



**FUEL CELLS AND HYDROGEN**  
JOINT UNDERTAKING

## **Cross-cutting Activity Area**

### **Topics in the 2019 call**

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# Cross-cutting Activity Area Overview

Activity Area facilitating the market uptake

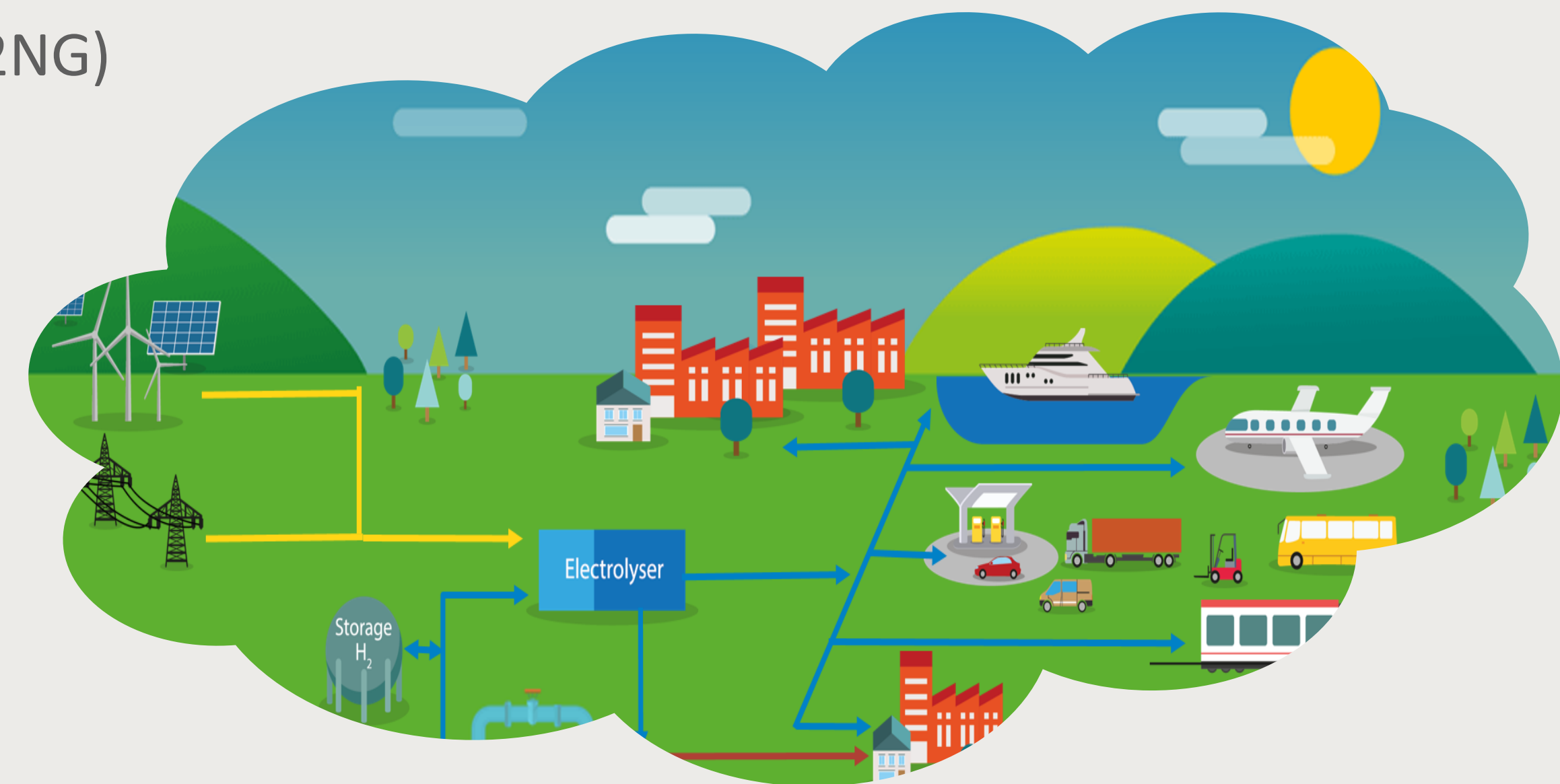


## Main Focus

- To guarantee an **effective response in Europe in case of emergency** related to hydrogen through education and training activities for first and second responders across Europe
- To provide knowledge-based information in **standards for upcoming FCH applications**
  - Medium and heavy-duty vehicles (M-HDV)
  - Hydrogen admixtures in the natural gas (H2NG)

## What is new

- “**Train the trainers**” for first and second responders
- Development of **new refueling protocols** for M-HDV
- **H2NG impact assessment** on NG appliances



# Cross-cutting Activity Area

3 Topics - 5 M€



<i>Topic</i>	<i>Type of Action</i>	<i>Ind. Budget (M€)</i>
<b>FCH-4-1-2019: Training of Responders</b>	<b>CSA</b>	<b>1**</b>
<b>FCH-4-2-2019: Refueling Protocols for Medium and Heavy-Duty Vehicles</b>	<b>RIA</b>	<b>1.5**</b>
<b>FCH-4-3-2019: Hydrogen admixtures in natural gas domestic and commercial end uses</b>	<b>RIA</b>	<b>2.5**</b>

**\*\* Maximum 1 project to be funded**



# Cross-cutting Activity Area Topics Overview

Coordination and Support Action - CSA



## FCH-04-1-2019: Training of Responders



Educate and train **tomorrow's first and second responder trainers** across Europe on hydrogen safety for a safe deployment of hydrogen technologies and its public acceptance



- **Further develop HYRESPONSE training program** to train first and second responders trainers
- **Establish a pan-European network of trainers** ( $\geq 10$  countries) to replicate the training locally in their own country and language ( $\geq 7$  languages), integration in national training programs...
- **Establish an International Forum of First Responders in Hydrogen Safety Training**
- The consortium should include **fire service institution(s), virtual reality for training, academic partner(s)**
- The project should establish **links with FCH 2 JU research and educational projects**



# Cross-cutting Activity Area Topics Overview

Research and Innovation Action – RIA



## FCH-04-2-2019: Refueling Protocols for Medium and Heavy-Duty Vehicles



**Develop refueling protocol(s)** for vehicles with CHSS >250litre, >10kg  
**Feasibility study on future protocols needs and storage technologies** for vehicles with HSS >50kg



- **Fueling protocol(s)** should be developed **to fill any vehicle** with CHSS >250litre @ 350/ 700bar; -40°C ÷ +70°C,...
- **Identify factors** limiting the refueling rate in standards (120g/s) and **propose solutions** for larger flow rates
- **Technology review/ Benchmarking** on gaseous and liquefied H<sub>2</sub> dispensing to **identify most suitable storage technology/ boundary conditions for fueling**, ensuring the acceptability for all stakeholders
- **Hydrogen vehicle refuelling station(s)** should be made available at proposal stage
- **Findings and recommendations should be shared** with relevant sectors and standardization committees



# Cross-cutting Activity Area Topics Overview

Research and Innovation Action – RIA



## FCH-04-3-2019: Hydrogen admixtures in natural gas grid



Impact assessment on H<sub>2</sub>NG blends effects on NG end-user applications



- Assess the **effects of N<sub>2</sub>NG blends on combustion characteristics and performance of NG appliances**
- **Wide coverage:** appliances, %Vol H<sub>2</sub>, NG compositions...(Previous results **should be included!**)
- The project should undertake **desk research supported by experimental program** to:
  - ✓ **Assess the sensitivity** to H<sub>2</sub> concentration of existing end-use stock and new appliances
  - ✓ **Evaluate mitigation solutions** to widen the acceptance of higher H<sub>2</sub> concentrations
  - ✓ **Identify new test methods/gases** for certification of domestic and commercial appliances
- Tests should cover the **impact on safety, efficiency, reliability, lifetime, and environmental performance**
- **Findings and recommendations should be shared** with relevant sectors and standardization committees



# Additional requirements across the entire call



## **FCH 2 JU Knowledge Management - Technology monitoring**

- All projects have the obligation to provide information in the FCH 2 JU secure online data collection platform (TRUST)



## **JRC- Reporting to HELLEN (JRC-PTT-H2SAFETY@ec.europa.eu)**

- Any safety-related event that may occur during the project shall be reported to JRC



## **JRC - Harmonisation and validation activities**

- All testing activities should collaborate and use the protocols developed by JRC



## **CertifHy Green H2 guarantees of origin**

- “CertifHy Green H2” guarantees of origin should be used to ensure hydrogen is renewable or low-carbon



# QUESTIONS & ANSWERS SESSION

Ask your questions:

- Now, on : [www.sli.do](http://www.sli.do) and insert the code **#FCHJU**
- Later, per email: [fch-projects@fch.europa.eu](mailto:fch-projects@fch.europa.eu)