NextHyLights

Supporting Action to Prepare Large-Scale Hydrogen Vehicle Demonstration in Europe

WP7 Assessment framework for additional hydrogen demo locations

Ingo Bunzeck, Bart Hoevenaars (ECN)

Mid-term meeting 22 JUL 2010
Daimler AG, Kirchheim/Teck-Nabern

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Supporting Action to Prepare Large-Scale Hydrogen Vehicle Demonstration in Europe

7.1. Analysis and validation of location criteria

Ingo Bunzeck (ECN)

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- Participants
  - WP lead: ECN
  - ALL others: review and information providers
- Goals
  - Development of an assessment framework to determine eligible additional hydrogen demonstration locations
  - Criteria list to be used by the FCH JU for the selection of the most suitable locations for upcoming large-scale demo projects

- Aim of this workshop
  - Discuss and validate the existing list of location criteria with project partners
  - Possible extension/refinement of criteria list due to changed situation in NHL

- Structure of Work
  - Task 7.1. Analysis and validation of location criteria with stakeholders
  - Task 7.2. Development of assessment framework
  - Task 7.3. Analysis of impact of policy instruments on buses

- Deliverables and Milestones
  - D 7.1. Analysis and validation of criteria (30.07)
  - D 7.2. Assessment framework for additional demonstration sites (31.12)
  - D 7.3. Policy support measures for buses

Where to start a large-scale hydrogen demo project…

here?

or…

here?

- One of the tasks of NextHyLights is to support FCH JU for selection of the most suitable locations for the 2nd phase of large-scale demo and roll-out scenarios (buses also towards commercialization)
- First mover regions well-known
  - condensed list of most committed regions: HyRamp, HBA, CHIC
  - existing financial and political commitment
  - but fact-based evidence is needed for decision back-up
- Unique characteristics of each region need to be considered

- How to neutrally and transparently evaluate and rank locations ?

WP7: Regions criteria framework (1)

- Establish criteria catalogue as common basis for comparison
  - Representing the most important issues to be taken into account for location assessment
- Why criteria?
  - Facilitate objective regions assessment
  - Provide decision support mechanism to FCH JU for site selection
  - Allow regions transparent self-assessment and identify areas of improvement
- “Some regions are more equal than others”
  - Ideal locations may also be identified by interrelating context dependent criteria

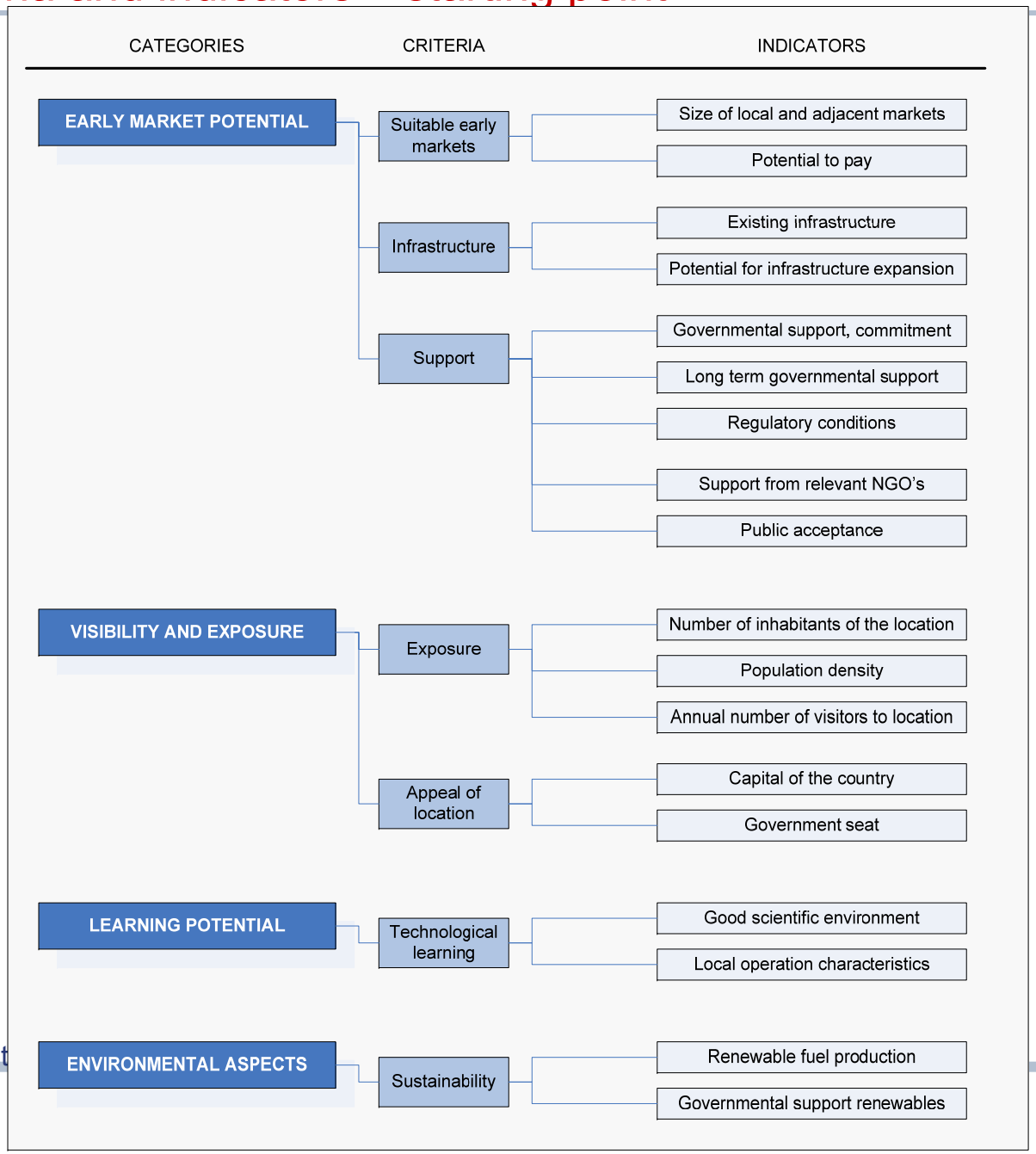
WP7: Regions criteria framework (2)

- First criteria set from HyLights project
  - Based on one year discussions with industry
  - Presented to HyRamp in June 2008
  - Applied to selected regions as self-assessment
- Feedback provided to HyLights
- Incorporated into final HyLights deliverable as basis for NextHyLights assessment

- Four main categories have been defined (details presented on next slide)
  - Early market potential
  - Visibility and exposition
  - Learning potential
  - Environmental aspects

- Each category measured by several criteria and indicators
- Mix of qualitative and quantitative indicators
  - Qualitative criteria to be interpreted in context
  - Holistic instead of black-white results
  - Serves to support assessment of different location in comparison

WP7: Criteria and indicators – starting point



WP7: Criteria and indicators – starting point

NEXTHYLIGHTS

Criterion 1.3 - Support	
Indicator	*Valuation*
Indicator 1.3.3 **Regulatory conditions**	*(General description)*
Is the deployment of the technology supported (not hindered) by regulation? Are vehicles allowed to drive on the streets and is it allowed to build a sufficient number of hydrogen filling stations? Are regulations consistent over the whole region? Can permits be obtained easily and quickly?	Are vehicles allowed to drive on the road? Yes [+] *(mark correct answer)* No [-/-] Is it allowed to establish hydrogen fuelling stations? Yes [+] *(mark correct answer)* No [-/-] tations within the built-up area? *correct answer)* Are regulations consistent within the whole region? Yes [+] *(mark correct answer)* No [-] Duration for obtaining permits: < 4 months [++] *(mark correct answer)* 4-6 months [+] 7-12 months [0] 13-18 months [-] > 18 months [-/-]

Example of template

Eligibility of Region X to host a demonstration project for hydrogen vehicles		possible values
EARLY MARKET POTENTIAL		
Suitable early markets		
Size of local and adjacent markets		
Number of passenger cars:	1.226.000	numeric
Number of vans:		numeric
Number of busses:	2.400	numeric
Number of (conventional) fuelling stations:	300	numeric
Number of passenger cars in adjacent markets:	1.400.000	numeric
Number of vans in adjacent markets:		numeric
Number of busses in adjacent markets:	2.800	numeric
Number of fuelling stations in adjacent markets:		numeric
Potential to pay (GDP/capita)	22.857	numeric
Hydrogen infrastructure		
Existing infrastructure	++	++, + or -/-
Potential for infrastructure expansion (# regions)	0	numeric
Support		
Governmental support, commitment	++	++, +, 0, - or -/-
Long term governmental support	++	++, +, 0, - or -/-
Is it allowed to establish hydrogen fuelling stations?	+	+ or -/-
Hydrogen fuelling stations within the build-up area allowed?		+ or -
Are regulations consistent within the whole region?	+	+ or -
Duration for obtaining permits.	+	++, +, 0, - or -/-
Support from relevant NGO's	0	+, 0 or -/-
Public acceptance	+	+, 0 or -/-
VISIBILITY AND EXPOSURE		
Exposure		
Number of inhabitants of the location	++	++, + or 0
Population density	++	++, +, 0 or -
Annual number of visitors to location	+	++, +, 0 or -
Appeal of location		
Capital of the country	+	+ or 0
Government seat	+	+ or 0
LEARNING POTENTIAL		
Technological learning		
Good scientific environment	+	++, + or 0
Local operation characteristics	0	+ or 0
ENVIRONMENTAL ASPECTS		
Sustainability		
Renewable fuel production	+	+ or 0
Governmental support renewables	0	+, 0 or -/-

Example of the outcome of criteria run when applied for region X

- Relevant outcome of location assessment
  - overview of current situation within a region
  - indication of improvement potentials

- Results not be used to appoint ‘good’ or ‘bad’ regions, but enable ranking according to the criteria
  - weighting of different criteria can be changed by FCH JU

- Criteria also to be applied by regions for structured self-check to
  - improve specific indicators (e.g. policy environment)
  - even though some indicators can hardly be changed (e.g. exposure)

- Outcomes of an internal test-run with three regions in the HyLights project
  - Scandinavia (1) and Germany (2)
  - Some of the data not available or can be accessed much faster via regions contacts → Cooperation with regions is key
- Lessons learned
  - Comparison shows that similar commitment to hydrogen exist from the political level
    - Differences in the legislation and duration for obtaining permits
  - Large, populous regions or cities have an advantage when it comes to the potential future market by size
    - However, some small regions have a very high GDP/capita i.e. higher potential of end-users to afford early series of hydrogen vehicles

- Update of criteria list for location assessment
  - extension or replacement of existing key criteria ?
  - additional indicators
  - type of application

GIVE: Inform regions on and make the case for

- FCH JU program, i.e. Lighthouse Projects “Hydrogen for Transport”
- Industry’s ambitions to commercialize H_2&FC for transport and to engage in European Lighthouse Projects
- Options to fund Lighthouse Projects
- Address all 3 vehicle sectors

AND

TAKE: Collect information on

- Region’s general commitment to H_2&FC (key data for ranking by WP6 with “regions eligibility tool”, separate from regions meeting)
- Region’s specific interest to participate in FCH JU projects (extent, sector, call #)

- Next steps

- Incorporation of feedback by project partners on location criteria
- Review process for deliverable D7.1. ‘Analysis and validation of location criteria’
- Finalization of D7.1. (31.07. but very likely delayed due to shift of validation workshop to the end of July)

- Questions??

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