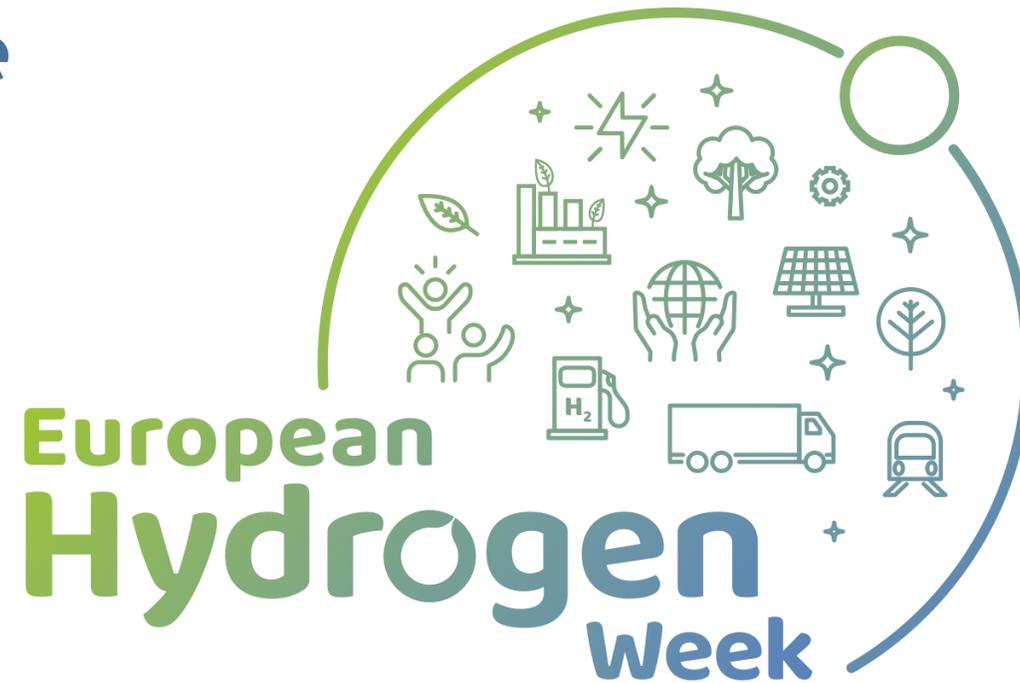


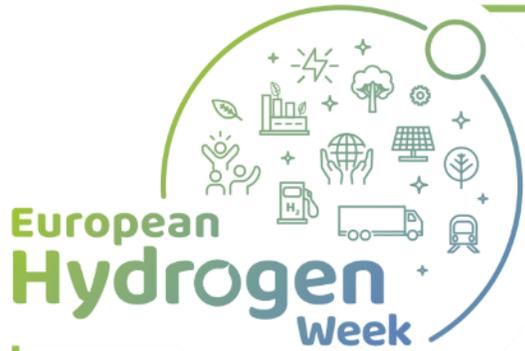
Support for Market Uptake



Alberto Garcia Hombrados
Project Officer

#PRD2020
#CleanHydrogen





Support for Market uptake PRD parallel sessions

24th Nov. 11:00 - 12:20



Education
and Training

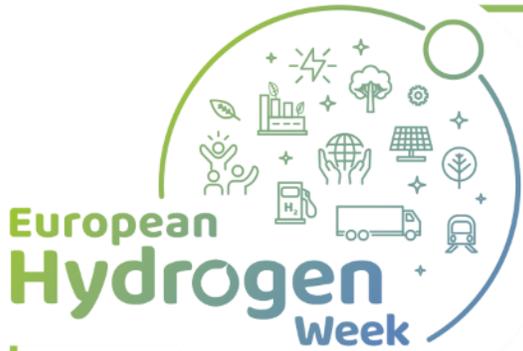
24th Nov. 14:00 - 15:20



Hydrogen in
the future

#PRD2020
#CleanHydrogen





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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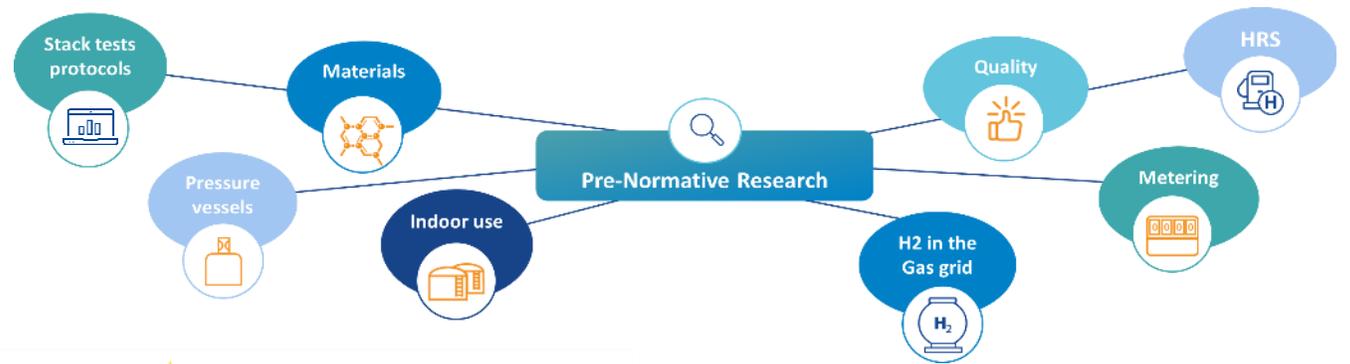
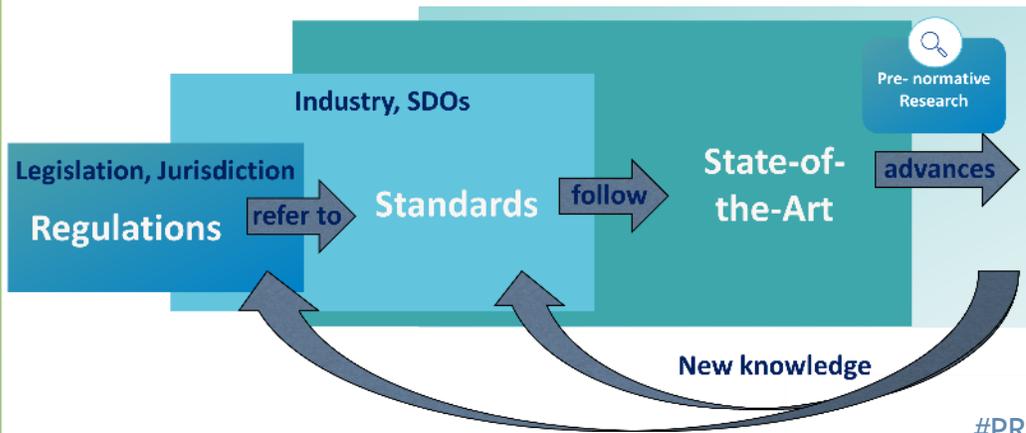


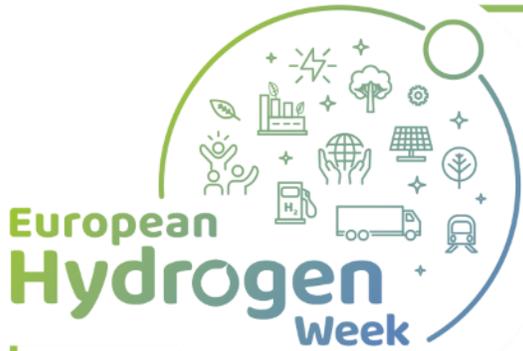
Regulations, Codes and Standards

Supporting and facilitating adequate frameworks for market uptake



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

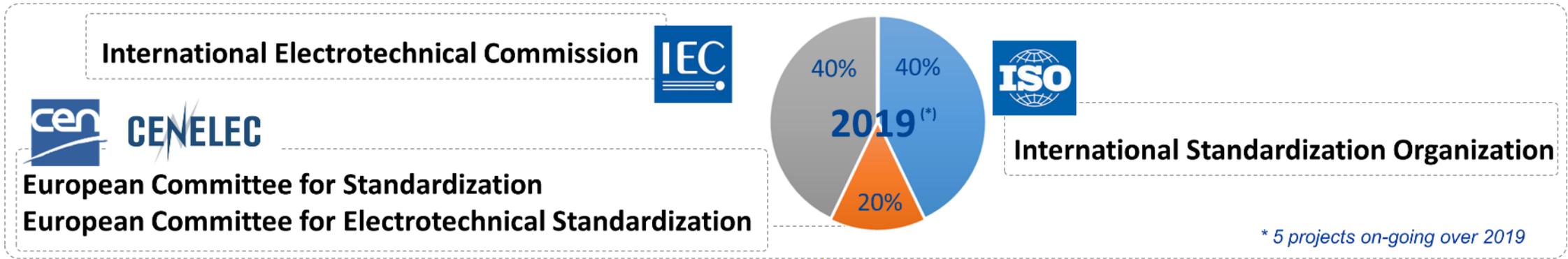
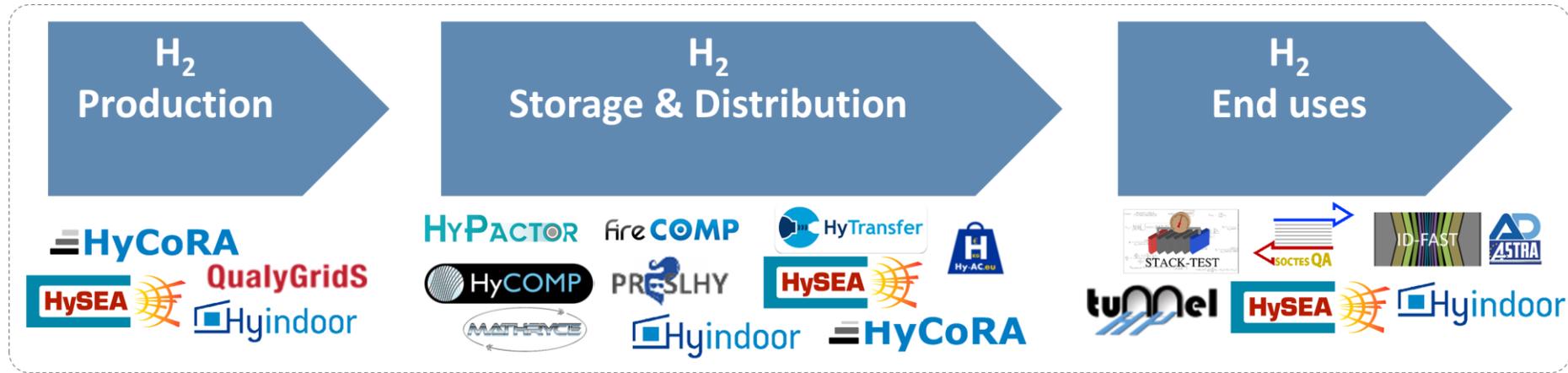




Regulations, Codes and Standards

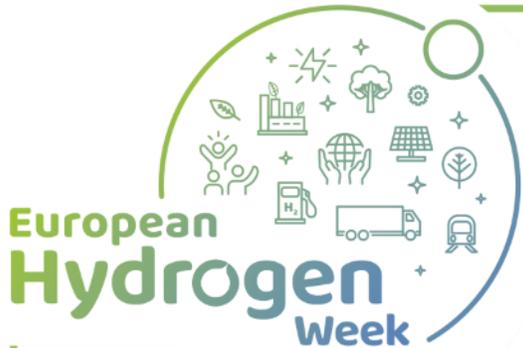
Providing science-based information to create and further develop standards

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



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Regulations, Codes and Standards

Projects ongoing in 2020



PRENORMATIVE RESEARCH FOR SAFE USE OF LIQUID HYDROGEN

HOME CONSORTIUM WORK PACKAGES DELIVERABLES EVENTS NEWS AND RESOURCES GLOSSARY LOGIN

HyTunnel-CS
Pre-normative research for safety of hydrogen in tunnels and transport through tunnels and similar confined spaces. Project No. 826193

Flowchart showing project structure: WP1 (Safety), WP2 (Regulation), WP3 (Thermal), WP4 (Explosion), WP5 (Hydrogen), WP6 (Synthesis), WP7 (Management), WP8 (Ethics).

HYDRAITE

Delivery Risk Assessment and Impurity Tolerance Evaluation

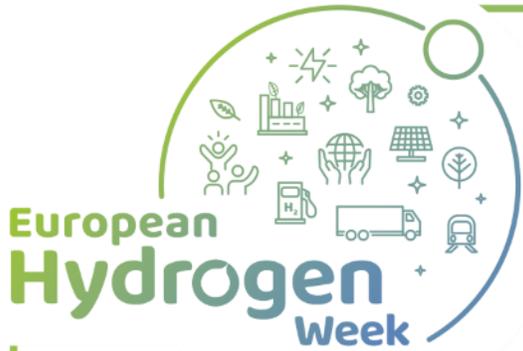
ID-FAST

General Information

HIGOS Hydrogen in Gas Grids

THyGA Home





RCS Strategy Coordination Group

Industry-led working group coordinating RCS needs

Coordinating RCS needs of strategic importance for Europe



Working activities

Identification of strategic themes for RCS development

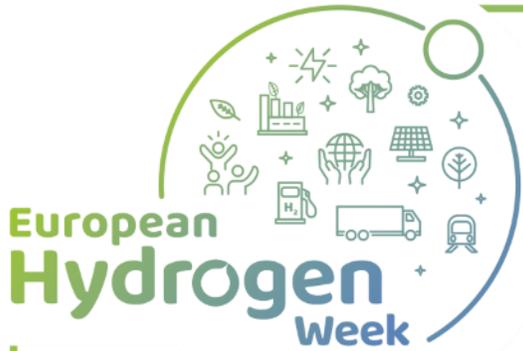
Tailoring of FCH 2 JU AWP to best address RCS needs

Proposals of standardization towards the AUWP

Transfer of PNR projects results in RCS development

Enhance European participation and influence in RCS fora





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

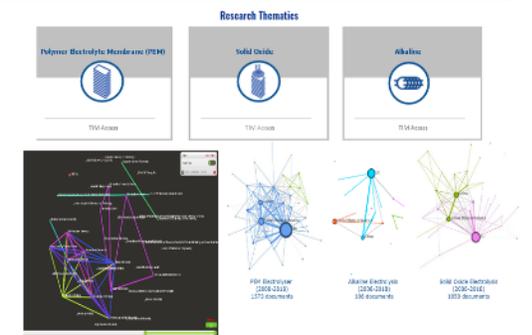
LT Electrolysers - HT Electrolysers



Hydrogen Incidents and Accidents Database (HIAD 2.0)



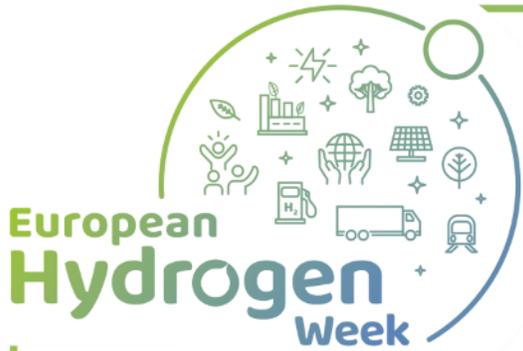
Tools for Innovation Monitoring (TIM) Europe Media Monitoring (EMM)



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

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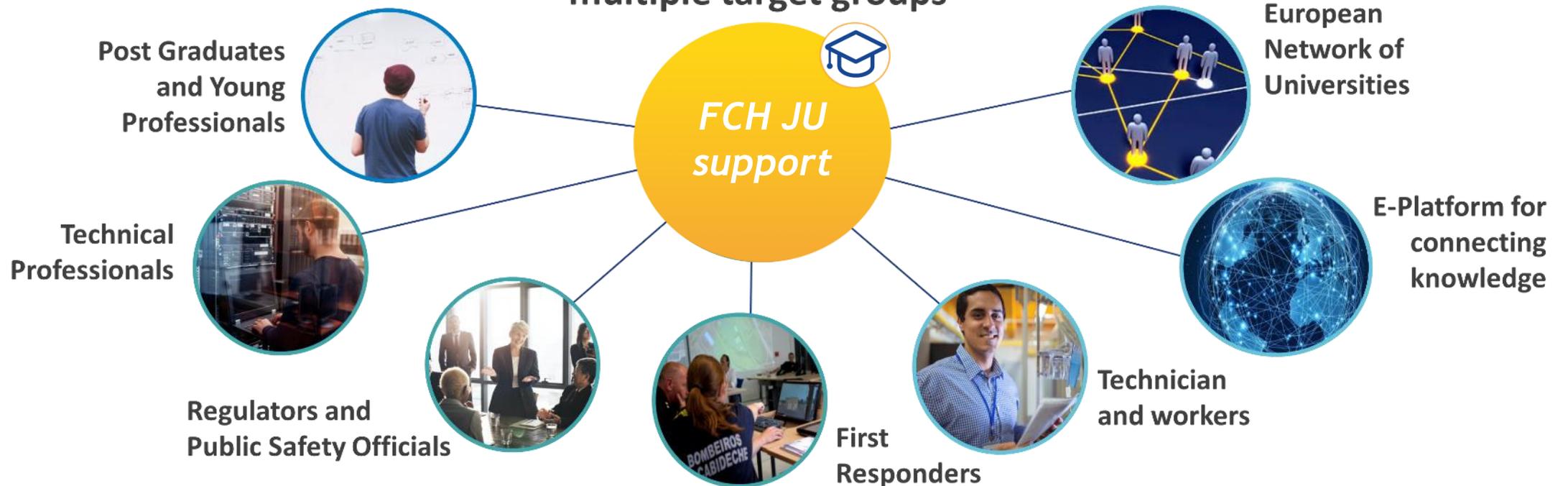




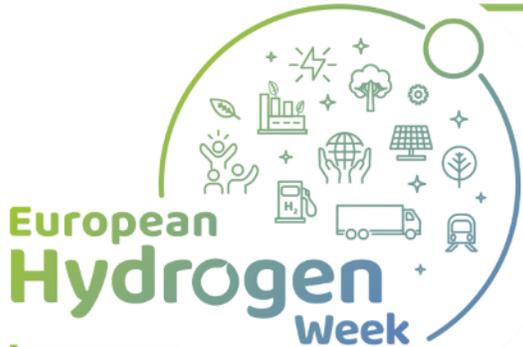
Education and training

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...



Education and training

Projects ongoing in 2020



Primary & Secondary



University



Distance learning

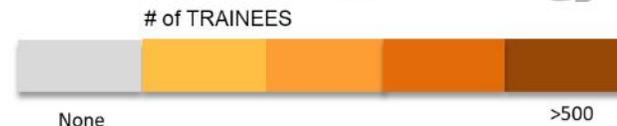
FCH JU support

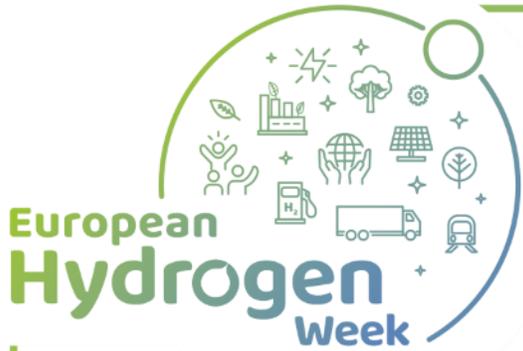
Responders

European Hydrogen Train the Trainer Programme for Responders

2016-2019: 3100+ trainees
11 countries
7 languages

Denmark	6
Bulgaria	27
Italy	694
Belgium	104
Germany	101
Netherlands	125
Portugal	1190
Spain	502
UK	152
France	151
Ukraine	90





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



European Hydrogen Safety Panel (EHSP): Assuring that hydrogen safety is adequately managed Promoting and disseminating high-level H₂ safety culture



Inaki Azkarate



Stuart Hawksworth



Thomas Jordan



Georg Wilfried Mair



Marta Maroño



Vladimir Molkov



Ernst-Arndt Reinecke



Pratap Sathiah



Ulrich Schmidtchen



Jennifer Wen



Etienne Studer



Trygve Skjold



Tom Van Esbroeck



Elena Vyazmina

Working activities



Project level



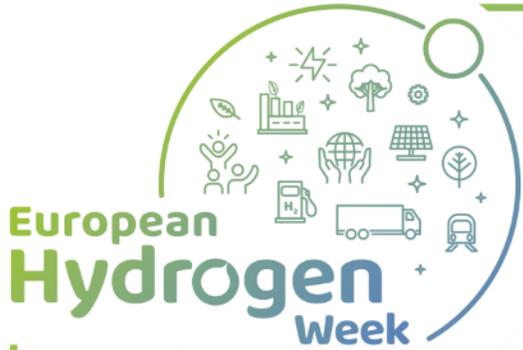
Program level



Data Collection



Public Outreach



European Hydrogen Safety Panel (EHSP)

Activities overview



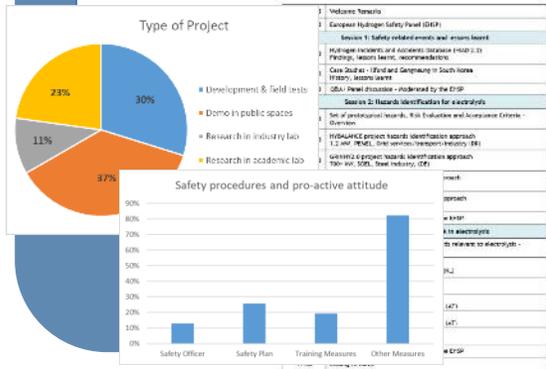
Project level

FUEL CELLS and HYDROGEN 2 JOINT UNDERTAKING (FCH 2 JU)

SAFETY PLANNING FOR HYDROGEN AND FUEL CELL PROJECTS

05 July 2019

Workshop on Safety of Electrolysis

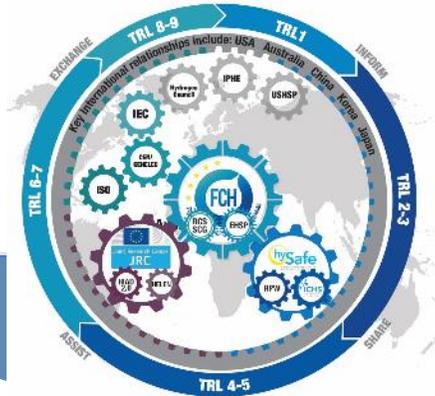


Programme level

FUEL CELLS and HYDROGEN 2 JOINT UNDERTAKING (FCH 2 JU)

European Hydrogen Safety Panel (EHSP)

Multi-Annual Work Plan 2020 - 2024



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Data Collection

FUEL CELLS and HYDROGEN 2 JOINT UNDERTAKING (FCH 2 JU)

Assessment and lessons learnt from HIAD 2.0 – Hydrogen Incidents and Accidents Database

20 September 2019



Public Outreach

FUEL CELLS and HYDROGEN 2 JOINT UNDERTAKING (FCH 2 JU)

European Hydrogen Safety Panel (EHSP)

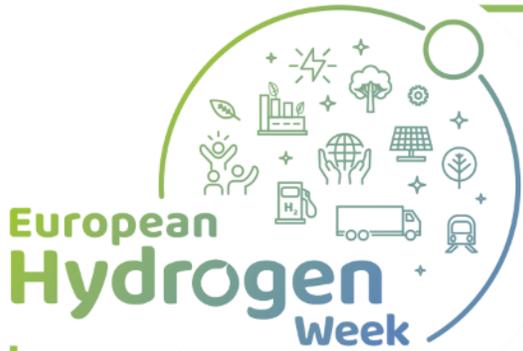
Communication strategy 2020-2024

EUROPEAN HYDROGEN SAFETY PANEL

About the initiative

EUROPEAN HYDROGEN SAFETY PANEL

EUROPEAN HYDROGEN SAFETY PANEL



Social research and public awareness

Providing a deeper knowledge on social and economic factors

Biggest exercise ever on social research around FCH in Europe !



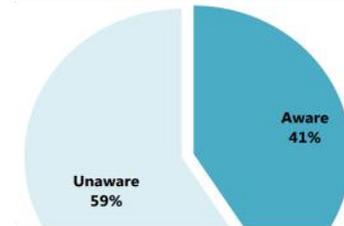
Understand awareness and acceptance across Europe
Identify the main drivers of social awareness and acceptance -> recommendations

Germany
UK
France
Norway
Belgium
Spain
Slovenia



General public survey

7000 participants
7 European countries



FCH stakeholders survey

300+ participants
5 European countries



FCH stakeholders interviews

100+ participants
5 European countries



Study 1. Public awareness and acceptance
Study 2. Stakeholder acceptance

Sustainability

Ensuring FCH technologies are environmentally friendly

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



Other activities



Call for proposals 2020

Life Cycle Sustainability Assessment (LCSA)

Recycling technologies development and validation

Eco-design guidelines for FCH products

Databases

Developing advanced databases to find information easily and seamlessly

Cross-cutting
Projects



Legal, administrative processes

Compilation of LAPs around FCH technologies across Europe



Education and training

Providing digital tools and services for education and training



Safety

Validation and verification of CFD models



Other activities

KNOWLEDGE MANAGEMENT



2020 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. These data will be used only by the FCH JU programme office for the purpose of the Annual Programme Review.



Technology & Market

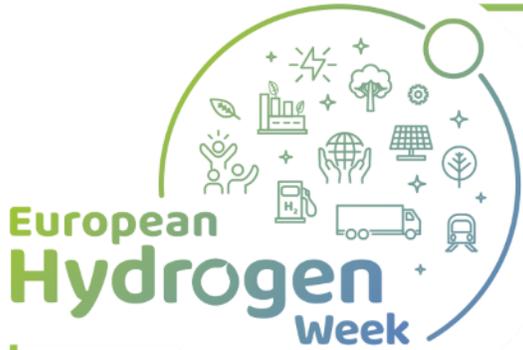
Patents

Publications

Financial Support

Policy, incentives, RCS

Education & Training



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