



HYACINTH

FCH JU → SPI-JTI-FCH.2013.5.3

HYdrogen ACceptance IN the Transition pHase

Support & Coordinated Action

HYACINTH Workshop in Spain

May 9th, Madrid, Spain.

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This project has received funding from the Fuel Cells and Hydrogen Joint Undertaking (FCH-JU) under grant agreement N° 621228



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Public awareness:

Are attitudes, behaviours, opinions and activities that comprise the **relations** between the general public or lay society as a whole to scientific knowledge.

Technology ↔ **Society**



⇒ **Public acceptance?**

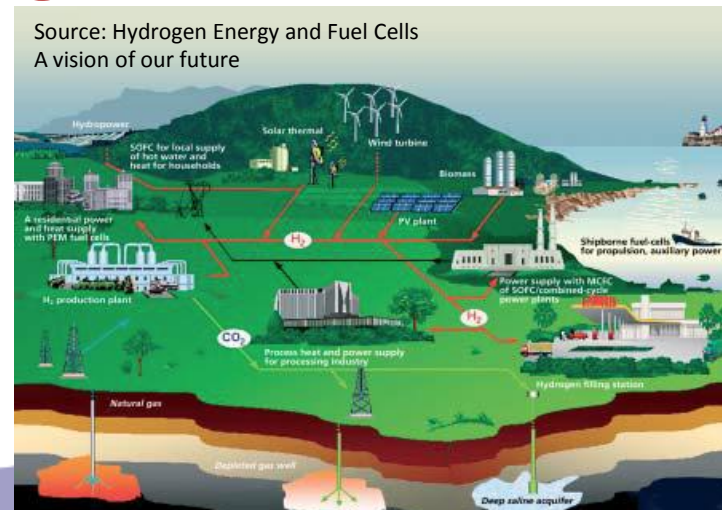
Public acceptance: objective

Main aim => To link technology and society.

How? => Social research, to know the state of public and stakeholder acceptance and the factors that influence them

The aim is to achieve a **better knowledge** that helps to optimize the **management** of a **technology transition**

⇒ **Hydrogen?**



Why measuring acceptance?

It is a key consideration to deploy a new technology

Because:

No broad experience

No feedback

Not many images...

⇒ Hydrogen?
⇒ Fuel cells?
?

So, there is a need for a development of a good understanding of the conditions of societal acceptance of FCH technologies as an essential element to support the establishment of these conditions in Europe.

Public acceptance: remarks

- Awareness and acceptance could vary along time.
- Awareness and acceptance could also influence and be influenced by factors and relevant actors
 - ⇒ So it is important to identify what level of acceptance is needed and when.

So far, research has shown that a **supportive acceptance** will be necessary in a **transition phase** of the technologies and the strategies to successfully establish a market.

Public acceptance of FCH: questions?

What has to be accepted? ⇒ HFC based applications

Who has to accept? ⇒ General public and stakeholders

When is acceptance needed? ⇒ Market approach

Implementation process

(transition phase)



What level of acceptance is needed? ⇒ Support

⇒ **Hyacinth project**

- The **transition phase of FCH** technologies is expected to happen within the next decades.

Implementacion process



- **Challenges**: higher cost and less comfortable infrastructure or lower reliability.
- **Benefits**: energy efficiency and environmental benefits (no local emissions)
- Advanced **hydrogen support** (Germany, UK), medium support (Spain) and low support (Slovenia).

- Among the **alternative technologies: residential fuel cells and hydrogen fuel cell vehicles (FCEV)**
- Both applications have **mass-market potential** and will have a **significant impact on reducing emissions** and **primary energy consumption**
- **Social acceptance** will likely play a role in the successful adoption of hydrogen and fuel cell applications.



HYACINTH: HYdrogen ACceptance IN the Transition PHase

- Funded by the **FCH-JU** in call 2013 (SP1-JTI-FCH.2013.5.3 Social acceptance of FCH technologies throughout Europe). Total cost: 999,383 €; EU contribution: 661,584 €.
- Coordinator: Nacional Hydrogen Centre (CNH2), **11 main partners from 5 different European countries.**
- Started in September 2014 with a duration of **33 months.**
- Aims to gain a **deeper understanding of the social acceptance of hydrogen technologies across Europe.**

HYACINTH: Specific objectives

- Identify and **understand awareness and acceptance** of hydrogen energy and FCH technology and perceive potential benefits in the general public and at selected stakeholders.
- Identify the main drivers of social awareness and acceptance** of FCH technologies in order to provide recommendations.
- Support stakeholders** by providing a social acceptance research **toolbox.**



HYdrogen ACceptance IN the Transition pHase Hyacinth

The main objective of HYACINTH project is to gain a deeper understanding of the social acceptance of hydrogen and fuel cell (HFC) technologies across Europe.

The social acceptance is widely recognized as a key dimension in the sustainable implementation of HFC technologies.

HYACINTH aims to:

- Identify and understand awareness and acceptance of hydrogen energy and HFC technologies,
- Identify the main drivers of social awareness and acceptance of HFC technologies, and
- Support stakeholders with a social acceptance management toolbox.

The HYACINTH project: Runs from September 2014 to February 2017 and the data collection is made in seven European countries with different level of support and implementation of HFC technologies: Belgium, France, Germany, Norway, Slovenia, Spain and United Kingdom.

The project will focus on the specific transition phase of market implementation, between demonstration and market. Combining specific qualitative and quantitative methods and samples of 7,000 surveys of European citizens and about 400 selected stakeholders.

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HYACINTH: background

Past research ⇒ two findings:

1. Public attitudes towards FCH vary across populations and time, influenced by a complex set of factors.
2. Gathering reliable data on the public attitudes towards FCH technologies requires careful considerations.

Analysis on the state of acceptance of FCH technologies have been extensively done. But deep analysis on the public and stakeholders acceptance, identifying the dynamics of the process as well as the factors influencing expectations, are rare.

HYACINTH: background

Past research (recent)

- ⇒ Showed a general positive attitude and lack of relevant opposition (CHIC).
- ⇒ Regional stakeholders play an important role in getting the system run and keeping it running.
- ⇒ The acceptance changes with time
- ⇒ Acceptance can actively be influenced by managing the implementation process.

HYACINTH: Where? and What?

Where?

- 7 European countries: Belgium, France, Germany, Norway, Slovenia, Spain and United Kingdom.
- Different degrees of FCH support, including the “front runners”
- Distributed across Europe

What?

FCH Applications:

- Transport
- Stationary – domestic
- Special markets

HYACINTH: Methodology

- Analysis of the visibility of FCH technologies in society (projects, policies, stakeholders and past acceptance studies and projects).
- Interviews on awareness of FCH technologies in the general public (quantitative interviews – online survey): 7,000
- Interviews on acceptance of hydrogen energy of stakeholders (quantitative interviews – online panel): 280
- Personal interviews (qualitative) on hydrogen energy and FCH technology acceptance at selected stakeholders focused on ongoing and recent demo projects: 175

PARTNERS

- **Centro Nacional del Hidrógeno (CNH2)** – Spain
- **I PLUSF France** – France
- **Fraunhofer-Institut für System- und Innovationsforschung ISI**– Germany
- **Aberdeen City Council**– United Kingdom
- **University of Sunderland**– United Kingdom
- **Centre for Energy, Environment and Technology (CIEMAT)** – Spain
- **Sustainability Research Institute (SRI), University of Leeds** - United Kingdom
- **CIDAUT Foundation**– Spain
- **Razvojni Center za Vodikove Tehnologije (RCVT)** – Slovenia
- **NORSTAT Services GmbH (NORSTAT)** – Germany
- **I PLUSF España** – Spain



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WORK PACKAGES

– **WP1 “Project management”** includes meetings, reporting, deliverables, day to day work. The webpage design and development is here included. CNH2.

– **WP2 “Context analysis”** is aimed to gather information that could be useful for the rest of the WPs. CIDAUT.

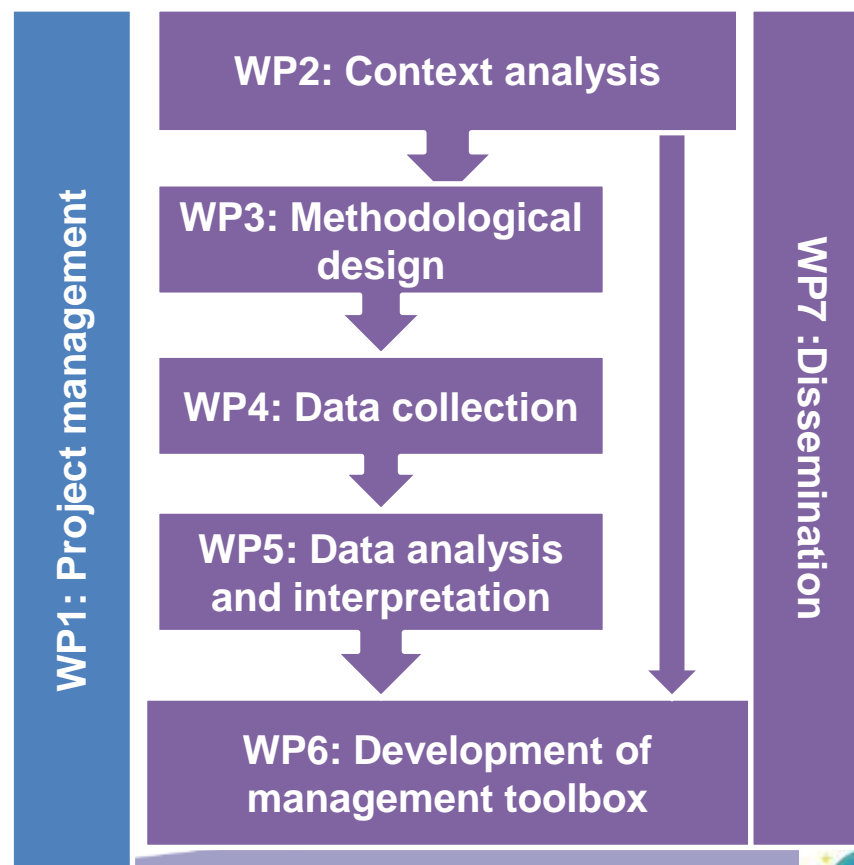
– **WP3 “Methodological design”** of the studies, **one for the general public** and two on–**stakeholders**. This WP includes the design of the **questionnaires** and **protocols** to be implemented in the Data Collection (WP4). CIEMAT.

– **WP4 “Data collection”**, with three parts: personal **interviews with stakeholders**, **online questionnaires for selected stakeholders** and a **general public survey**. NORSTAT.

– **WP5 “Data analysis and interpretation”**, will **analyse the information gathered** from WP4 alongside with information from WP2 to obtain **two studies**: one for the **general public awareness and acceptance** of hydrogen and fuel cell technologies and the second one for the **stakeholders awareness and acceptance**. The information obtained **will feed the information** treated in the **toolbox** (WP6). CIEMAT.

– **WP6 “Development of management toolbox”** is aimed to present the final results of the project: **a social awareness report and a toolbox**. The toolbox should **help stakeholders to better communicate or target their products or services**. UoS.

– **WP7 “Dissemination”**: to engage stakeholders in the project and in the use and spreading of the results of the project (the two studies and the toolbox). CNH2.



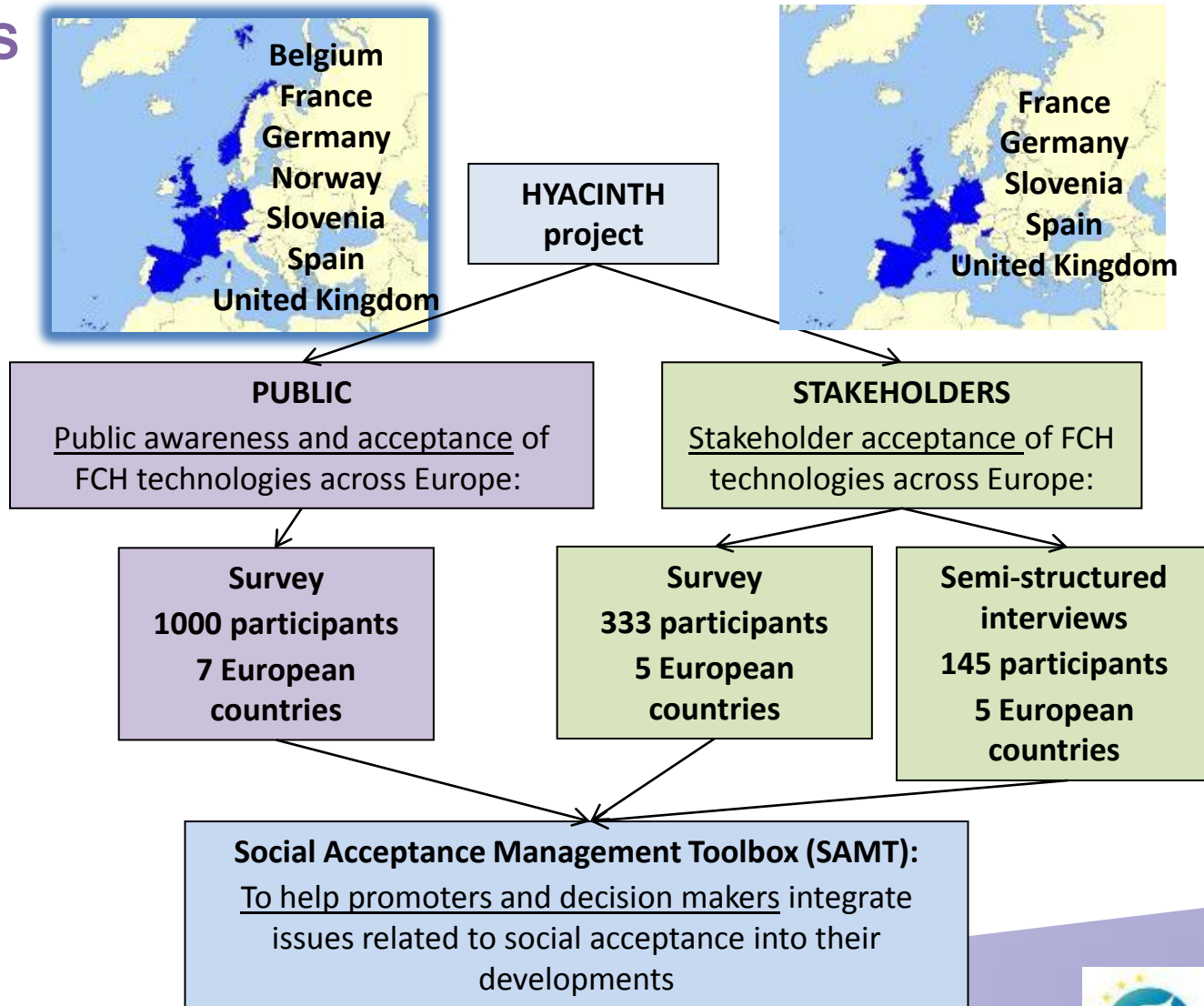
DESIGN METHODS

Studies:

1. Public awareness and acceptance of FCH technologies across Europe.
2. Stakeholder acceptance of FCH technologies across Europe

Toolbox:





To help promoters and decision makers integrate issues related to social acceptance into their developments



It is increasingly understood that the success of innovative energy technologies is dependent not only upon the technical characteristics of those technologies, but equally on supportive social, political and economic contexts (EC, 2014 and 2015; OECD, 2014).

ARE YOU INTERESTED IN THE RESULTS?

If you wish to know more about the project:

- the website: <http://hyacinthproject.eu>
- Project Coordinator maria.jaen@cnh2.es
- Social Networks    
- Webinars & Workshops
- Digital mailing



HYACINTH PROJECT
The social acceptance by the general public, the stakeholders and the potential customers of hydrogen and fuel cell (FC) applications across Europe is recognised as a key dimension in the implementation of those technologies. If FC technologies are to play a significant role in Europe's near to mid-term road systems, social acceptance issues are crucial.

OBJECTIVES
The main objective of HYACINTH project is to gain a deeper understanding of the social acceptance of hydrogen technologies across Europe. HYACINTH aims to:
- Identify user-related anxieties and acceptance of hydrogen energy and FC technologies and perceived potential benefits.
- Identify the main drivers of social awareness and acceptance of FC technologies.
- Support stakeholders through the development of a Social Acceptance Management toolbox.

PARTNERS
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ARCELORMITTAL
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UNIVERSITY OF LISBON
University of Innsbruck

HYACINTH PROJECT
First results from the opinion poll: general public and stakeholders

FCH
This project has received funding from the Fuel Cells and Hydrogen Joint Undertaking (FCH-JU) under grant agreement N° 621228.

<https://www.youtube.com/watch?v=OJHyXGWxCzg>

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Thank you for your attention!

HYACINTH:
Hydrogen Acceptance IN the Transition phase

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