

HyPROFESSIONALS Project

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HyPROFESSIONALS project

1. Project achievements: project & partnership description

- **HyPROFESSIONALS**, Development of educational programmes and training initiatives related to hydrogen technologies and fuel cells in Europe (www.hyprofessionals.eu)
- Duration 24 months, from 01/01/2011 to 31/12/2012
- Budget: 432.116,00 € / Funding: 373.537,00 €
- 9 project partners (Coordinator: Foundation for Hydrogen in Aragon):
 - From 5 countries: D, F, UK, I, ES + two international entities.
 - Partners from education (2), FC&H2 tech (5), associations (2)

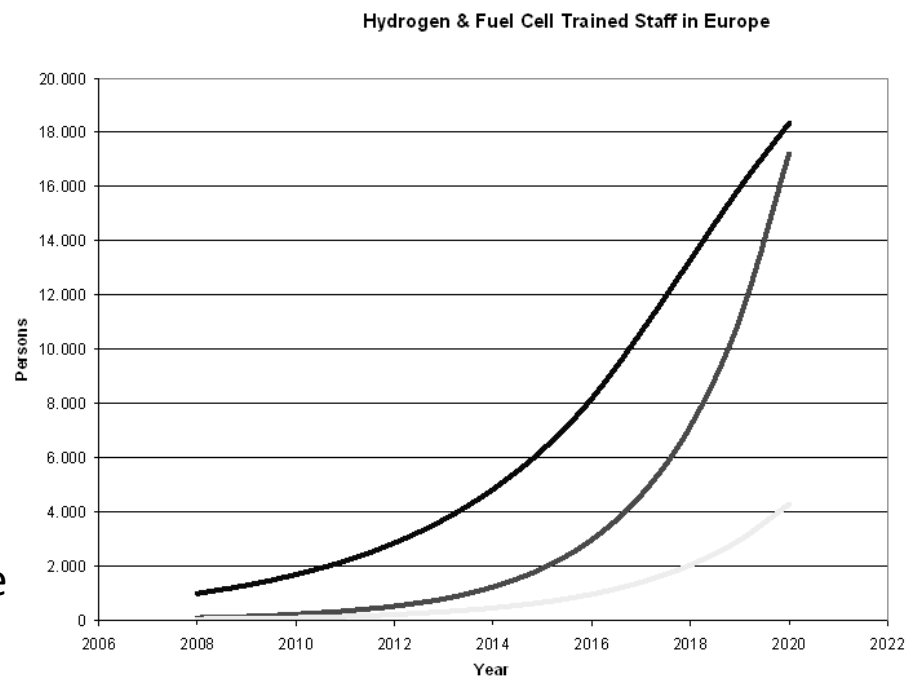




From the DoW: Development of training initiatives for technical professionals will be started aiming **to secure the required mid- and long-term availability of human resources** for hydrogen technologies -> focus on **vocational training**

In other words:

- To help the JTI and industry to be relieved from taking care of the training of the future technicians. This should be done naturally by the educational system(s).
- We will succeed as far as the (various) educational system(s) get aware and take action. Germany, France, UK, Italy and Spain, present at the consortium, are the 5 biggest in population in the EU.



From Implementation Report WG5 Cross Cutting Issues,
European Hydrogen and Fuel Cell Technology Platform

- 1) Mapping** of existing training initiatives, materials and funding programs (WP1)
- 2) Proposals** for new initiatives (WP2), by way of a gap analysis (current training offer vs. industry expectations)
- 3) Test** or implement initiatives (WP3), through 2 pilot actions, 200 person-week trained, and an E-library.
- 4) Dissemination** (WP5) to ensure that project results will be used in as many relevant training programs of European educational institutions as possible, with emphasis in involving public administrations, 2 dedicated workshops and provide hand-over for continuation.

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HyPROFESSIONALS project

1. Project achievements: Approach in performing the activities

Approach:

Mapping of existing training programs

- What has been done so far in H2&FCs?
- How is innovation in vocational training funded?
- How does vocational training evolve?



Proposals for initiatives

- Who are the “offer and the demand”?
- What will be the mismatch of “offer and demand”?
- What could be done? at what time?



Testing and implementation of initiatives

- Pilot actions within the project
- Seed for new steps (broader initiatives outside the scope of the project)



Dissemination plan

- Workshops with Target Groups. Bringing together industry, education, authorities...
- Website, media...



Milestones:

1) Mapping of current status (WP1)

- Reports on funding programs and existing initiatives (M6, under final revision)
- Report on educational systems (M10)

2) Proposals for new initiatives (WP2)

- Identification of target groups (M10)
- Gap analysis (M15)

3) Test or implement initiatives (WP3)

- 2 pilot actions (Q3/12)

4) Dissemination (WP5)

- Website operative (M4) as well as communication plan
- Workshop 1 (Q1/12 - presentation of gap analysis to target groups)
- Workshop 2 (Q4/12).



• Funding programs analysis report

— **Objective:**

- Mapping the funding programs in the origin countries of the partners involved.

— **Results:**

- Funds for educational measures are available.
- Extensive R&D programs (partly owned H2&FCs) exist in most of the countries, but the education and training topic (e.g. service and maintenance) is often a minor priority as it appears at the end of the value chain.

— **Conclusions:**

- NO direct calls for supporting education and training activities in the field of H2&FCs.

• Best educational practices report

— **Objective:**

- Collect the best or excellent educational initiatives (to replicate in other regions).

— **Results:**

- Very few educational offerings focused exclusively on the technology of H2&FCs.
- H2&FCs studies mostly related to renewable energy and graduate or postgraduate level

— **Conclusions:**

- Training educational offer at the vocational training level is very limited. This could grow by adding H2&FCs modules within the current vocational training courses.



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1. Project achievements: Technical accomplishments

- **Dissemination plan and materials**

- **Objective:**

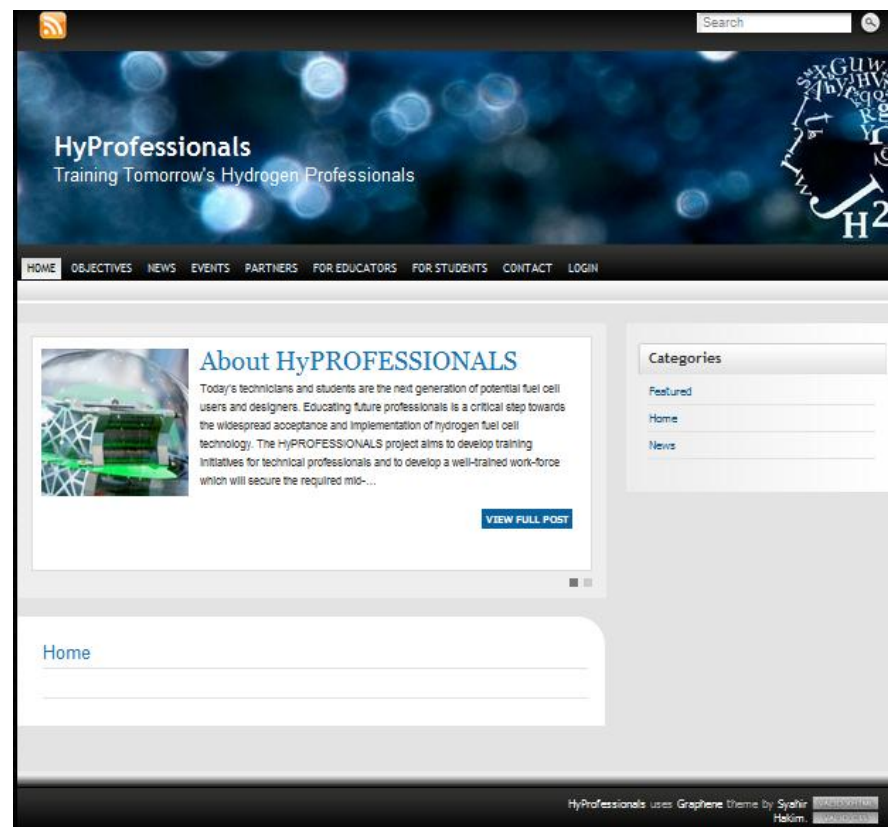
- Create a high level of visibility throughout Europe and abroad at all dissemination levels

- **Results:**

- Boiler Plate and standard presentation
 - Website (576 visits)
 - Project Brochure
 - Press Release
 - Definition events and workshops

- **Conclusions:**

- The dissemination plan is designed to facilitate the overall project objectives





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2. Alignment to MAIP/AIP

- **Correlation to MAIP (AA5):**
 - ***Strategic Objectives of the FCH-JU:***
 - “Promote public awareness and **understanding** of these technologies [...]”
 - ***No quantitative targets in MAIP***
 - ***Priorities, Cross-cutting issues:***
 - “To increase the impact of FCH JU activities, it is important to develop strategies on how to **inform policy-makers** and investors and support **regional** and local development plans”.
 - “In order to create the human resource base required by a growing industry, educational activities should be undertaken developing training programmes at **all levels**, in particular for specific target groups such as regulators and technical project managers”.
 - ***Role of SMEs:***
 - “In order to address the specific **limitations and risks of SMEs**, the FCH JU will, inter alia, explore ways to open access to the necessary manufacturing and process capabilities through partnership schemes and **education initiatives**”.



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2. Alignment to MAIP/AIP

- **Correlation to AIP 2009 (AA5):**

- **Programme Overview:**

- “ [...] Educational Projects will enable wider access to training and educational information”

- **Specific topics:**

- “Development of training initiatives [...] to **secure the required mid- and long-term availability of human resources** capable to properly **operate the technologies safely** [...] for various educational levels, and cooperation with other **educational programs like Leonardo** will be sought.”.

- **Topic SP1-JTI-FCH.2009.5.1: Development of educational programmes**

- “Rationale: While several training programs exist in the EU, **specific** hydrogen and fuel cell-related **technology training** is needed to secure the required mid- and long-term human resource base of technical professionals needed within research, industry and users. This topic specifically addresses the need to provide **technical training to future industry professionals at all levels**, from technical schools all the way to graduate studies”.

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2. Alignment to MAIP/AIP



- **Project activities, results, achievements vs MAIP/AIP document targets :**

- **Overall project objectives / Scope of Work**

- “Projects should focus on the development of specific technology related training initiatives [...], in **cooperation with other programs** such as Leonardo” -> **Previous project H2-training.**
- “Suitable **existing programs** should be identified and **concrete proposals** shall be made to use them in an efficient and effective manner [...]” -> **WP1, WP2**
- “[...] **Project should focus on a specific educational level.** The initiatives shall be **tested and implemented during the project**, including specific measures for tracking of progress, [...], even **after the project is finished**” -> **Vocational training. WP3, WP5. Hand-over to HyRaMP**

- **Expected Outcome:**

- Mapping of existing training programs in the EU that may provide a good base for this educational action -> **WP1**
- Develop proposals for specific initiatives on educational programs addressing the need to develop a well-trained work force -> **WP2, WP3**
- Dissemination of results to industry and research -> **Specific actions in WP5**



- Gaps/bottlenecks in RTD&D proposed by MAIP/AIP documents
 - *MAIP / AIP provide a general framework where education and training finds a limited development. **Clear targets also in education and training are welcome.***
 - *Delayed awareness of FCs&H2 on general public administration and citizenship impedes higher level of communication with the policy-makers, especially in education, where lower level administrations do play fundamental roles and hence decision is scattered. **Forefront runner strategy necessary.***
- Priorities and topics possibly under/over-estimated in the AIPs in terms of technical challenge:
 - *Does not apply in terms of technical development of the project.*
 - *Demand of vocational training will be (solely) motivated by an actual need at the educational system, in a pull chain (market -> industry -> education). **Feed-forward measures are needed and especially reliable market figures.***



- **Contribution to Cross-cutting issues**

- *Does not apply in the sense that the project in itself belongs to Cross-cutting AA.*
- *A recommendation: introduce in the future MAIPs indicators of progress for cross-cutting.*

The last reference to the needs for training came from the Implementation Report WG5 Cross Cutting Issues (XCI), elaborated by the disappeared European Hydrogen and Fuel Cell Technology Platform. It estimated that the capacities needed would include up to 20.000 engineers and 15.000 to 20.000 service technicians requiring training over the next 10 years to fully realize the potential of the Snapshot 2020 scenario.

— Other FCH-JU projects

- ### **— Contact to Vocational Training European Associations**

- Several associations active in the field have been identified and contacted (EIT, EFVET, ECVET, EAEA, EADL, EVTA, CEDEFOP, EUROCOTT). Stepwise process to liaise. Lack of information and awareness on the vocational training side.



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4. Enhancing cooperation and future perspectives

- **Technology Transfer / Collaborations with other institutions and projects**

- ***Experience with Leonardo Agency:***

- H2-training: International expert training in Hydrogen Technologies and Fuel Cells (Leonardo grant ES/06/B/F/PP-149461), whose consortium included 5 partners of HyProfessionals (Fha, FSV, WBZU, Envipark and FAST, among others)
 - See http://www.h2training.eu/index_en.htm
 - Valuable results: Curricula design and educational material in four languages. Experience in pilot action “training for trainers”, both face-to-face and e-learning. E-learning platform.

- ***Potential hand-over to HyRaMP:***

- Five partners directly involved in HyRaMP (three at the Governing Board) and two more belonging to associated regions.
 - A hand-over of the results of the project is foreseen to be offered to HyRaMP.



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4. Enhancing cooperation and future perspectives

- **Project Future Perspectives**

- ***Proposed future research approach and relevance:***

- After the project, H2&FCs related entities shall still take the lead as part of FCH-JU activities or taking advantage of other programmes, building on the stronger commitment of the forefront running regions / member states.
 - In the pre-commercialization stage of the technology, the educational system should take the responsibility and financing, while the past experiences serve as best practices.

- ***Cooperation at EU, Member States or Regional level. Alliances between industry, government, research centers, SMEs, etc. International collaboration***

- Vocational education itself is low integrated at EU level. All efforts in this sense will help substantially in the case of H2&FCs.

- ***Possible contribution to the future FCH JU Programme:***

- AIP 2013 could include a “deployment” project following the conclusions of HyProfessionals
 - New initiatives of wider scope could be launched in the timeframe 2014-2020.



To know more...

- **HyPROFESSIONALS Project**
<http://www.hyprofessionals.eu/>
- **HyPROFESSIONALS Project partners**
<http://hyprofessionals.eu/partners>
- **HyPROFESSIONALS Project coordinator**
<http://www.hidrogenoaragon.org>