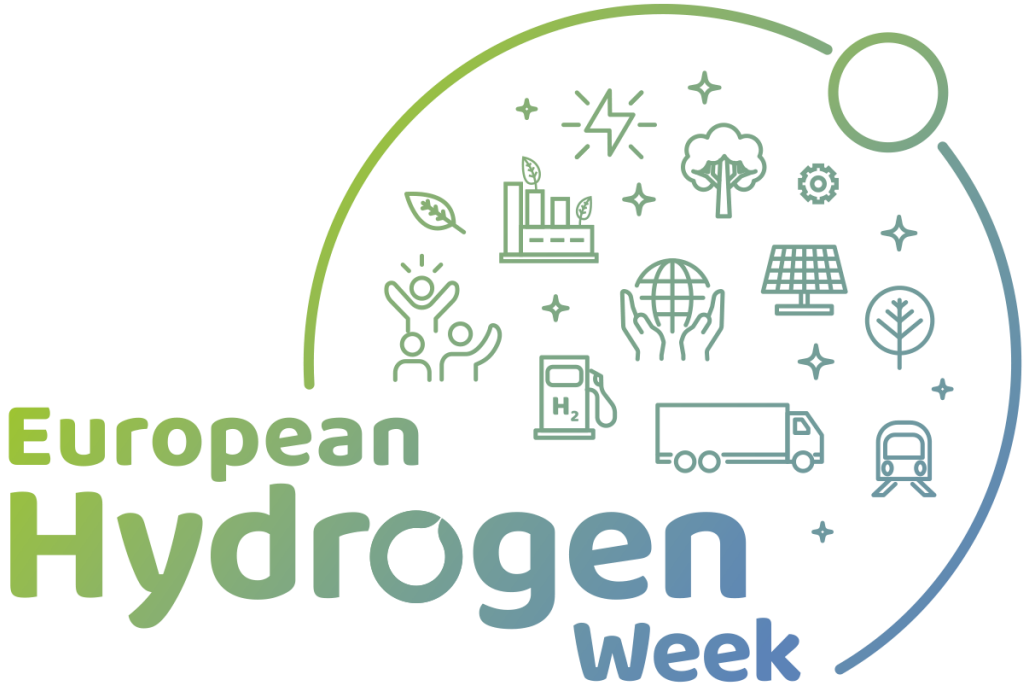
Support for Market Uptake



Alberto J. Garcia Hombrados
Project Officer

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Support for Market uptake
PRD parallel sessions

3rd Dec. 09:30 - 10:50

PNR for Standards (& safety)

3rd Dec. 11:00 - 12:20

Education and Training

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Support for Market uptake

Overview

Cross-cutting Projects

- Regulations, codes and standards
- Education and training
- Safety
- Social awareness and public acceptance
- Sustainability
- Databases

Other activities

- Regulations, Codes and Standards Strategy Coordination Group (RCS SCG)
- Collaboration with the Joint Research Center (JRC)
- European Hydrogen Safety Panel (EHSP)
- Initiatives: FCH Regions, FCH Observatory…
- Funding and financing support services
- Studies

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Regulations, Codes and Standards

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

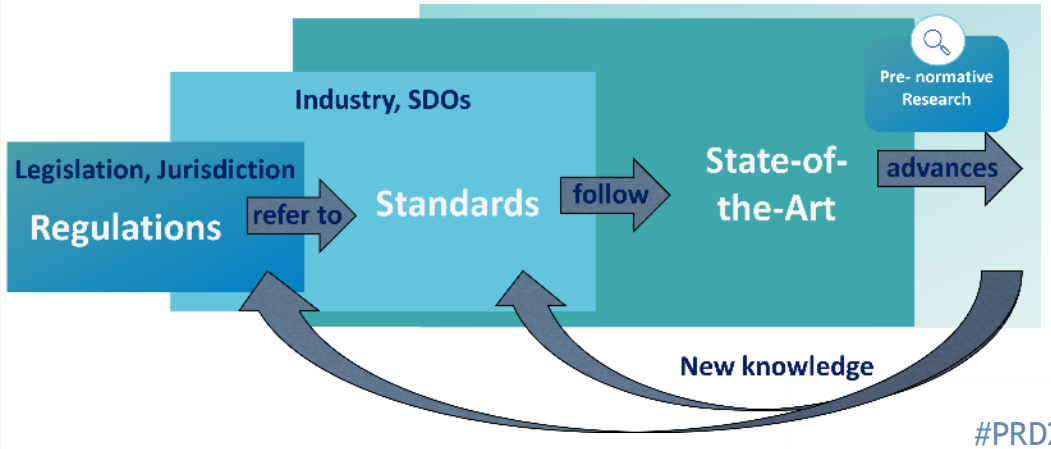
HyLAW

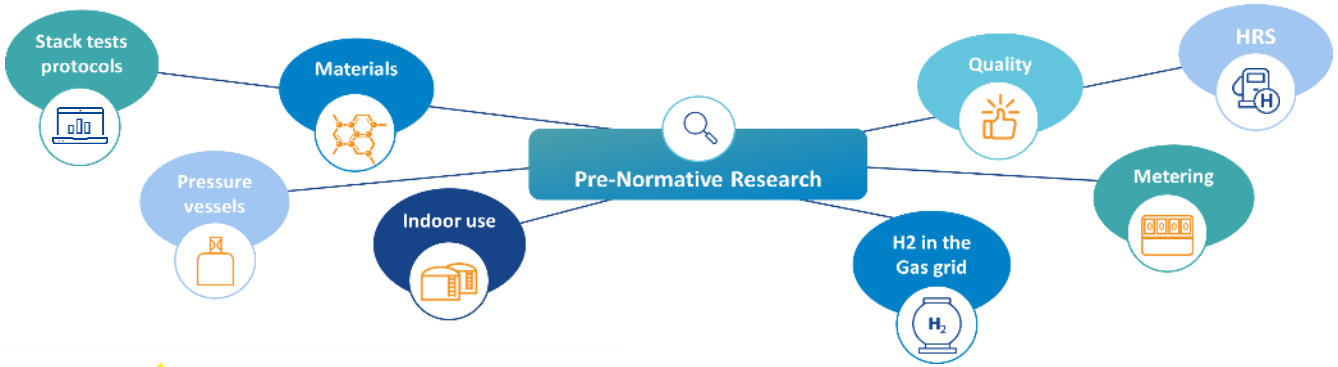
Guarantees of origin framework

Providing truthful information about the origin of hydrogen

CertifHy

Pre-normative research: An essential step advancing Regulations, Codes and Standards





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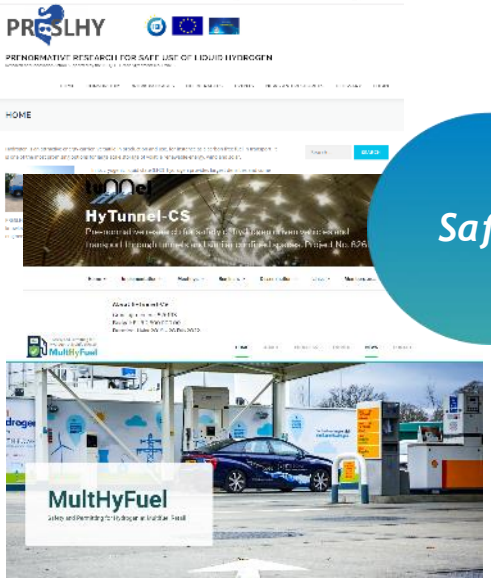
Regulations, Codes and Standards

Projects ongoing in 2021

FCH JU support

- **Safety**
- **H_2 quality**
- **FC Stack testing**
- **H2 NG mixtures**
- **Waterborne applications**
- **H_2 refuelling protocols**



www.fch.europa.eu/page/fch-ju-projects

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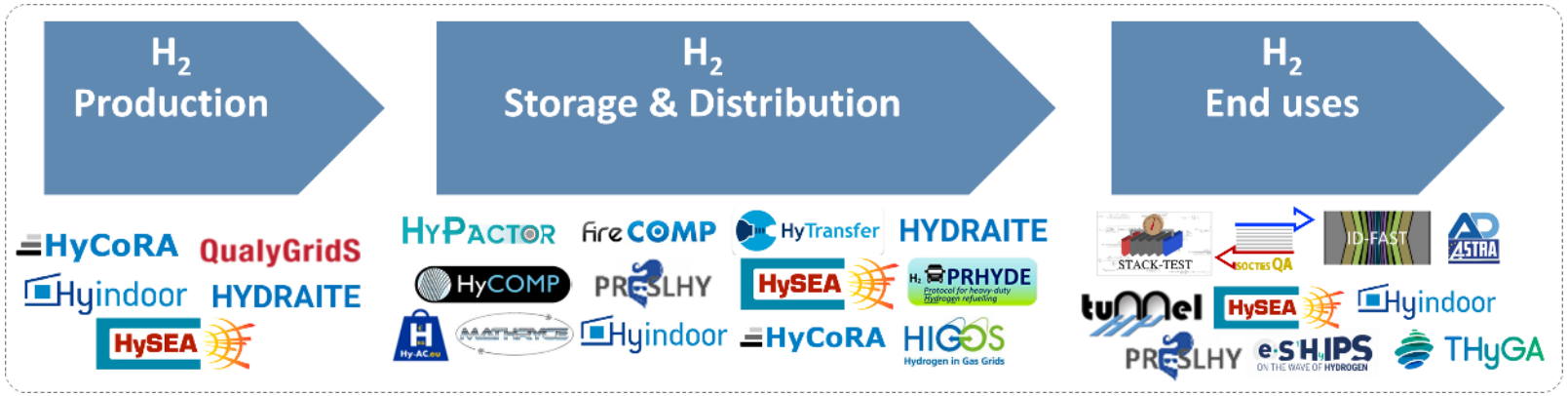
European Hydrogen Week

Regulations, Codes and Standards

Providing science-based information to create and further develop standards

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



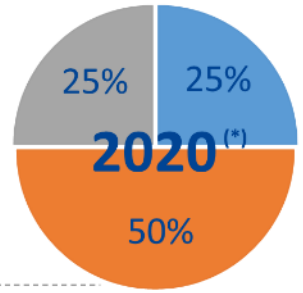
International Electrotechnical Commission

IEC

CEN CENELEC

European Committee for Standardization

European Committee for Electrotechnical Standardization



ISO

International Standardization Organization

** 8 projects on-going over 2020*

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Cooperation with the JRC

Supporting activities throughout the entire FCH JU Programme

Overarching support activities

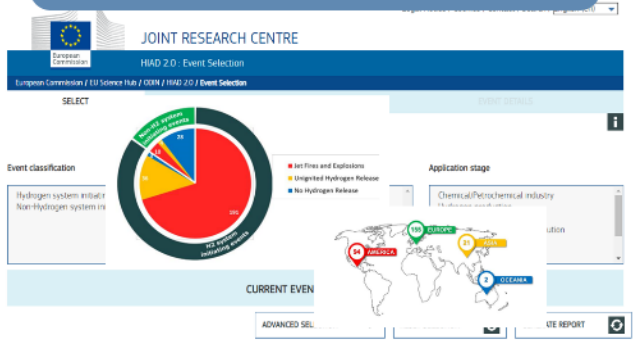
- Support to formulation and implementation of RCS strategy
- Contribution to safety dimension and safety awareness
- Contribution to programme monitoring and assessment
- Support to FCH Smart Specialization
- Support to specific activities of the FCH2JU

Testing protocols harmonisation for FCH technologies

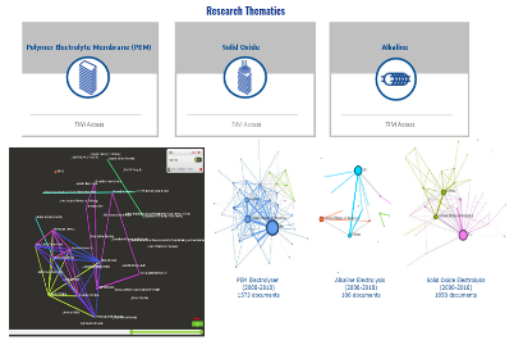
Automotive fuel cells

LT Electrolysers - HT Electrolysers

Hydrogen Incidents and Accidents Database (HIAD 2.0)



Tools for Innovation Monitoring (TIM)
Europe Media Monitoring (EMM)



www.fch.europa.eu/page/collaboration-jrc
https://odin.jrc.ec.europa.eu/giada/Main.jsp
www.fch.europa.eu/page/tools-innovation-monitoring-tim

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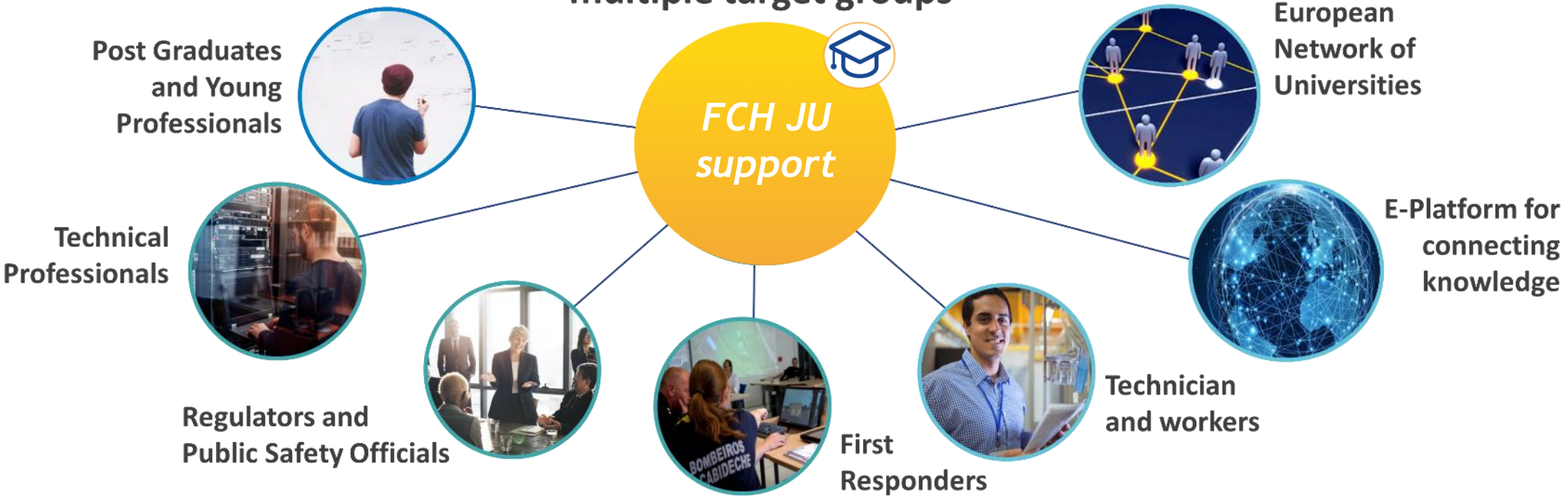
Education and training

Promoting excellence in education and training and preparing the European workforce

Educational and training programs tailored to multiple target groups



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

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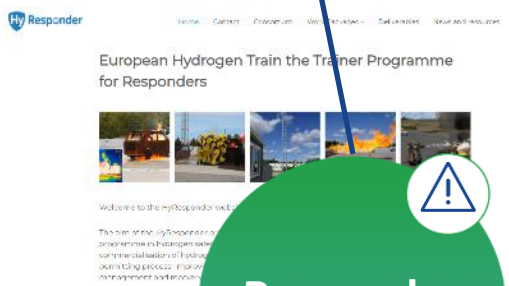
Education and training

Projects ongoing in 2021

Primary & Secondary

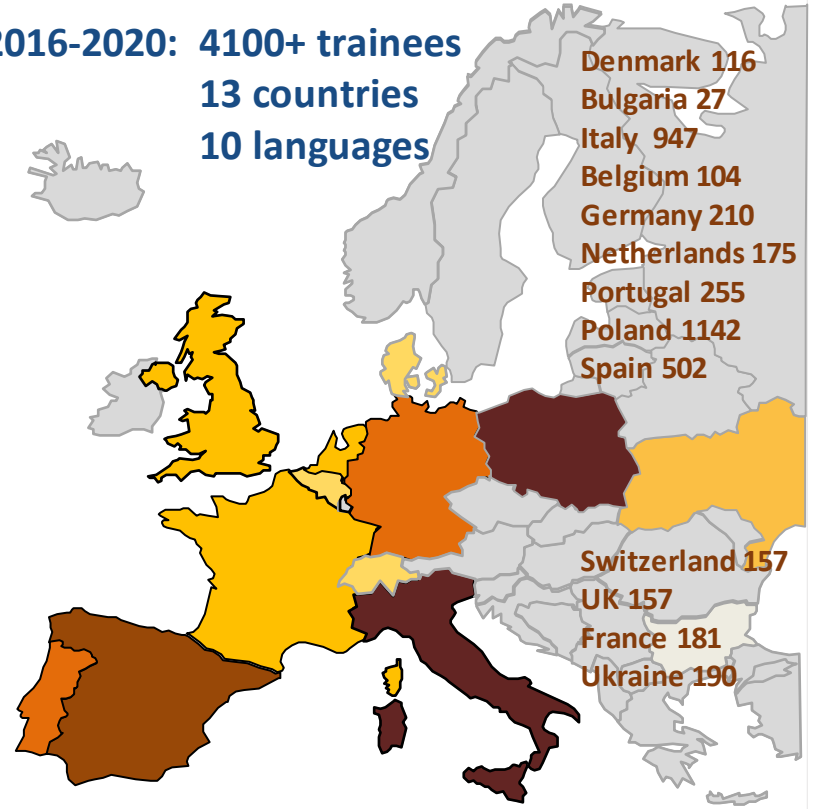
FCH JU support

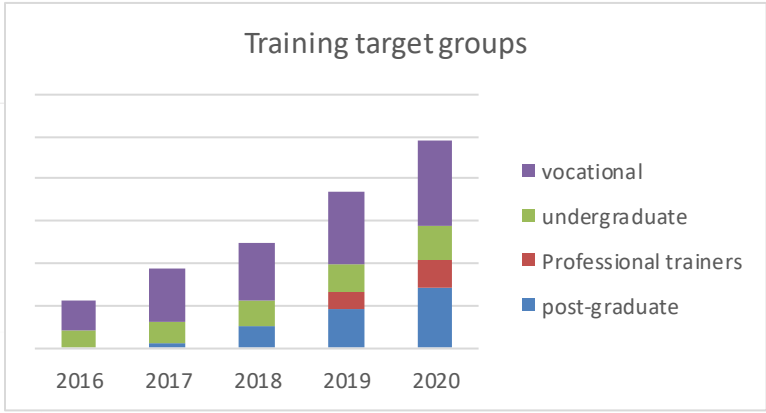
University



Responders

2016-2020: 4100+ trainees
13 countries
10 languages





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Safety

Addressing key safety-related aspects

Cross-cutting Projects

Hydrogen sensors

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

H2Sense

CFD for safety analysis

Development of best practices, HYMEP evaluation protocol

SUPPORT SUSANA

Safety expert group

Development of H_2 safety expert group

H_2TRUST

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

www.fch.europa.eu/page/fch-ju-projects
www.fch.europa.eu/page/collaboration-jrc
www.fch.europa.eu/page/european-hydrogen-safety-panel

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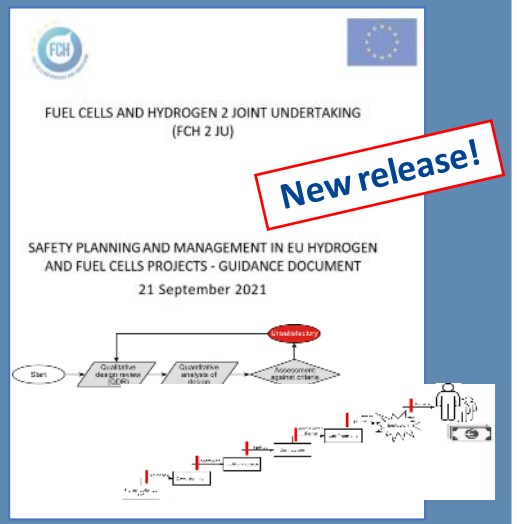
European Hydrogen Safety Panel (EHSP)

Activities overview

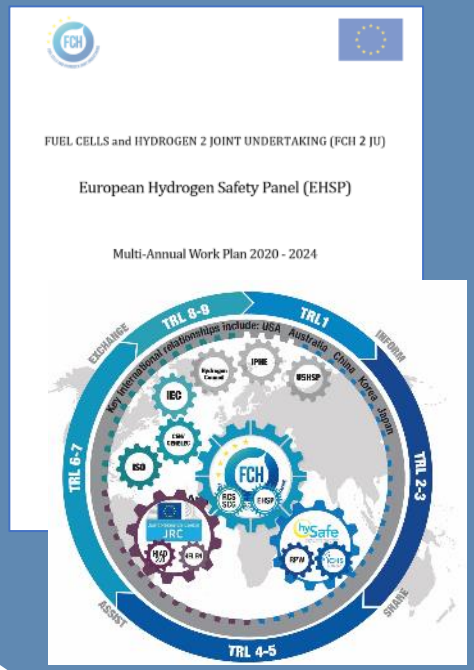
Project level



New release!

+ Workshop, safety plans reviews…

Programme level



Data Collection

New release!

Public Outreach

New research thematic on TIM!

www.fch.europa.eu/page/european-hydrogen-safety-panel
www.fch.europa.eu/page/tools-innovation-monitoring-tim

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Sustainability

Ensuring FCH technologies are environmentally friendly

Cross-cutting Projects

Life Cycle Assessment

Developing guidance for LCA application to FCH technologies

FC-Hy Guide

Recycling & dismantling

Developing tech. and strategies for recycling and dismantling

HyTechCycling

Guarantees of origin framework

Providing truthful information about the origin of hydrogen

CertifHy

Other activities

Call for proposal 2020

- Life Cycle Sustainability Assessment (LCSA) — SH2E
- Recycling technologies dev, and validation — BEST 4Hy
- Eco-design guidelines for FCH products — eGHOST

www.fch.europa.eu/page/fch-ju-projects
www.fch.europa.eu/publications/life-cycle-assessment-hydrogen-and-fuel-cell-technologies
https://publications.jrc.ec.europa.eu/repository/bitstream/JRC118195/jrc118195_lca_workshop_summary_final.pdf

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Databases

Developing advanced databases to find information easily and seamlessly

Cross-cutting Projects

Legal, administrative processes

Compilation of LAPs around FCH technologies across Europe

HyLAW

Education and training

Providing digital tools and services for education and training

NET-Tools

Safety

Validation and verification of CFD models

SUPPORT SUSANA

Other activities

KNOWLEDGE MANAGEMENT

TRUST

2018 data collection:

In addition to periodic reports, that can be more or less descriptive, FCH JU projects are required to report on progress and status according to template questionnaires related to the technologies addressed.

Full information on this process can be found **here.**

Continuing the 2017 exercise, for 2018 (data obtained in 2017), the data will be collected online using the TRUST (Technology Reporting Using Structured Templates) secure data collection tool and are intended for the exclusive use of the FCH JU.

Information labeled confidential in TRUST will not be disclosed by the FCH JU unless it has been duly aggregated with other data of comparable nature in a manner that renders the original data and their source unrecognisable. From 2018, parameters labeled with the prefix **'KPI'** (Key Performance Indicator) will be considered by default **public** unless justification is provided by the data-provider for the necessity to keep the data confidential.

FCHO FUEL CELLS AND HYDROGEN OBSERVATORY

- Technology & Market
- Patents
- Publications
- Financial Support
- Policy, Incentives, RCS
- Education & Training

www.fch.europa.eu/page/fch-ju-projects
www.fch.europa.eu/projects/knowledge-management
www.fchobservatory.eu/

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Conclusions

- Pre-normative research, safety, education, sustainability, etc. are cross-cutting aspects essential for mass-market commercialization
- Cross-cutting projects and other supporting activities are contributing to a frictionless deployment of FCH technologies
- Comprehensive portfolio of activities strengthening the whole FCH sector and supporting the market uptake