

HYLIGHTS

Hydrogen for Transport in Europe

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Methodology to assess stakeholder requirements and interests

The GAPS analysis (Deliverable 4.2)

Executive summary

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

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Disclaimer

This document is the result of a collaborative work between HyLights Industry and Institute partners. The results of the research were subsequently elaborated and presented in a coherent manner, which involved extensive stakeholder consultation in locations around the world as well as feedback from the “HyLights” Industry Partners.

The ideas presented in this document were reviewed by certain "HyLights" project partners to ensure broad general agreement with its principal findings and perspectives. However, while a commendable level of consensus has been achieved, this does not mean that every consulted stakeholder or "HyLights" Industry Partner necessarily endorses or agrees with every finding in the document. The producer of this document is the sole responsible for its content and recommendations.

Executive summary

In order to define potential early markets for hydrogen in transport, it is necessary to assess the performance level of the current state of technology (vehicles, infrastructure etc) and to compare this with the minimal requirements of potential end-users. To do this, a methodology has been developed: the gaps analysis (figure 0.1). The gaps analysis describes which criteria are important to define the performance levels of current state of technology and of the required technology. An important issue in this is to define potential early markets and discuss the minimal level of the key performance indicators (KPI's). The KPI's describe the performance of the hydrogen vehicle in terms such as maximum driving range, pay load, fuelling time etc.

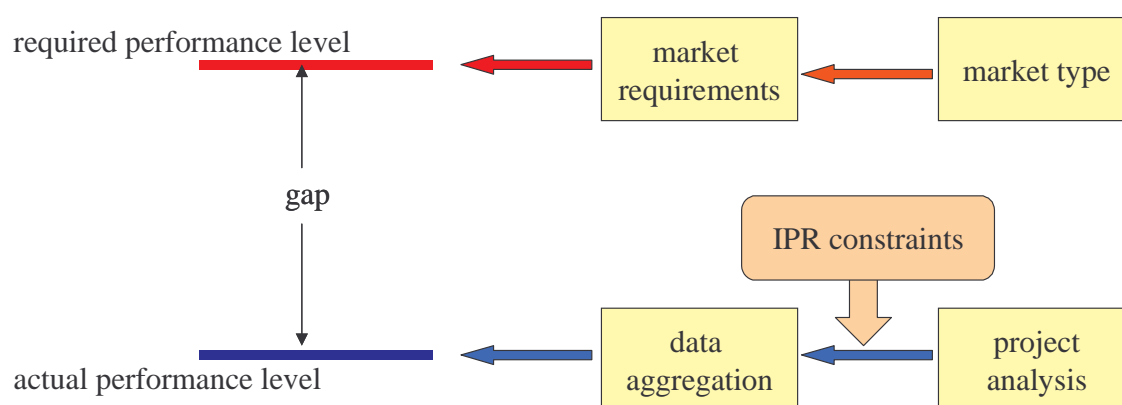


Figure 1 *Schematic representation of the gaps analysis. This report will focus on the upper part (red) of the gap*

This report describes the methodology development and validation. The results of the first outcomes of applying the gaps analysis methodology in the Netherlands are included. Based on a theoretical approach, relevant stakeholders have been selected on the level of national government, local government (provinces and cities), bus companies and commercial stakeholders. These stakeholders¹ (16 in total) have been interviewed to define their potential interest in participation in demonstration projects and to discuss the minimum performance level hydrogen technologies should comply with. Governments are seen as key stakeholders in the process to come to early market. As a test case, the Dutch government has been analysed to

¹ The interviewed organisations are: ministry of environment (2 divisions), ministry of transport, province of Noord-Holland, province of Friesland, city of Amsterdam, city of Arnhem, city of Nijmegen (2 divisions), city of Leeuwarden, GVB Amsterdam (public bus service Amsterdam), Connexxion (national bus, taxi and ferry company), Berlin Verkehrsbetriebe (bus company of Berlin), Greenwheels (car sharing company), TNT, Green Planet (multi-fuel filling station).

describe the process of acquiring of governmental fleets and to describe the process of public procurement of public transport (buses) in the Netherlands.

The interviews have shown the interest of stakeholders to discuss the potential role of hydrogen technologies in their organisation. Most respondents have expressed their interest but they also indicated that they see important barriers as it comes to the availability of vehicles, the current performance of vehicles, the expected costs of vehicles and the lack of support from the government. Most actors indicate that, though everyone should take his responsibility, in their view, the EU and the national governments should take the leading role when it comes to the introduction of new technologies. Due to these barriers, the discussions with the stakeholders have mainly been based on a hypothetical demonstration project. In practice, it was rather difficult to discuss key technical data as defined by the KPI's. As a consequence, the discussion mainly resulted in qualitative information. Some methodological revisions will be made in order to obtain the required data in the second phase of the project which will have an European broad scope.

Within its guidelines for purchasing governmental vehicles, the Dutch government describes the minimal environmental performance of the vehicles. Enhanced environmental friendly vehicles have also been defined. However, the guidelines focus explicitly on technologies that are commercially available on the market. So demonstration projects cannot be part of the current purchasing procedures. The procurement of public transport bus services is the responsibility of the public transport authorities. Those authorities are focussed on good services for a fair price and so environmental aspects seem to be of minor importance. The national government, however, is developing a new concession format (the innovation concession) which should stimulate the use of innovative technologies.

Taking into account the results of the first round of interviews, the next steps are suggested for 2007:

- Using the Key Performance Indicators (KPI's) to define the current and future state of technology and the state of technology of conventional vehicles (as reference). This quantitative information will be used to discuss the minimal required performance level in terms of the KPI's with potential users of early market applications. This will result in a graphical presentation of the difference (the gap) between the required performance level and the current and foreseen performance levels. The stakeholders to be interviewed will be selected based on the actor mapping. For each type of actor (e.g. mail delivery company), several companies throughout Europe will be interviewed to define the potential of early markets for their specific application.
- To get more insight in the way governments are organised and how they could play a role in the development and deployment of hydrogen technologies, additional governments will be interviewed and analysed the way the Dutch govern-

ment has been analysed. First steps have been made for Germany and the United Kingdom. The information on this subtask will be helpful in defining how to set up support mechanisms for governments to foster the development of hydrogen technologies.

- In order to define high-potential locations for demonstration projects, a new process will be started to involve regions more actively in HyLights. The result of this process will be multi-purpose. The process should lead to an overview of expectations of different actors and their market development plans over time (what early markets can be established, where and when). Based on these market development plans, a check will be made to define whether the right governments and companies have been interviewed (see first two bullets). If organisations are missing, they will be approached later on in the process.