research and Clean Unconventional Technology Solutions
- 2** - University of British Columbia's Smart Hydrogen Energy District (SHED)
- 3** - University of Alberta's Centre for Hydrogen Innovation, Workforce Development and Outreach
- 4** - Simon Fraser University (SFU)'s Clean Hydrogen Hub
- 5** - NAIT's Clean Energy Professional Upskilling Program
- 6** - BCIT's Hydrogen Hub (Fueling Change Program)

Eastern Canada

- 7** - University of Windsor's Hydrogen Summer School
- 8** - Ontario Tech University, Clean Energy Research Laboratory
- 9** - Hydrogen Research Institute at Université du Québec à Trois-Rivières
- 10** - College of North Atlantic's School of Sustainable Development

Workforce Development to Support Strategic Priorities

- ❖ Production project economics and competitive policy
- ❖ Hubs and corridors and end-use deployment
- ❖ Codes, standards and safety
- ❖ Awareness-raising and enhanced market data

Source: Hydrogen Strategy for Canada Progress Report (2024)





HyAcademy.eu: Europe's gateway to trusted H2 education

Formal education, quality content and European networks for schools, universities and industry.

Find the right H₂ - education. Join the network. Continue beyond the project.

ACCESS

Open educational content:

- e-library (documents, videos, podcasts, presentations, etc.)
- university-style textbooks
- Databases of H2 education providers, incl. offer

CONNECT

500+ schools, 100+ universities and industry partners

- exchange,
- cooperate
- make real H2 applications visible

CONTINUE

Preparing the transition to an independent AISBL so that HyAcademy.eu can continue beyond the funded project.

Join the European Hydrogen Academy Networks

Scan to connect your school, university or company.



School Network



University Network



Industry Network

**A lasting European platform for H2 education:
trusted content, searchable pathways and active networks.**

Contact: Dr Birgit Thoben | bt@future.solutions | www.hyacademy.eu



strengthening hydrogen permitting capacity across Europe

Practical guidance, digital tools and multilingual training
for everyone involved in hydrogen project assessment and approval.

SHARED UNDERSTANDING

Common H₂ basics,
terminology and safety
awareness for applicants,
authorities, engineers,
consultants and emergency
services.

PRACTICAL & DIGITAL SUPPORT

Guidance, tools and hands-
on deep dives to address
technical, procedural and
regulatory challenges.

RECOGNISED PATHWAY

Working towards a European
qualification and mastery
pathway for hydrogen
permitting.

PermittHy helps both sides of the permitting table assess hydrogen projects with the same evidence-based understanding.

Not only faster processes – clearer, safer and more consistent project decisions.

From hydrogen knowledge to confident permitting decisions

Contact: Dr Robert Steinberger-Wilckens | r.steinberger@planet-energie.de | <https://permitthy.eu>





Ministerio
de Industria,
Energía y Minería

H2U Project

Green hydrogen and derivatives

Gastón Ellis
gaston.ellisbodio@miem.gub.uy

Introduction to Uruguay

Over 90% of Uruguay's electricity production comes from renewable sources. Green hydrogen was introduced as a solution for unused electricity at certain times.

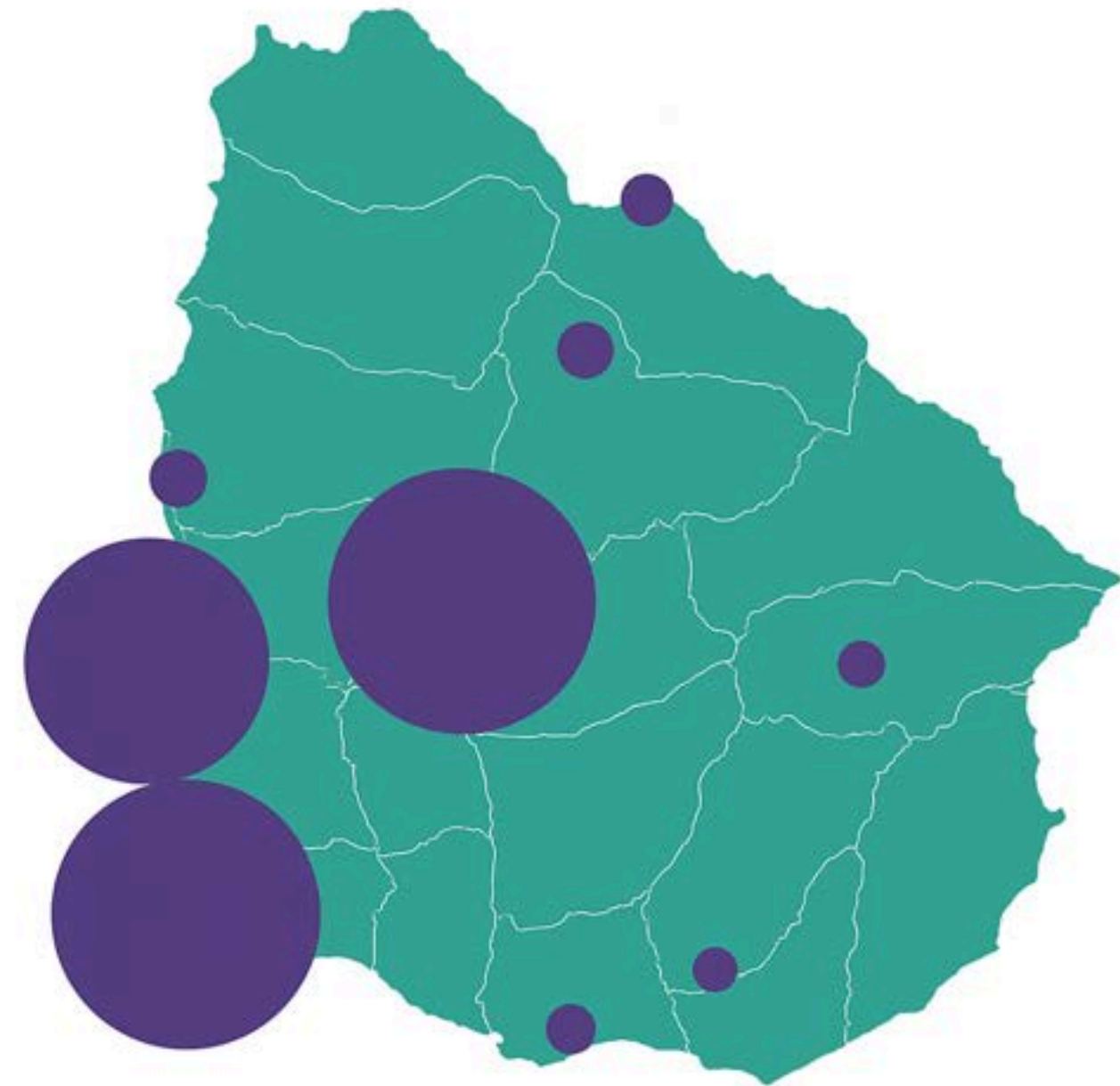
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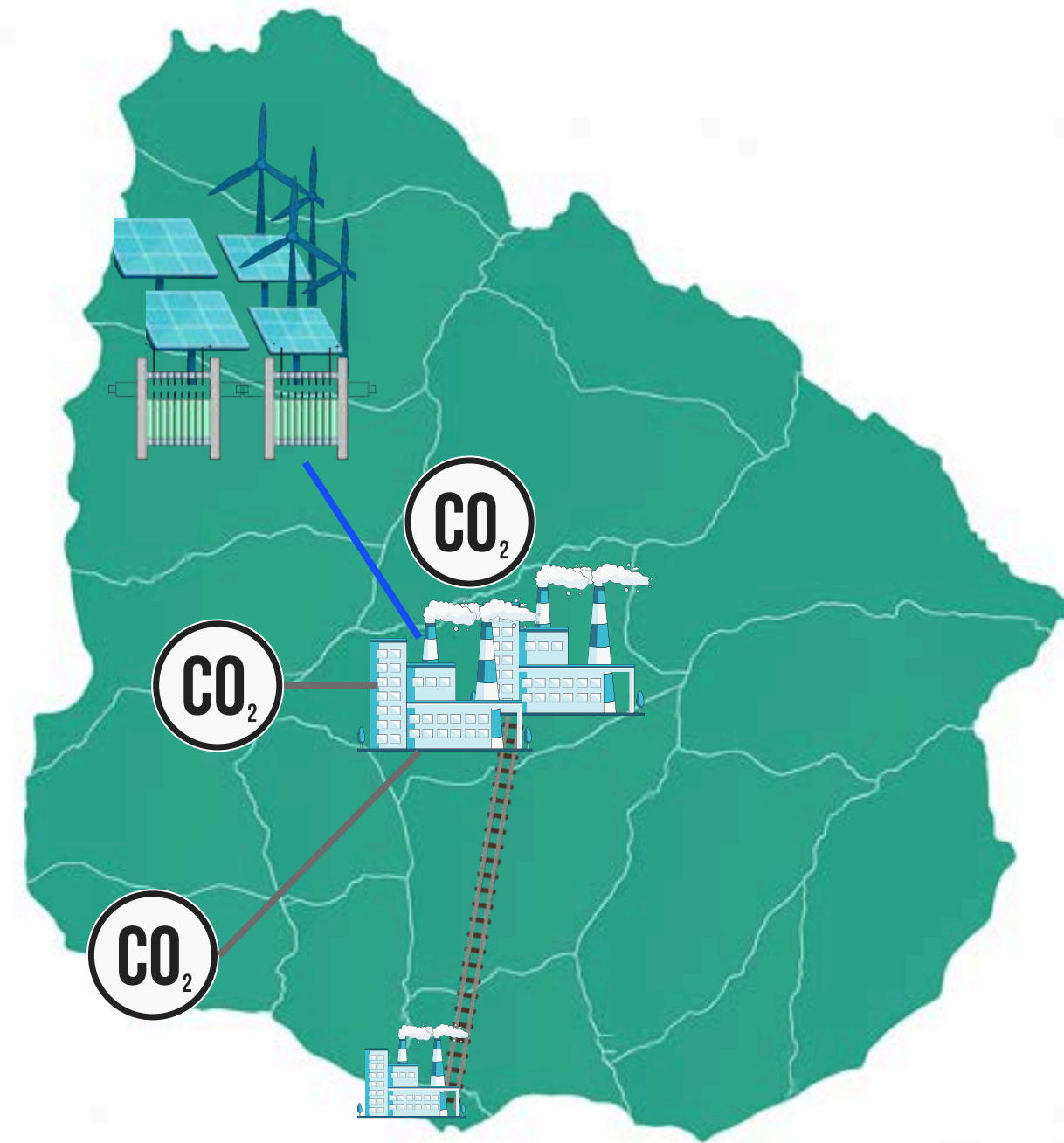
<https://h2lac.org/archivos/analisis-de-la-disponibilidad-de-co2-para-la-produccion-de-derivados-de-h2v-en-uruguay/>

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<https://www.gub.uy/ministerio-industria-energia-mineria/politicas-y-gestion/analisis-logistica-infraestructura-localizaciones-para-cadena-valor-derivados>



Currently working

In September 2024, the MIEM and the European Commission signed a framework declaration of intent to support the implementation of the Green Hydrogen and Derivatives Roadmap in Uruguay.

Through this initiative, which will be carried out with support from the European Union's Euroclima program, the goal is to strengthen the capacity-building efforts required for the development of the green hydrogen and derivatives value chain.

- 01** Regulatory Framework
- 02** Infrastructure and Logistics
- 03** Capacity Building
- 04** Socioeconomic Impacts
- 05** Citizen Dialogue

