

HYLIGHTS

Hydrogen for Transport in Europe

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Deliverable 2.5

Intermediate Report for all Prioritised Demonstration Projects serving as input for the consecutive gaps analysis and demo project assessment in WP4

Executive Summary

Report Status: Version 5.0
Report Date: 02 March 2007



A Coordination Action to Prepare European and Fuel Cell Demonstration Projects on Transport

Acknowledgement:

HyLights is financed by funds from the European Commission under FP6

Contract: TEN/05/FP6EN/S07.53917/019990.

Executive Summary

In the course of the HyLights project WP2 has assessed 9 European key demonstration projects on hydrogen for transport. Therefore interviews have been performed and documented in protocols. Aim was a better understanding of the project organisation, operational experience and lessons learned. A presentation showing the results, conclusions and recommendations of the interviews has been prepared. The outcome will now be used by the other WPs as input for their analyses and preparatory work for e.g. the gaps analysis, the establishment of the Demonstration Program Framework, etc., but could be relevant for other interested stakeholders as well.

The basis for the interviews was a set of 21 questions structured into 4 topics:

- General project information
- Experiences from setting up the project
- Results / lessons learned
- Recommendations

These were distributed to the HyLights institute partners prior to the interviews in order to ensure that the expected answers were suitable for doing the analysis work of the other WPs.

As the most important findings of this exercise can be named the limited availability of vehicles, the necessity to define the project follow-up already during the set-up phase, the need for clear responsibilities for the infrastructure installations, the missing of an integrated long-term funding scheme (EU, MS, regional) as well as the lack of vehicle and infrastructure performance data due to few vehicles and / or missing assessment and funding frameworks.

The coordinators of nine leading European demonstration projects were interviewed:

- H2argemuc – The hydrogen project at Munich Airport
- ECTOS – Ecological City Transport System: Demonstration, Evaluation and Research Project of Hydrogen Fuel Cell Bus Transportation System of the Future
- CUTE – Clean Urban Transport for Europe
- ZERO REGIO – Lombardia & Rhine-Main towards Zero Emission: Development and Demonstration of Infrastructure Systems for Hydrogen as an Alternative Motor Fuel
- HyFLEET:CUTE – Hydrogen for Clean Urban Transport in Europe
- CEP – The Clean Energy Partnership Berlin

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- HYCHAIN-MINITRANS – Deployment of innovative low power fuel cell vehicle fleets to initiate an early market for hydrogen as an alternative fuel in Europe
- HyNor – The Hydrogen Road of Norway
- LHTP – The London Hydrogen Transport Programme

One of the most significant findings was that most projects have experienced problems in obtaining sufficient numbers of vehicles. (Early) commitment of vehicle industry and potentially bundling of resources are therefore key especially for future large-scale demonstration projects.

In case of hydrogen refuelling stations it has been recommended that one partner alone should take over the responsibility for the approval, erection and operation of a station in order to lower the complexity of the approval procedure and operations process.

Nearly all projects do some kind of project assessment, but the degree of detail differs significantly. Therefore the utilisation of a common tool, the HyLights Monitoring and Assessment Framework, may be a practical approach or at least a robust basis for future projects.

Beside the London Hydrogen Transport Programme, which is funded by 100% from public sources, all projects evaluated were/are various types of public-private-partnerships (PPP), but mostly without an own entity. The only exemption is the H2argemuc project, which operates as a German entity 'Arbeitsgemeinschaft – ARGE'.

It was recommended to select the project coordinator with particular regard to project management. A criteria catalogue for assisting the selection process, potentially developed within the preparation of the Demonstration Program Framework, could be a useful tool.

Furthermore, some interviewees have recommended subcontracting the project management to an external service provider.

If a project has installations (e.g. refuelling stations) at geographically separated locations, a separate local project coordinator for each location should be assigned.

In order to have a balanced partnership, it was advised to provide adequate funding for both the vehicles and for the hydrogen infrastructure.

For some projects the next steps after their finalisation are unclear. For future large-scale demo projects it should be clarified at the preparation phase as to how the project fits in the overall strategy towards a mass market roll-out.

The hurdles to be overcome during the set up and operation phase of the projects mentioned by the interviewees include financing (no adequate continuous funding available, difficulties in the identification of local funding resources), technology (incident requires redesign of refuelling station), authorisation / regulations, codes and standards issues (difficulties to receive authorisation for refuelling station, certification problems for vehicles) and others (long-lasting contract negotiations, lack of hydrogen vehicles, etc.).

On the project coordinators' wish list there is also the request for clear, flexible long-term funding schemes reflecting the overall political strategy at all funding levels (EU-wide, national and regional).

A suggested future improvement was that financial support should be already available during the project preparation phase as already this phase is very time consuming and costly.

It was also mentioned that funding organisations should be able to adapt funding to changing project budget requirements during the course of a project.

A common approach to publish status, data, results and 'lessons learned' of future projects should be agreed on and each publicly funded project should be obligated to provide respective information.

With regard to performance of vehicles and infrastructure only very limited information could be gathered as either it was already published (CUTE, ECTOS) or it was confidential.

The question on synergies with other fields of technology (e.g. with stationary applications or other alternative fuels at the refuelling station) has been answered very inhomogeneously not allowing to draw any conclusions.

Last but not least some additional ideas for potential incentives could be collected (of course national or local specialties have to be considered) such as decreased or no import taxes for hydrogen vehicles, free parking, free use of toll roads, allowance to use public transport lanes, no VAT, etc.

In general, it can be said that the interview activity was a very successful exercise as a lot of insights into various demo projects were gained. The project coordinators were very proactive and cooperative and have shown huge interest in contributing to the preparation of the next logical step, the large-scale demonstration projects.