



Cross-cutting Activity Area Topics in the 2017 call

A. Garcia



www.fch.europa.eu

- **Main focus**

- 4 topics addressing Regulations, Codes and Standards by means of Pre-Normative Research
 - 3 topics focus on storage, transport and supply of hydrogen
 - 1 topic focused on performance and durability of fuel cells
- 1 topic addressing Education and Training



- **What is New**

- PNR for filling basic knowledge gaps related to liquid hydrogen, contaminants generated from HRS, and AST for fuel cells
- PNR for harmonising RCS accross Europe with regards to hydrogen distribution with compress gas trailers by road
- Building a European Higher training network



Cross-cutting Activity Area

Topic	Type of Action	Ind. Budget M EUR
FCH-04-1-2017: Limiting the impact of contaminants originating from the hydrogen supply chain	RIA	6.25
FCH-04-2-2017: Harmonisation of hydrogen gas trailers	CSA	
FCH-04-3-2017: European Higher Training Network in Fuel Cells and Hydrogen	CSA	
FCH-04-4-2017: PNR for a safe use of liquid hydrogen	RIA	
FCH-04-5-2017: Definition of Accelerated Stress Testing (AST) protocols deduced from understanding of degradation mechanisms of aged stack components in Fuel Cell systems	RIA	2.5

FCH-04-01-2017: Limiting the impact of contaminants originating from the hydrogen supply chain


-  Understanding the effect on fuel cells of contaminants from the H₂ supply chain, in particular from the HRS, and developing mitigation methods
- 
 - Evaluate the impact of contaminants from the supply chain/ HRS, identify key impurities to be measured, develop in-line monitoring methods, etc.
 - Establish a link to the FCH2-JU project HyCoRA, include mechanisms for collaboration with the JRC - EU protocols harmonization and validation activities
 - Provide recommendations for revision of ISO standards
 - Set up the basics to establish a European Laboratory beyond the project

FCH-04-2-2017: Harmonisation of hydrogen gas trailers

-  Provide a roadmap for standardisation of compressed hydrogen trucks and interfaces
- 
 - Identify and quantify the risks and propose mitigation actions
 - Include a strategy for effective influence on ISO and ADR
 - Develop a position paper and provide evidences of the reduced cost due to increased standardisation


FCH-04-3-2017: European Higher Training Network in Fuel Cells and Hydrogen

 **Build a cluster of universities and other educational institutions**

-  **Minimum of 10 universities and other HEI**
- **Analysis of European needs, harmonize teaching material, offer a platform center of access for students, run exchange programmes with industry, etc.**
- **Lead and coordinate FCH training activities across Europe and representing this community towards EU level stakeholders.**


FCH-04-4-2017: PNR for a safe use of liquid hydrogen

 **Address unanswered questions related to handling and distribution of LH2**

-  **Focused on the risks related to the accidental behavior of LH2, provide suitable engineering correlations and recommendations for safer design & operations**
- **Include an experimental program, perform analytical and numerical studies**
- **Support the further development of the related specific international standards**

FCH-04-5-2017: Definition of Accelerated Stress Testing (AST) protocols deduced from understanding of degradation mechanisms of aged stack components in Fuel Cell systems

 **Develop specific AST protocols for PEMFC and SOFC stack components**

-  • **Develop AST protocols, identify degradation mechanisms, develop advanced characterization techniques, develop models, etc.**
- **Involve at least 6 aged samples of at least 3 different stacks and their user profiles**
- **Validation of the methodology**
- **Include mechanisms for international collaboration and with the JRC - EU protocols harmonization and validation activities**
- **Provide recommendations for international standardisation**



JRC - Reporting to HIAD (JRC-PTT-H2SAFETY@ec.europa.eu).

- Any safety-related event that may occur during execution of the project shall be reported to JRC, which manages the European hydrogen safety reference database HIAD



JRC - Harmonisation and validation activities

- Collaboration mechanisms need to be developed with JRC, in relation to the ongoing EU protocol harmonisation and validation activities



FCH2-JU Knowledge Management - Technology monitoring

- All FCH2-JU`s projects have the obligation to provide every year (April- May) technical information using structured parameter templates



RCS Strategy Coordination Group (RCS SCG)

- Collect and evaluate RCS-relevant information from demonstration projects; monitor PNR activities



Hydrogen Safety Panel (HSP)

- Coordinates a package of measures to avoid any accident by integrating safety learning, expertise and planning into FCH2 JU funded projects

Questions welcomed !