

//EU HYDROGEN

RESEARCH DAYS

15-16 NOVEMBER



Co-funded by
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Cross-cutting Issues

Alberto J. Garcia Hombrados

Project Officer – Clean Hydrogen Partnership



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Parallel sessions

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November 16th. 9:30 - 11:00



Sustainability and Supply Chain

November 16th. 13:00 - 14:30



Pre-Normative Research

November 16th. 13:00 - 14:30

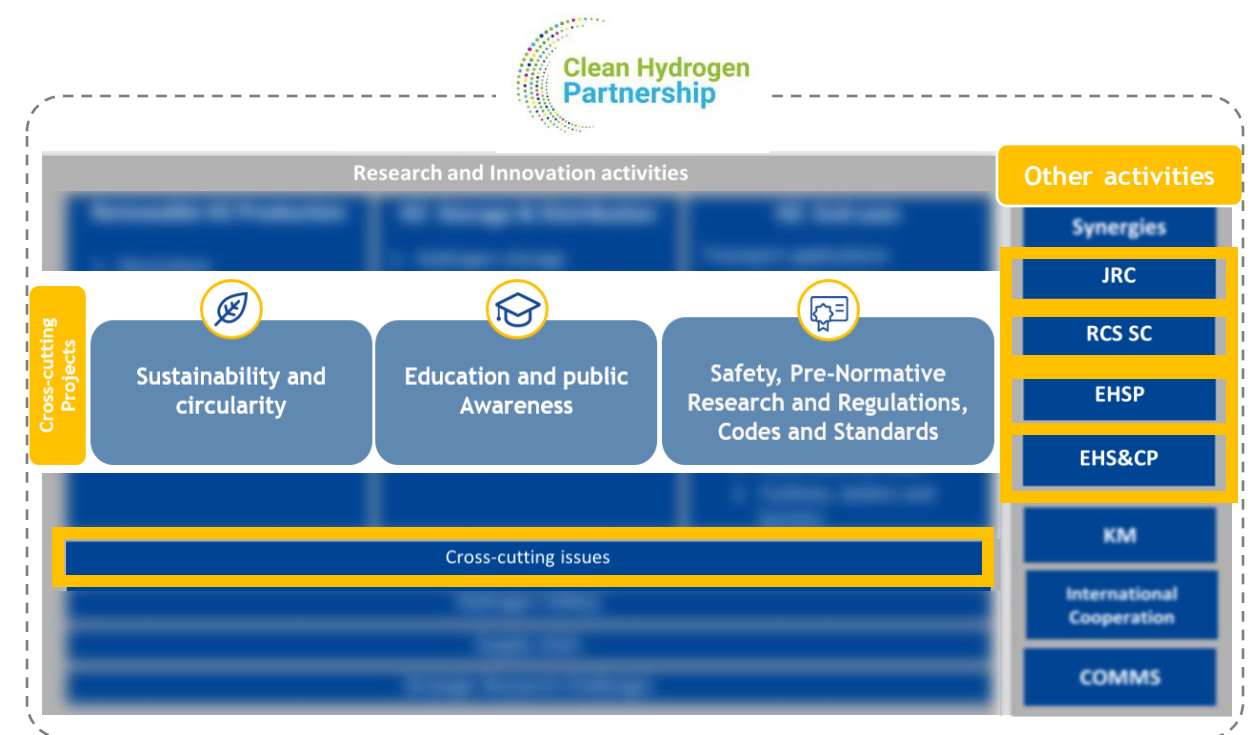
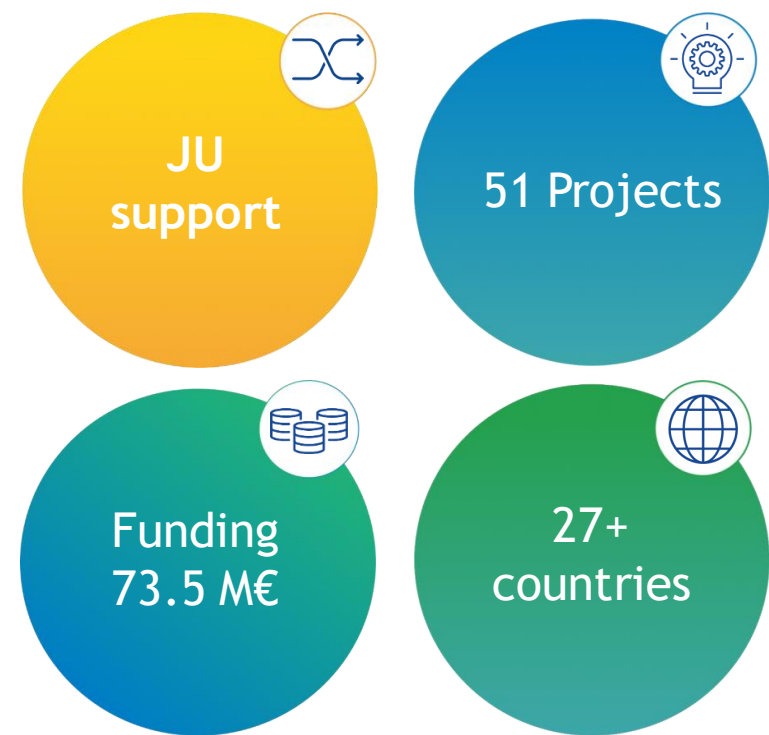


Skills

Cross-cutting Issues

Continuous support over the years - Overview

“Supporting R&I activities (projects) on horizontal nature topics”
“Strong links with the other JU Programme activities”



R&I activities and main links with other activities

Sustainability and circularity

Ensuring hydrogen technologies are sustainable and circular



JU support



6 Projects



Funding
5,76 M€




10 countries
involved

Cross-cutting
Projects



Life Cycle
Assessment



Developing guidance for LCA
application to FCH
technologies



Recycling
& dismantling



Developing tech. and
strategies for recycling
and dismantling



Guarantees of origin
framework



Providing truthful
information about the
origin of hydrogen

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Sustainability and circularity

Projects ongoing and additional initiatives in preparation



Additional Cross-cutting Projects in preparation



- Product Environmental Footprint Category Rules (PEFCRs)
- Determination of H2 releases from the H2 value chain (& HORIZON-CL5-2023-D1-01-03: Climate impacts of a hydrogen economy)

Expert workshop on Environmental Impacts of H2

With the support of:

Better understanding and knowledge of the environmental impacts of hydrogen and hydrogen releases

www.clean-hydrogen.europa.eu/projects-repository_en
<https://publications.jrc.ec.europa.eu/repository/handle/JRC130362>



Sustainability and circularity

Other JU activities

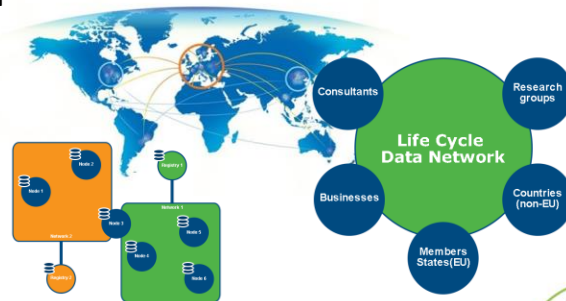
Other activities

Collaboration with the JRC

- LCA checklist guidance document
To be published soon!!



- Life Cycle Data Network (LCDN)
(European Platform on Life Cycle Assessment)



European Hydrogen Sustainability & Circularity Panel (EHS&CP)

Expert group supporting the JU on sustainability and circularity aspects, encompassing environmental, social, and economic aspects

Call for experts for
the EHS&CP

Expected to be launched soon!!



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Education and public Awareness

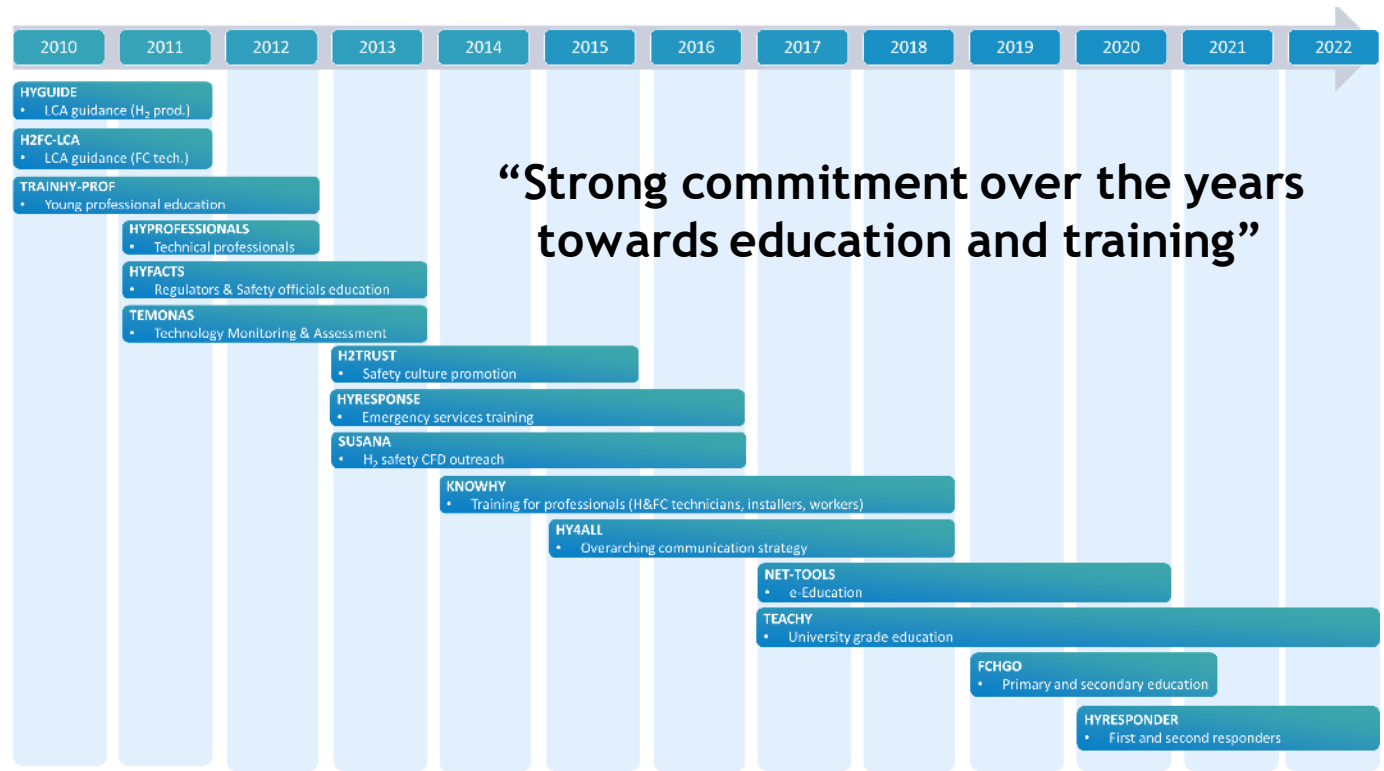
Promoting excellence in education and training while increasing trust


JU support


15 Projects


Funding 18,1M€


18+ countries



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Education and public Awareness

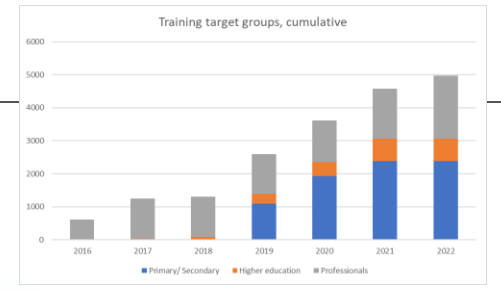
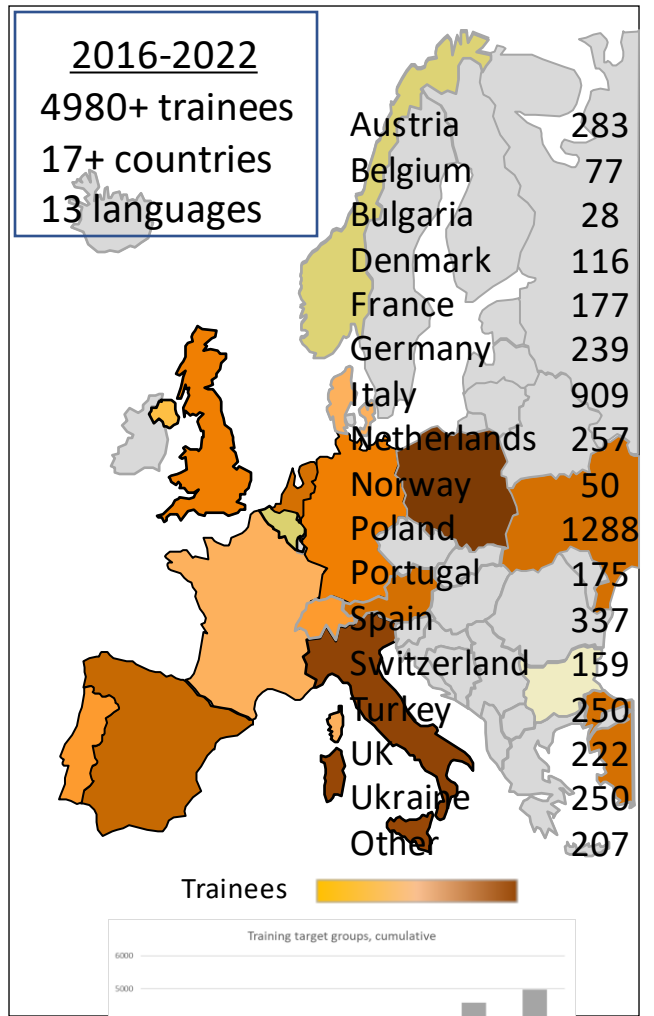
Preparing the European workforce

Educational and training programs tailored to multiple target groups



Multiple levels and types of education, learning formats, features...

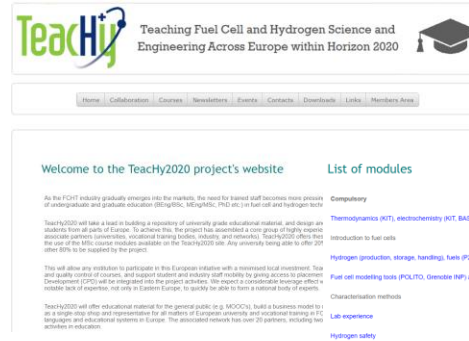
Undergraduate Graduate Vocational Compulsory e-learning In person training Blended Serious games Mock-up installations Virtual reality



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Education and public Awareness

Projects ongoing and additional initiatives in preparation

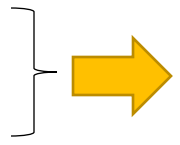


WEBINAR
What do Europeans know about hydrogen technologies?
State of play of public awareness
7 July 2023, 09:30 – 12:00 am CEST



Additional Cross-cutting Projects in preparation

- The European Hydrogen Academy (& ERASMUS+ GreenSkills4H2 project)



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Education and public Awareness

Other JU activities

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

- Annual reports!

Chapter 6
2022 Education & Training
March 2022



Other activities

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.

Educational materials listed are collected by [Hydrogen Europe Research](#) from European projects' deliverables (Clean Hydrogen Partnership and other EU programmes) as well as other reliable sources identified through desk research.

Training Programmes

Individuals and organisations wishing to share their materials for this open access library

The 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 trainings, summer schools, or Bachelor or Master programmes.

Filter by

Search

Level of Education

Course Focus

Language

Year

Items per page

Education materials (426)

- Show 1 - 10 of 426
- 2022
H2 End-uses | English
H2 Educate
Type of material: Activities, Teacher Guide, St
Source: US Department of Energy
 - 2022
H2 End-uses | English
Green Skills for the maritime trans
Type of material: Text, Slides
Source: SkillSea
 - 2022
General | English
Hydrogen and Fuel Cells 101
Type of material: Slides
Source: US Department of Energy
 - 2022

Filter by

Search

Type of training

Focus of the training

Language

Items per page

Training Programmes (205)

Show 1 - 200 of 205



Webtools • @EC-GISCO • Leaflet • @OpenStreetMap contributors | Disclaimer

Bachelor | French | Université de Lorraine | IUT Longwy

BUT Electrical Engineering and Industrial Computing

Bachelor | French | Université de Lorraine | IUT Longwy

Professional degree in sustainable construction and mobility



Safety, Pre-Normative Research (PNR), and Regulations, Codes, and Standards (RCS)

*“Addressing key safety aspects to support a frictionless roll out”
“Supporting and facilitating adequate/ enabling frameworks for market uptake”*



JU support



30 Projects



Funding
54,7 M€



21+
countries

Safety

Addressing key safety-related aspects

Cross-cutting Projects



Hydrogen sensors

Guidelines to select and use the best sensor for a particular application



CFD for safety analysis

Development of best practices, HYMEP evaluation protocol



Safety expert group

Development of H₂ safety expert group



Other activities



Collaboration with the Joint Research Center (JRC)

Hydrogen Incidents and Accidents Database (HIAD 2.0)

Tools for Innovation Monitoring (TIM)

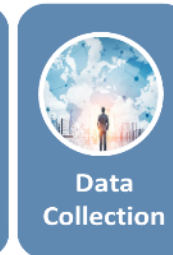
European Hydrogen Safety Panel (EHSP)



Project level



Program level



Data Collection



Public Outreach

Pre-normative research (PNR), Regulations, Codes, and Standards (RCS)

Supporting and facilitating adequate frameworks for market uptake

Cross-cutting
Projects



Pre-normative Research

Addressing knowledge gaps to support RCS development



Legal and administrative processes

Identifying barriers and sharing best practices across Europe



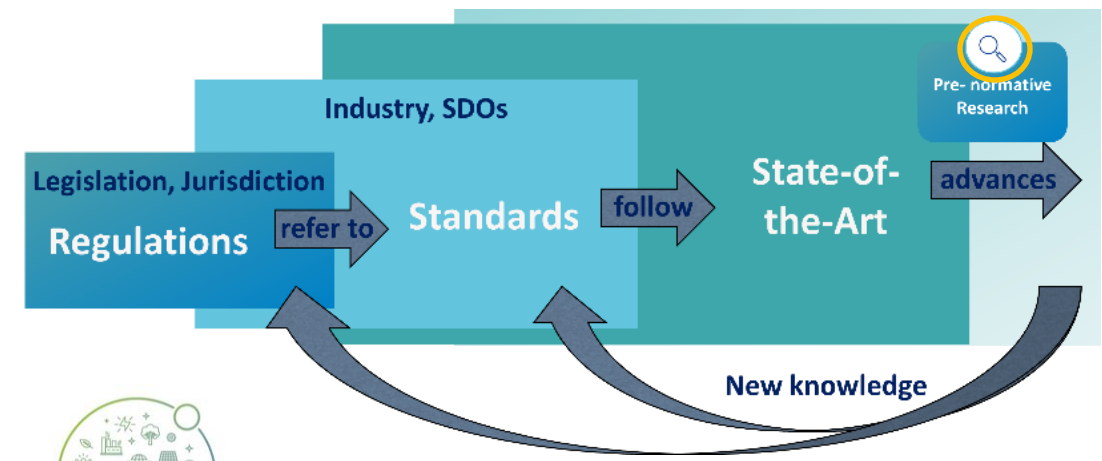


Guarantees of origin framework

Providing truthful information about the origin of hydrogen



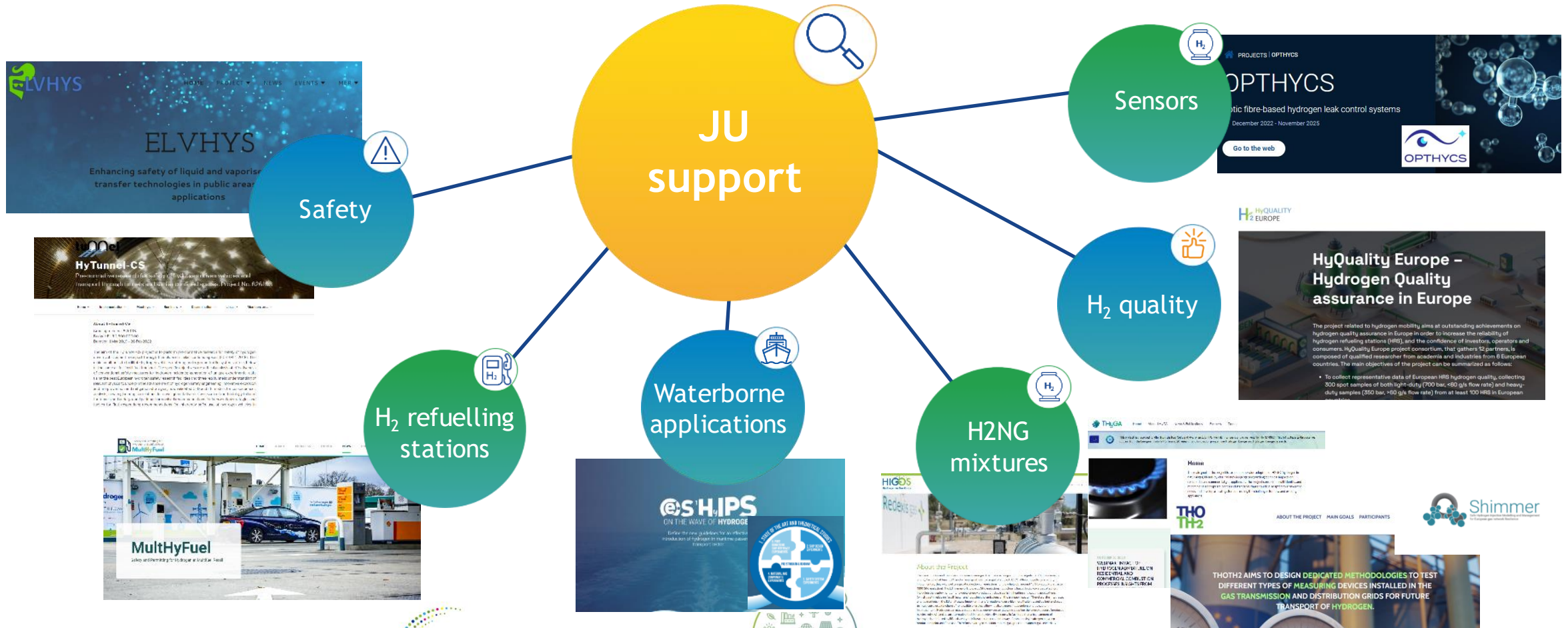
Pre-normative research (PNR) activities:
An essential step advancing Regulations, Codes, and Standards



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Safety, Pre-normative research (PNR), Regulations, Codes, and Standards (RCS)

Projects overview

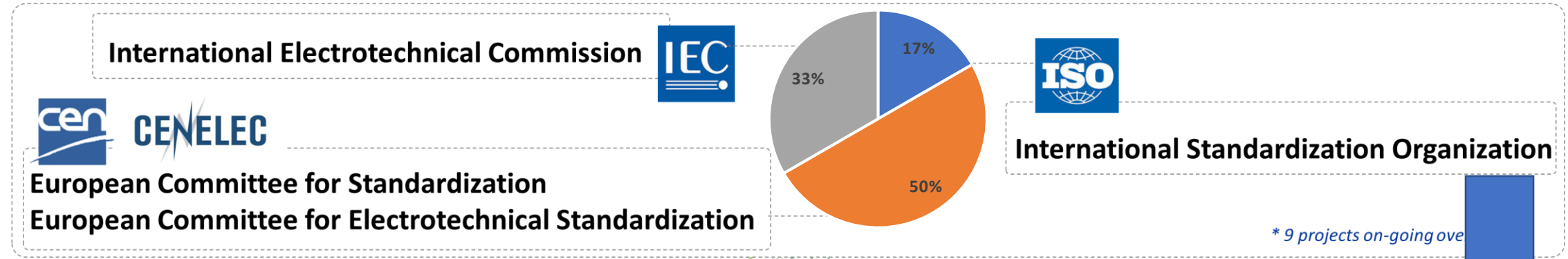
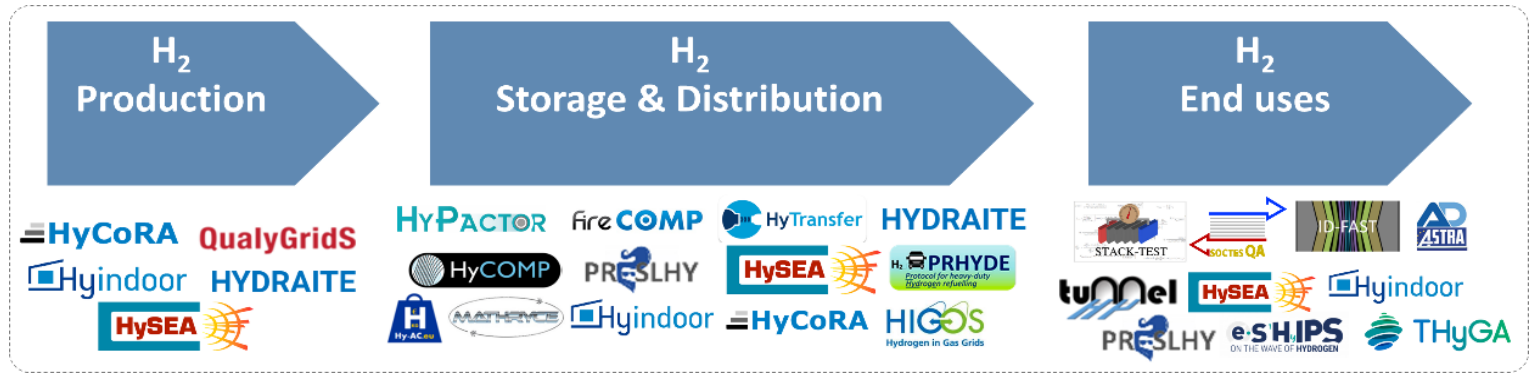


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Pre-normative research (PNR), Regulations, Codes, and Standards (RCS)

Providing science-based information to create and further develop standards

Covering the entire H₂ chain and targeting standards at European and International level



Conclusions



Sustainability, circularity, education, public awareness, safety, PNR... are cross-cutting aspects essential for mass-market commercialization



Cross-cutting projects and other activities are contributing to a frictionless deployment of hydrogen technologies



Comprehensive portfolio of activities strengthening the whole hydrogen sector and supporting the market uptake

Thank you

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