NextHyLights

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

WP7 Assessment framework for additional hydrogen demo locations

7.1. Analysis and validation of location criteria

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Meeting with FCH JU officer 14 SEP 2010
Covent Garten, Place Rogier 16, 1210 Brussels

- 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

- Structure of Work
  - Task 7.1. Analysis and validation of location criteria with stakeholders (D7.1. currently under review)
  - Task 7.2. Development of assessment framework
    - Establishment of an easy to use tool (31.12.)
  - Task 7.3. Analysis of impact of policy instruments on buses

NEXTHYLIGHTS

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
- First criteria set from HyLights project
  - Based on one year discussions with industry

Refurbished regions criteria list (D7.1)

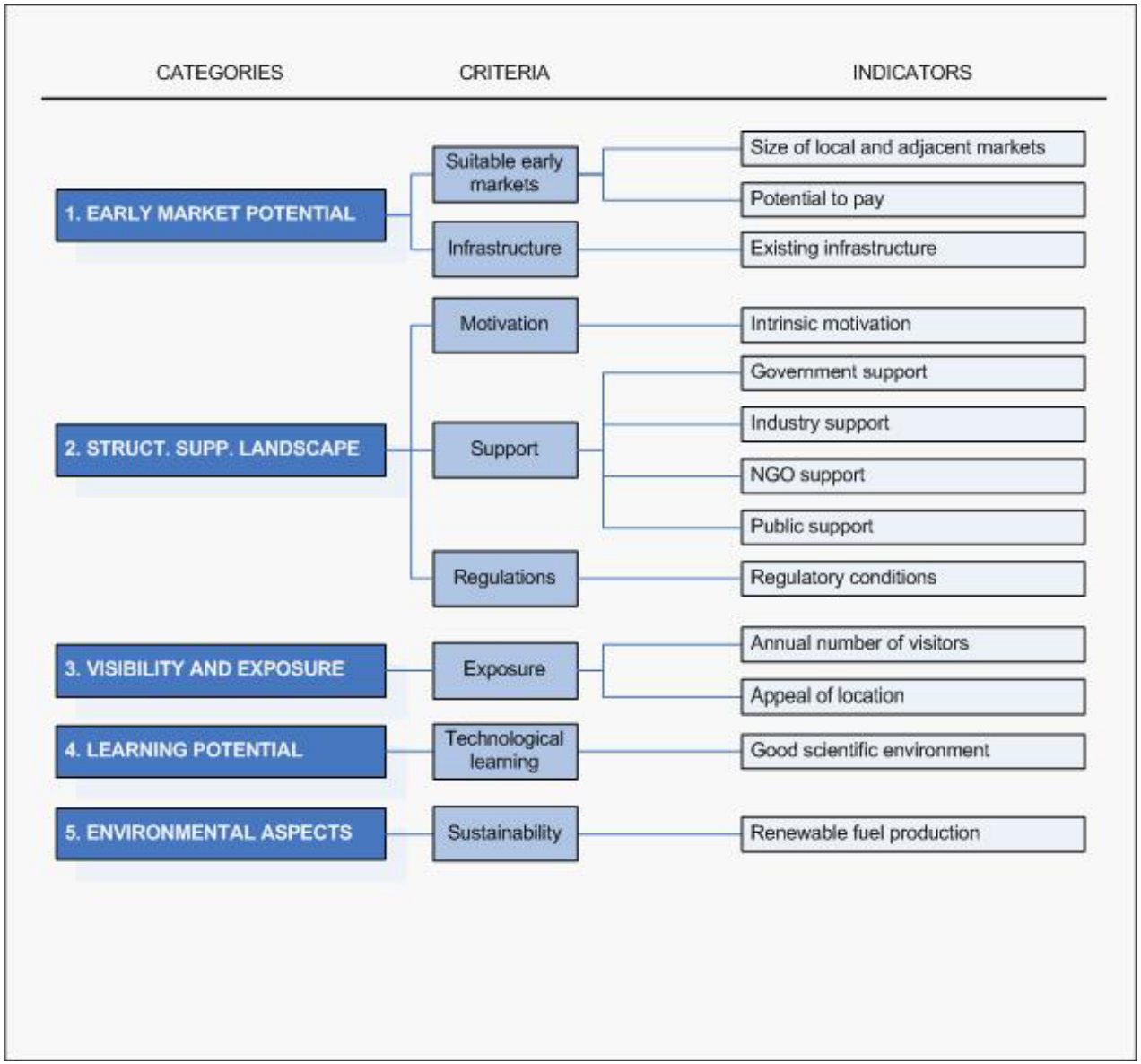
- Expert session at ECN
- Regions criteria workshop in Nabern July 22nd

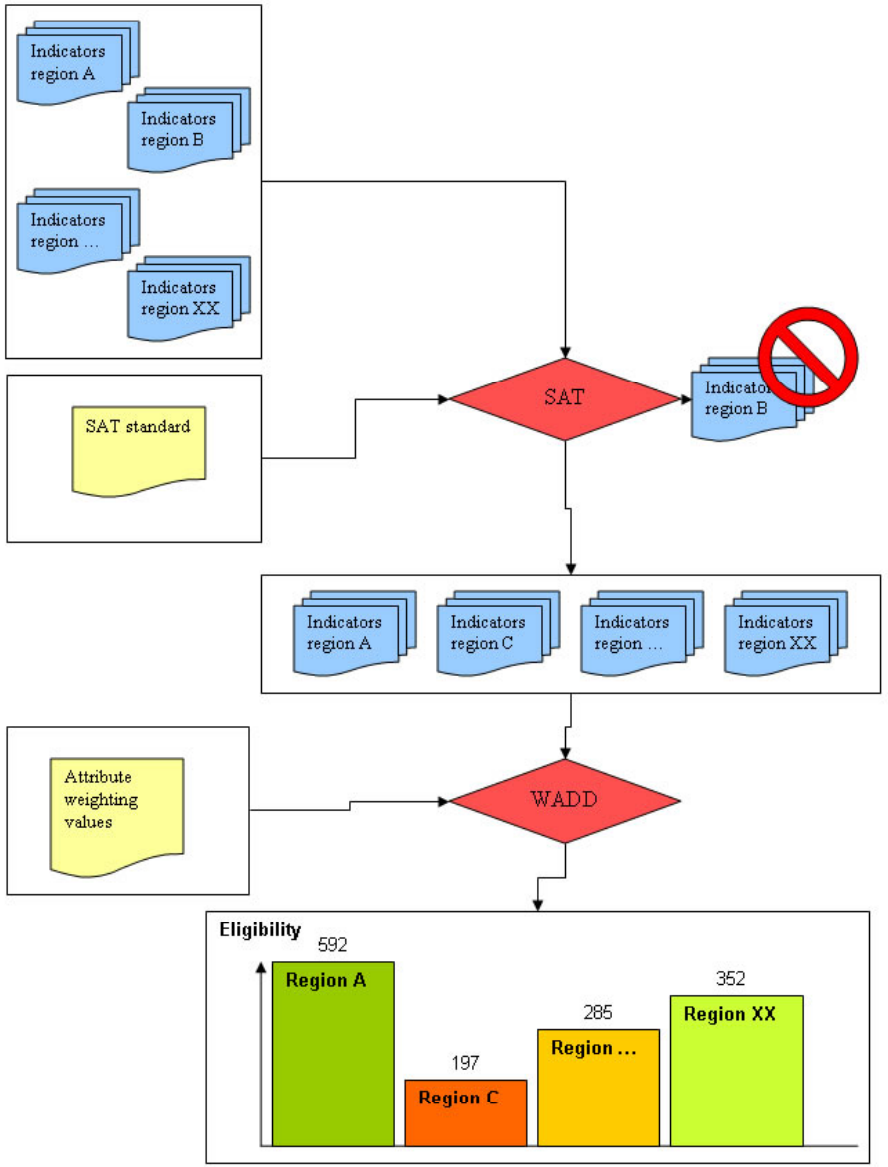
- Four main categories have been defined (details presented on next slide)
  - Early market potential
  - Structural support landscape
  - Visibility and exposition
  - Learning potential
  - Environmental aspects

- 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

NEXTHYLIGHTS





Threshold not met, therefore region will be not eligible

WP7: Criteria and indicators – starting point

NEXTHYLIGHTS

1. Early Market Potential			
Criterion 1.1 suitable early markets			
Indicator	Description	Valuation	Derived metric (optional)
1.1.1 Size of local and adjacent markets	In order to achieve scale effects and consequential cost reduction of fuel cell applications, market size is important during commercialization.	Sv = Sum of all conventional passenger cars, vans and buses in regional market and adjacent markets. Highest Sv in the pool is the benchmark $Sv_{benchmark}$ Sr = Sum of all refuelling stations in regional and adjacent markets Si = Sum of the number of inhabitant in region and adjacent regions Score = $Sv/Sv_{benchmark}$ [illegible]	Q1=passenger cars per capita Q2=vehicles per refuelling station Q1 and Q2 are quality indicators Highest Q1 and Q2 in the pool are benchmark values $Q1_{benchmark}$ and $Q2_{benchmark}$
1.1.2 Potential to pay	For a wealthy location deployment of the first series of hydrogen vehicles will be easier. Besides, one could expect that people in such locations are more willing to pay for the new technology.	The highest GDP/capita in the pool of regions is set as the benchmark and used for normalization. => Score = [GDP per capita] / $[\text{GDP per capital}]_{benchmark}$	-
Criterion 1.2 Existing infrastructure			
Indicator	Description	Valuation	Derived metric (optional)
1.2.1 Existing hydrogen refuelling infrastructure	If there is any hydrogen refuelling stations available, than this will facilitate the introduction of hydrogen vehicles, as well as reduce project costs.	Score: a) 0 (score = 0) b)1 <n < 5 (score = 0.5) c) n > 5 (score = 1.0)	-

Example of detailed criteria description

- 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

- 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)

- Next steps

- Incorporation of feedback from review process by project partners on D7.1. ‘Analysis and validation of location criteria’
- Application of regions criteria in pre-assessment of first regions
- Final information collection within meetings with ‘high-level’ regions representatives

- Questions??

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