



**Hydrogen Europe  
Research**

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**Fuel Cells & Hydrogen Research in Europe**

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***Hydrogen as Enabler for a Carbon-neutral Society***

## Our vision and mission

Hydrogen Europe Research aims to contribute to the achievement of carbon neutrality by strengthening the European hydrogen industry and ensuring high-level research in Europe. We actively support Research Institutes and Universities involved in the development of a new industrial ecosystem based on hydrogen.

Our mission is based on **4 pillars**:

### RESEARCH

Low Technology Readiness Level (TRL) research is still needed to develop the next generations of materials, components and products.

### INFRASTRUCTURES

The development of research and technology infrastructures is essential to bringing new technologies into the market.

### SUSTAINABLE DEVELOPMENT

The evaluation of the carbon and environmental footprint related to the production, distribution, and usage of hydrogen is fundamental.

### EDUCATION

An educational framework should be a priority of European and national policies, as it can play a vital role in developing a new European workforce on hydrogen technologies.

## Structure

**GENERAL ASSEMBLY**



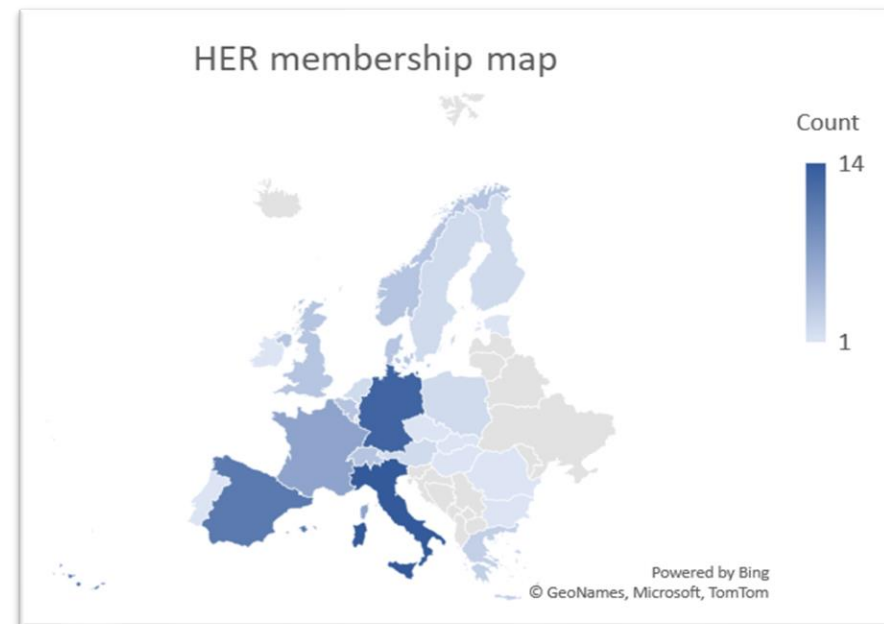
**EXECUTIVE BOARD**



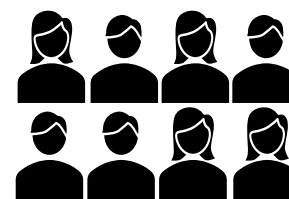
**SECRETARIAT**

# Hydrogen Europe Research at a glance

We represent the European Hydrogen Scientific Community with **103 members** in **25 countries**.



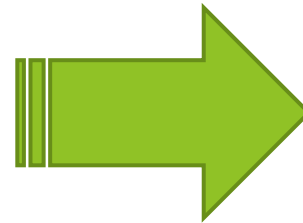
**50 Higher education establishments**  
**53 Research organisations**



**500+ scientists**  
involved in defining priorities  
for the FCH sector

## Clean Hydrogen Partnership

In collaboration with the public and private members of the Clean Hydrogen Partnership, Hydrogen Europe Research participates to the identification of annual and multi-annual research & innovation priorities and the elaboration of research topics included in yearly Annual Work Plans.



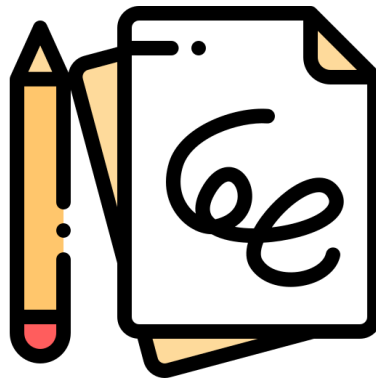
- **EC representation** – DG R&I, DG ENER and DG MOVE
- Total EU financial contribution to the Clean Hydrogen JU: 1 Billion €
- Private partners shall **at least match this contribution** through In-Kind contributions
- Administrative costs are shared between the public and private partners

## Clean Hydrogen Partnership – Involvement of HER

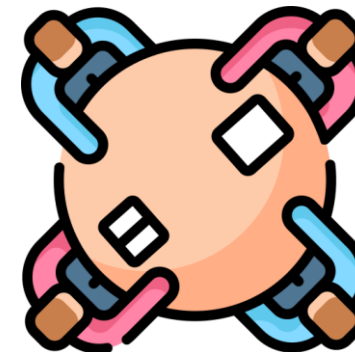
In collaboration with Hydrogen Europe and the European Commission, Hydrogen Europe Research members are active in:



**Identification of Annual (Annual Work Plans) and Multi-Annual (SRIA) priorities at Roadmap-level**



**Drafting of Research and Innovation topics included in the Annual Work Plans**



**Participation in Technical Workshops organised by the Commission & JRC**

# Set of 20 Roadmaps to address our objectives

## Technical Committee 5 – Cross-Cutting Research Activities

**S10 Cross-Cutting**  
RM18.1 - LCA, Sustainability & Recycling, RM18.2 RCS & Safety, RM18.3: Education & Awareness

Comms  
Knowledge  
Safety  
Int'l coop.

**PILLAR H2 PRODUCTION**

**SO1 Produce Clean H2**  
RM01 - Electrolysis  
RM02 - Other modes of production

**SO2 Integrate renewables**  
RM03 - Role of electrolysis in the energy system

**SO7 Decarbonise Industry**  
RM17 - H2 in industry

**Technical Committee 1 – Hydrogen Production**

**PILLAR H2 DISTRIBUTION**

**SO3 Deliver Clean H2 at low cost**  
RM04 - Large scale storage  
RM05 - Pipeline transport (grid)  
RM06 - Liquid carriers  
RM07 - Non-pipeline transport  
RM08 - Key technos for distribution

**SO4 Develop H2 infrastructure**  
RM09 - HRS for multiple applications

**Technical Committee 2 – Hydrogen storage, transport & distribution**

**PILLAR H2 END USES**  
**Technical Committee 3 - Transport**

**SO5 Competitive H2 vehicles**  
RM10 - Building blocks  
RM11 - Road Heavy-Duty  
RM12 - Maritime (inc. ports)  
RM13 - Aviation (inc. airports)  
RM14 - Rail

**SO6 H2 for Heat & Power**  
RM15 - Stationery H2 fuel cells  
RM16 - H2 Turbines & burners

**SO7 Decarbonise Industry**  
RM17 - H2 in industry

**Technical Committee 4 – Heat & Power**

**S08 Hydrogen Valleys**  
Integrated H2 ecosystems combining multiple applications (ports, airports, industrial hubs, cities, etc.)

## Technical Committee 7 – Hydrogen Valleys

SO9 Supply Chain  
Manufacturing & scale-up

Technical Committee 6  
Supply Chain

# Other activities: Mapping of HER members' research activities and infrastructures

As enshrined in the Statutes of the Association, HER members have the duty to specify which research activities they undertake in their organisation

- The consolidated data will be available to members on the intranet
- Useful to identify stakeholders active on the same technologies in view of collaboration
- In parallel, HER will soon initiate a **mapping of research and technology infrastructures** present in Europe, starting with its members

**Pillar, Roadmap**

All

**Technology**

All

**Sub-system**

AEL stack

AEMEL stack

AFC stack

Air compressor

Air management

**Sub-component**

Absorber

Adsorbents (PSA, etc.)

Adsorption with liquids

Air compressor

Air filters

**Specialised materials**

Additives


Burner

Burner/electrodes

**Headquarters and Organisation**

Organisation

- Aalborg University
- Aalto University
- AIT - Austrian Institute of Technology
- BAM - Bundesanstalt für Materialforschung u...
- Bulgarian Academy of Science
- CEA - Commissariat à l'Energie Atomique et a...
- Cidaut Foundation
- CIEMAT - Centro de Investigaciones Energétic...
- CNH2 - Centro Nacional del Hidrógeno
- CNR - Consiglio Nazionale delle Ricerche
- CPERI CERTH - Chemical Process Engineering ...
- DBI - The Danish Institute of Fire and Security ...
- DLR - German Aerospace Center
- DTU - Danish Technical University
- DVGW - Deutsche Verein des Gas- und Wasse...
- EFZN - Energie-Forschungszentrum Niedersac...
- Eifer - Europäisches Institut für Energieforsch...
- EMPA - Swiss Federal Laboratories for Materia...
- ENEA - Agenzia Nazionale per le Nuove tecn...
- ERIG - European Research Institute for Gas an...
- FBK - Fondazione Bruno Kessler
- FORTH ICEHT - Foundation for Research and T...
- Fraunhofer
- Fundación CIRCE
- GERG
- Heraon
- HyCentra - Hydrogen Center Austria



**Activity (Development, Testing or both)**

- Active (cross-cutting)
- Development
- Development & Testing
- Testing

**Pillar**

All

**Roadmap**

All

**Technology**

Aboveground compressed storage

Alkaline Electrolysers (AEL)

Alkaline Fuel Cells (AFC)

Ammonia

**System**

AEL system

AEMEL system

AFC system

Alothermal gasification

**Sub-system**

AEL stack

AEMEL stack

AFC stack

**Sub-component**

Absorber

Adsorbents (PSA, etc.)

Adsorption with liquids

**Specialised materials**

Additives

Burner

Burner/electrodes

Organisation	Type of organisation	Activity (Development, Testing or both)	Information
Aalborg University	University	Active (cross-cutting)	<a href="https://www.en.aau.dk/">https://www.en.aau.dk/</a>
Aalborg University	University	Development	<a href="https://www.en.aau.dk/">https://www.en.aau.dk/</a>
Aalborg University	University	Development & Testing	<a href="https://www.en.aau.dk/">https://www.en.aau.dk/</a>
Aalto University	University	Active (cross-cutting)	<a href="https://www.aalto.fi/en">https://www.aalto.fi/en</a>
Aalto University	University	Development	<a href="https://www.aalto.fi/en">https://www.aalto.fi/en</a>
Aalto University	University	Development & Testing	<a href="https://www.aalto.fi/en">https://www.aalto.fi/en</a>
Aalto University	University	Testing	<a href="https://www.aalto.fi/en">https://www.aalto.fi/en</a>
AIT - Austrian Institute of Technology	Research and Technology Organisation	Active (cross-cutting)	<a href="https://www.ait.ac.at/en/">https://www.ait.ac.at/en/</a>
AIT - Austrian Institute of Technology	Research and Technology Organisation	Development	<a href="https://www.ait.ac.at/en/">https://www.ait.ac.at/en/</a>



## Other activities: Policy & Skills

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In 2021, two new Working Groups were set up within HER

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### Policy Working Group:

Discussion and identification of policy topics of interest for HER's research community stemming from existing or upcoming European policies.

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Defending the view of RTOs and universities by **drafting position papers and taking action to voice our opinion**. A technical paper entitled "*For a long perspective impact of European Research and Industrial Sectors*" was released in February 2022.



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### Skills Working Group:

Following the launch of the European Pact for Skills by the European Commission on 10 November 2020, HER has set up, together with Hydrogen Europe, a **working group on Skills** to reflect on the topic of skills, trainings, and education in the field of hydrogen and fuel cells.

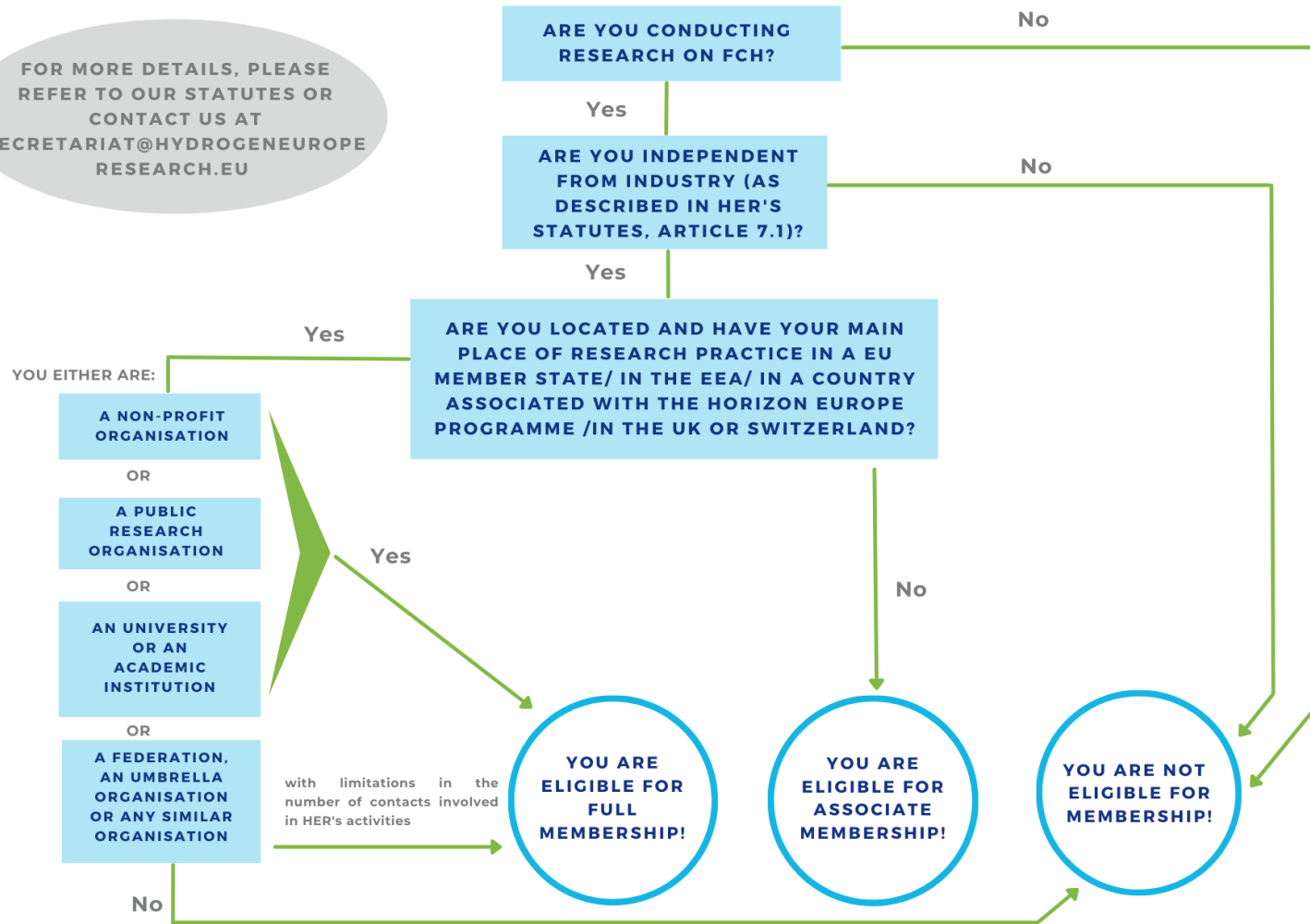
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HER is also a **partner in the FCH Observatory** and manages the data stream on Education and Training.

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# Become a Hydrogen Europe Research member!

FOR MORE DETAILS, PLEASE REFER TO OUR STATUTES OR CONTACT US AT [SECRETARIAT@HYDROGENEUROPE RESEARCH.EU](mailto:SECRETARIAT@HYDROGENEUROPE RESEARCH.EU)



**Full member: 3,500€/year**

**Associate member: 1,000€/year**



Hydrogen Europe  
Research



Thank you  
for your  
support!

## Secretariat – contact details



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**Project Manager** – Julia Cora

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- ▶ +32 472 051 015



**Communications and Membership Manager** – Simona Vitali

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- ▶ +32 466 432 902