

HYLIGHTS

Hydrogen for Transport in Europe

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Project Governance Indicators for Large-Scale Hydrogen Road Transport Demonstration Projects

Executive Summary

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

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EXECUTIVE SUMMARY

“HyLights” is a Coordination and Support Action to accelerate the commercialisation of Hydrogen and Fuel Cells (HFC) technologies in the field of transport in Europe. This report is part of Work Package 5 (WP5) of the “HyLights” project, developed and funded by the European Commission. The objective of this document is to identify the key project success factors - from a legal and project management viewpoint - for the undertaking of large scale hydrogen road transport demo projects at EU (i.e. the Joint Technology Initiative for Hydrogen and Fuel Cells) or national/regional level (i.e. the “Clean Energy Partnership” in Germany or other projects), the so-called “Lighthouse Projects” (LHPs).

The findings will be a set of “Project Governance Indicators” (PGIs) and will also be included in a Monitoring and Assessment Framework (MAF) currently under development within HyLights at both project and programme level. The MAF for project level already comprises initial Key Performance Indicators (KPIs), looking at technical and technological factors, and some “Project Governance Indicators (PGIs)” a more in-depth analysis of which is presented in this document. Additional PGIs will be included throughout the development of the MAF at programme level.

The PGIs are key factors that could positively or negatively affect the realisation of an LHP and could be key to the efficient and effective organisational success of the projects.

For purposes of analysis the PGIs have been divided according to whether they focus more on the Project Management Functions or the Legal Form that a future LHP may assume. The key functions and forms are first presented in tabular form and then analysed briefly. The analysis demonstrates the importance of each PGI and its consequences on LHPs, and is based on a survey with project partners/managers of concluded and/or on-going demonstration projects, desk-based assessment and research (subsequently validated with different project managers and other project partners/participants), FP6 project management experiences, relevant project management theory (i.e. PRINCE 2), corporate and IPR law, PPP theory, recent JTI related legislative proposals and related EU legislation.

KEY FINDINGS

The main lessons learnt were derived from past/on-going hydrogen road transport demonstration projects for the establishment of future LHPs. The feedback received from project partners/managers demonstrated that the PGIs that were useful for past and current demonstration projects might not be applicable for future LHPs. The methodology used for the analysis is explained in more detail under Chapter 1 of the full report.

The key findings from this report have been summarised in a single table, annexed to this Executive Summary in Annex 1. This table comprises of all the key PGIs that have been identified to be used in a future LHP.

The Checklist provided in Annex 2 provides the list of all the PGIs that were identified through extensive research before ratings were attached. This list particularly, will serve as a “checklist” of options to be considered by project promoters, consortia and/or the European Commission that will undertake and/or be involved in future LHPs.

Both tables of PGIs were compiled up the end of April 2008. Until the closure of the HyLights project in 2008, the analysis of the different PGIs will continue to be updated.

CALL FOR FUTURE RESEARCH

This report has highlighted the key PGIs and has sought to describe the importance of each function and form. Recommendations have been provided which may be used in an FP7-funded LHP. However there remains a need for information to be collected from the project partners themselves in order to fully comprehend the nature of insurance, liability, IPR problems that face them and to look for innovative ways in which collective learning may aide the future development of hydrogen transport applications.

In order to provide a most complete list and a better evaluation of the indicators, a "Weighting/Evaluating" table has been developed and this is provided to different project officers worldwide. The ultimate aim of this research would be to demonstrate which PGIs are the most important, useful and applicable for the future development of hydrogen transport in Europe. The final outcome of this exercise will be a list of concise recommendations of the do's and don'ts when applying the checklist of indicators in the future LHPs. The analysis will be concluded at the end of the HyLights project, i.e. December 2008.

Table of Contents

| | | |
|----------|---|-------------|
| 1 | Introduction | 1-10 |
| 1.1 | WHAT IS A PGI? | 1-10 |
| 1.2 | HOW HAS THE REPORT BEEN UNDERTAKEN? | 1-10 |
| 1.3 | THE SIZE OF THE ANALYSIS | 1-11 |
| 1.4 | RATING THE PGI FACTORS | 1-11 |
| 1.5 | WEIGHTING | 1-11 |
| 1.6 | CALCULATION AND CORRECTION OF BIAS | 1-11 |
| 1.7 | ASSUMPTIONS MADE IN THE STUDY | 1-13 |
| 1.7.1 | A FUTURE LIGHTHOUSE PROJECT | 1-13 |
| 1.7.2 | SURVEY TECHNIQUE | 1-14 |
| 2 | Project Governance Indicators | 2-15 |
| 2.1 | GENERAL MANAGEMENT FACTORS | 2-16 |
| 2.1.1 | GENERAL MANAGEMENT – STEERING GROUP | 2-16 |
| 2.1.2 | GENERAL MANAGEMENT – PROJECT MANAGEMENT | 2-18 |
| 2.1.3 | GENERAL MANAGEMENT – REGIONAL NODES | 2-19 |
| 2.1.4 | GENERAL MANAGEMENT – PUBLIC RELATIONS & TRAINING & EDUCATION | 2-21 |
| 2.2 | OPERATIONS FACTORS | 2-24 |
| 2.2.1 | OPERATIONS – MOBILITY & INFRASTRUCTURE GROUPS WORK PACKAGES | 2-24 |
| 2.2.2 | OPERATIONS – RCS, SAFETY AND QUALITY ASSURANCE GROUPS | 2-25 |
| 2.2.3 | OPERATIONS – INTRA-PROJECT AND INTER-PROJECT COMMUNICATION | 2-27 |
| 3 | Legal Factors | 3-28 |
| 3.1 | LEGAL – FORMS OF PARTNERSHIP | 3-28 |
| 3.2 | LEGAL – FINANCING – EIB RSSF | 3-30 |
| 3.3 | LEGAL – SAFETY – RCS | 3-32 |
| 3.4 | LEGAL – IPRS AND DATA PROTECTION | 3-33 |
| 3.5 | LEGAL – STATE AID | 3-34 |
| 3.6 | LEGAL – LIABILITY | 3-35 |
| 4 | Conclusions and Recommendations | 4-38 |
| 5 | Annexes | 5-41 |
| 5.1 | ANNEX I – MATRIX TEMPLATE | 5-41 |
| 5.2 | ANNEX II – CRITERIA EXPLANATIONS | 5-43 |
| 5.3 | ANNEX III – FINAL MATRIX | 5-51 |
| 5.4 | ANNEX IV – DOE-NREL RCS TABLE | 5-53 |
| 5.5 | ANNEX V - US DOT- WIDE ACTIVITIES SUPPORTING ROAD 1 | 5-54 |
| 5.6 | ANNEX VI – US DOE RCS PROGRAMME STRUCTURE | 5-55 |
| 5.7 | ANNEX VII – EU TYPE APPROVAL FOR HYDROGEN POWERED MOTOR VEHICLES | 5-55 |
| 6 | List of Literature Reviewed | 6-57 |

Conclusions and Recommendations

This report has highlighted the key PGIs based on a series of interviews and desk research. The findings have revealed the most essential factors for the successful implementation of the LHPs. These comprise the following:

- Steering Group
- Project Manager
- Mobility & Infrastructure Groups
- Quality Assurance Group
- Consortium Agreement
- Confidentiality Agreement
- Risk assessments on both infrastructure and vehicles
- Risk mitigation plans
- Safety training
- Third party liability coverage for infrastructure providers
- Data protection provisions in a contract

Summarising the analysis, we draw the below conclusions:

Management Factors

1. Steering Group
 - Decision-making body and thus critical to the direction of the project and therefore an essential element for an LHP – backed up by the survey's results.
 - Should meet at least once for each year of the project, preferably more often.
 - Should be representative of the industry sectors involved in the LHP so that decisions include all interests.
 - Its role should be set out in a Project Brief to prevent overlap of responsibilities with the Project Manager.
2. Advisory Board
 - An option to help increase the input of experts and public stakeholders, to provide input (e.g. technical, legal advice) to the Steering Group to help partners make better-informed decisions.
3. Project Management Team
 - Each project proposal should indicate who is to be the Project Manager.
 - In an LHP, a project management team seems highly necessary due to the number of potential partners and the amount of information that will be handled by the Project Manager.
 - A project management team is then to be designed and finally persons may be appointed to their designated positions.
4. Project Reporting
 - A draft layout of the reporting schedule and series of deliverables should also be presented in the proposal so that one may evaluate whether the project is going to be managed well, and to provide updates as to whether it is behind or ahead of schedule.
5. Nodes
 - If a project proposal states that the project will cover two or more countries, a nodal structure should be considered as a suitable management structure.
6. Communications & PR
 - PR should be done both locally, and by the Partnership's coordinator using the same branding but not necessarily the same message
 - Include a plan for engaging with the local community
 - Ensure continual dialogue with relevant authorities and other stakeholders
 - Build in procedures to deal with critical community
 - Promote publicly accessible hydrogen stations and use by qualified users, to encourage public acceptance.
 - Organising a potent strategic communications effort that develops and effectively deploys a persuasive and realistic message on hydrogen's benefits and risks will be a critical step in overcoming unfortunate media and public perceptions about hydrogen.

7. "Business Case"
 - A Business Case detailing for what targets and objectives the work packages exist to undertake or achieve that could also attract additional funding for the project from financiers such as venture capitalists or other risk financing institutions.
8. Project Controls
 - Controls, such as the use of "stages", so that at the end of a stage, the work package is reviewed by the Steering Group and it states the activity should be continued or its objectives changed.
 - Such controls ensure a solid internal communication programme but common interests should also be communicated to the Project Manager and the other work packages.
 - When allocating funding to LHPs "Evaluation Criteria" should be included in call for tender, as detailed outline of its Risk Mitigation Plan that would apply to the project, based on a risk assessment analysis.
9. Working Groups/Task Forces
 - Mobility and Infrastructure Work Packages should be present in future LHPs due to their complementary nature and significantly different outputs.
 - Safety and Quality Assurance should utilise the project management tools to effectively communicate concerns and for problems to be ironed out effectively.
10. RCS WG
 - RCS follow up and contribution to development of RCS is equally well done by an external monitoring body, or by partners themselves. A specific internal body (such as a dedicated work package) seems to have no added-value.
11. Intra-Project Communication
 - Communication both within and between projects can be improved in numerous ways, all of which should be considered in the Project Brief.
12. Other factors
 - The specific circumstances, geographic location, technology evolution phase, partners' needs and Lighthouse Project objectives should be carefully weighted before a decision is reached to endorse a specific legal partnership form that could facilitate the receipt of funds such as RSSF against other issues pertinent to the choice such as liability, IPR, tax considerations, expansion of project partnership, inclusion of partners from non-EU countries, etc.

Legal Factors

1. RCS
 - It is difficult to develop RCS for a technical field that is new and in constant development. The Lighthouse Projects could and should serve as platforms for the collection of data to be contributed to the development of a solid RCS framework for hydrogen road transport technologies in Europe. Uniform codes and standards will reduce risks perceived by insurers of new and innovative hydrogen technologies helping to reduce the likelihood of lawsuits whilst reducing future insurance costs.
 - As LHPs will be aiming to develop harmonisation of standards, the use of technology that has already acquired certification would help to speed up the advancement towards commercialisation.
2. IPR
 - It is advisable for building trust and an efficient learning system, that a set of clear IPR principles, in line with the EC competition regulation and any other applicable legislation be stipulated the call for tender outlining boundaries in the governing rules and repeated in the text of each specific financing agreement for the Lighthouse Projects.
3. State Aid
 - State aid from Europe does not appear to pose a threat to the development of LHPs due to the inherent character of the FP7 set-up. However, Member States and Regions should be cautious when providing funds to projects that do not have a separate legal form, and in which case a Special Purpose Vehicle would provide the safest option of providing funds within European state aid rules.
4. Liability/Safety/Insurance
 - Use only tested and safe technologies for fuelling stations and require that users of hydrogen fuelling stations be properly trained and authorised
 - Provide regulatory guidance to the insurance industry to encourage the availability of reasonably priced insurance for vehicle operators and fuel providers.

Annex 1 – Main Lessons Learnt

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| Steering Group | <ul style="list-style-type: none"> § Sets the direction of the project – is the decision making body § Should encourage partners to commit to the project and builds-in discipline to the project |
| Advisory Board | <ul style="list-style-type: none"> § May be beneficial to advise/support the Steering Group § May be appointed ad personam and therefore may include external parties including NGOs, research groups etc. |
| Project Manager /Management Body | <ul style="list-style-type: none"> § Role is to execute the project and to facilitate information exchange between those who steer the project and those on the operational level § May be a Managing Director/Team if a single legal entity is created § Overlooks budget implementation and monitors whether project activities remain within the initially identified project financial/objectives' boundaries § Responsible for daily operations and for reporting to Steering Group should change management be deemed necessary |
| Regional Nodes | <ul style="list-style-type: none"> § May be useful in larger, cross-cultural LHPs (a) for inclusion of less developed geographical areas but with great potential to join the hydrogen economy as well as (b) development of different hydrogen production methods based on each area's local potential and (c) foster the participation of SMEs in the projects i.e. more local system and component developers § Could tailor certain operations to local needs while leaving other, broader operations more centralised and lead to the establishment of a Hydrogen Highway |
| PR & Training and Education | <ul style="list-style-type: none"> § Aims to secure stakeholder support § Use of a professional PR company has many applicable advantages § Role is to do communication work in order to raise public awareness of the project and of hydrogen and fuel cell technology as such § The LHPs could – once well established – serve as training hubs and develop “Certification & Accreditation” programs for the technicians and all systems/component/vehicle operators/users, etc and/or collaborate with universities, standardisation bodies for such activities. |
| Mobility and Infrastructure Groups | <ul style="list-style-type: none"> § The separation of mobility and infrastructure operations allows for partners to focus on their specific objectives with coordination when necessary § Autonomous operations need effective inter-group communication especially when common interests are involved (see also example of the EU FCH JTI and its different Committees) |
| RCS, Safety, Quality Assurance, Risk Mitigation and Assessment | <ul style="list-style-type: none"> § There are three main ways of monitoring RCS, Safety and Quality assurance: 1) using an external body (e.g. lawyers etc.), 2) using an internal body (e.g. an ad hoc group of member organisations), 3) partners monitor their own compliance with the limited number of regulations as well as any quality control put in place by the project manager § In Europe there exists no such thing as a “European Hydrogen Directive” and in general terms regulations are not substance but application specific. In October 2007 a proposal for a type-approval for hydrogen-powered vehicles was presented to the European Parliament and the European Council. The proposal was drafted following a public consultation process § The Lighthouse Projects could and should serve as platforms for the collection of data to be contributed to the development of a solid RCS framework for hydrogen road transport technologies in Europe. This will greatly facilitate the large-scale commercialisation and the fast uptake of such technologies |

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| | <p>§ A staged risk mitigation plan ensures safety, while RCS mapping is recommended. LHP partners should carry out the necessary assessment of the risks posed to the health & safety of those dealing with the hydrogen technology on a daily basis.</p> <p>§ In the US, the Department of Energy (US DoE) requires the submission of safety and risk mitigation plans with each funding request</p> <p>§ Partners should be aware of legal obligations in this regard and promote such activities through the Project Management body and/or the Steering Group</p> |
| Internal Communication | <p>§ Three key forms of improving internal communication have been identified: 1) forum, 2) technology team meetings, 3) efficiency analysis body / project coordination committees</p> |
| Legal Forms of Partnership | <p>§ Incorporated forms may offer increased longevity, while unincorporated forms may be less administrative</p> <p>§ LHP project partners should consult with a legal specialist or an accountant to determine if a corporate structure would be best for best for the LHP</p> |
| Financing | <p>§ A Risk Sharing Financing Facility from the European Investment Bank (EIB) allows a larger volume of loans for R&D projects and the financing of projects with a higher risk profile than would otherwise be possible</p> <p>§ If funds go to the project promoters directly (a corporate structure) funds can be allocated to very high-risk profile projects as the risk is dissociated from the project itself.</p> <p>§ In Project financing, the EIB would base its bankability assessment on the LHP itself and its capacity to generate cash-flow as well as the proportion of equity brought in the project by the project partners</p> |
| IPRs | <p>§ Lighthouse Projects' IPRs rules, and in case of EC funding being provided, should comprise to an extent the relevant EC FP7 rules; however, a degree of flexibility is allowed</p> <p>§ A set of clear IPR principles and ownership rules, should be included in the agreement establishing the partnership; of crucial importance is the design of an effective IPR handling framework foreseeing data collection, handling and dissemination. The latter is of high importance to build and maintain a trusting environment with the partnership</p> |
| State Aid Rules | <p>§ LHPs will need to comply with the state aid framework for Research, Development and Innovation (RDI), which has introduced a series of criteria for evaluating whether a given RDI project is in conflict or not with state aid rules</p> <p>§ Combined Member State <u>and</u> FP7 funding should not exceed the maximum thresholds allowed by the appropriate state aid rules</p> |

Annex 2 – PGI Checklist

| PROJECT MANAGEMENT FACTORS | LEGAL FACTORS |
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| <i>GENERAL MANAGEMENT</i> | <i>LEGAL FORM</i> |
| Steering Group / Steering Committee (decision making body) | Public-Private Partnership |
| Project Management team vs. one person coordinator | Incorporated legal form (i.e. Ltd, unlimited, EEIG, etc.) |
| External Project Management company non-project partner | Public shareholder majority of shares |
| Managing Director vs. team (company structure) | Private shareholder majority of shares |
| Decision Making Board (company structure) | Unincorporated (simple collaboration, other) |
| Executive Expert/Consulting Group (not part of decision making process just providing opinion) | Consortium Agreement |
| Local/sub-management structures/nodes | Confidentiality Agreements |
| Local training / education body | Sub-contracting Agreements |
| | Vehicles/buses/infrastructure leasing agreements |
| | Vehicles/buses/infrastructure purchase agreements |
| | Fleet operator contracts |
| <i>OPERATIONS</i> | <i>FINANCE</i> |
| Dedicated Administrative body – Secretariat | EU Funded |
| Mobility/Vehicle Group | National funds |
| Infrastructure Group | Regional/local funds |
| Ad hoc Working Groups | Risk financing/Venture Capital |
| Safety Team | Project financing agreements |
| Quality assurance/efficiency body | Public Procurement |
| Monitoring & assessment body | Competitive Dialogue |
| Project Coordination Committee (between work packages and the European Commission) | Calls for tenders |
| Finance body (Treasurer) | Call for project proposals |
| Separate financial management between nodes and central budget | |
| RCS External Monitoring body | <i>SAFETY AND RISK</i> |
| RCS Intra-project Monitoring body | |
| RCS monitored by project partners | Risk assessment - infrastructure |
| Stationary Applications Body | Risk assessment - vehicles/buses |
| Efficiency Analysis Body | Risk mitigation plans |
| Technology Team meetings | Safety training |
| | Safety plans |
| | "Third party" liability OEMs |
| | "Third party" liability infrastructure provider |
| | "Third party" liability special project consortium/group provisions |
| | External insurance provider (infrastructure) |
| | External insurance provider (vehicles) |
| <i>OTHER</i> | <i>OTHER</i> |
| Forum (including external/non-contracted stakeholders) | State aid rules |
| PR bodies in nodes/local management structures | Anti-trust |
| PR team consisting of Project Partners | Merger control |
| External PR firm (subcontractor) | IPR protection rules & procedures in the contract |
| | Data protection provisions in consultation with certification/authorisation organisation |
| | Partnership with certification/authorisation |

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| | organisation |
| | Memorandum of understanding (MoU) with other projects/regions |