Country Update: United Kingdom

IPHE 19th Steering Committee Meeting
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- Recent developments
- Hydrogen TINA
- UKH2 Mobility

Recent developments

- Renewed interest in hydrogen….
  - for transport
  - for energy storage/ grid balancing
  - for heat

- … but many uncertainties

Hydrogen TINA

Technology Innovation Needs Assessments

- TINAs are a collaborative effort by the Low Carbon Innovation Coordination Group (LCICG) which represents the major public sector funding organisations in the area of low carbon innovation.
- TINAs aim to identify and value the innovation needs of specific low carbon technology families to inform the prioritisation of public sector investment in low carbon innovation.
- The analytical methodology for TINAs has been developed by the Carbon Trust with contributions from core LCICG members and other experts.
- Beyond innovation there are a number of opportunities and barriers which are addressed by other Government initiatives.
- TINAs for a number of low carbon energy technologies have already been completed and published, and are available on the LCICG website: *www.**lowcarboninnovation**.co.uk*

Hydrogen TINA

Key emerging messages (1)

For hydrogen transport

- There are 3 options for ULEVs, each has advantages and disadvantages, there is no clear winner.
- Hydrogen transport is sufficiently attractive for it to be a credible option.
- The technology is available, works, and is ready for roll-out.

For hydrogen in the broader energy system

- It is harder to predict the role for hydrogen than in the transport case.
- Existing energy system models do not reflect the full value of hydrogen to the energy system.
- There are major uncertainties regarding the future production of hydrogen, and alternative scenarios are needed to deal with this.

Key emerging messages (2)

Market failures

- For early refuelling stations, there is a first mover disadvantage.
- The returns from refuelling stations are insufficient to drive the innovations which would be desirable to facilitate the roll out.
- Lack of market certainty is a key barrier to investment by the private sector

Scope for cost reduction

- Huge economies of scale are possible. Costs could reduce by 75% by 2020.
- In the short term, the priority is to industrialise the innovation which has already happened.

UKH2Mobility

UK H_2 Mobility

- An industry-led collaboration also involving 3 Government Departments to evaluate the benefits and develop a business plan for the roll out of hydrogen refuelling infrastructure and fuel cell electric vehicles (FCEVs) in the UK from 2015.
- Follows a similar project in Germany.
- The project kicked off in January 2012.
- Phase 1, the analysis phase has been successfully completed, and a public report is available.
- Phase 2, the preparation of a business case is underway and will be completed before the end of the year. If successful, this will be followed by Phase 3, the preparation of an implementation plan, and Phase 4, the implementation.

UKH2Mobility

Phase 1

- Evaluated consumer demand for FCEVs over time
- Determined the hydrogen refuelling infrastructure necessary to support the consumer demand and planned its development
- Identified a mix of production methods able to provide cost-competitive hydrogen to the consumer while delivering very significant CO_2 emissions reductions
- Quantified the benefits of establishing FCEVs in the UK market.

Note: there will be a presentation on UK H_2 Mobility in the Friday morning session.

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Thank you!