



## EU Hydrogen and Fuel Cell Technical Review Days · 10-11 October 2007 · Brussels



### Benchmarking of the European Hydrogen Energy Roadmap HyWays with International Partners

#### Benchmarking of Hydrogen Energy Roadmaps

#### Project scope and objectives

- Compare hydrogen roadmapping and system analysis activities in Europe, USA, and other IPHE partners
  - Improve understanding of ongoing activities (common language, mutual understanding, alignment of int'l approaches)
  - Institutional and personal exchange under the patronage of IPHE
- ⇒ **Goal:** Develop recommendations for the preparation of an **International Hydrogen Roadmap.**

#### Project facts

- 24 month project (Oct 2006 – Oct 2008)
- Originating from the EC FP6 project HyWays
- IPHE patronage
- Coordinator: Ludwig-Bölkow-Systemtechnik (D)
- Total budget: 537 k€ (56% EC; 30% US DOE, 14% industry)



### WP 2: Benchmarking of EU and U.S. pathway analysis

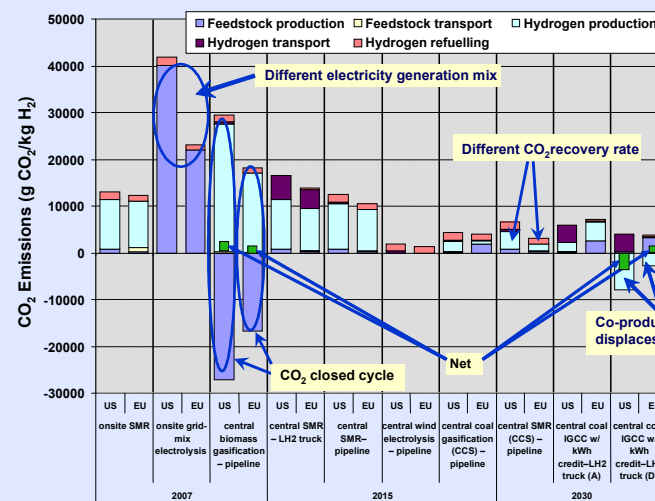
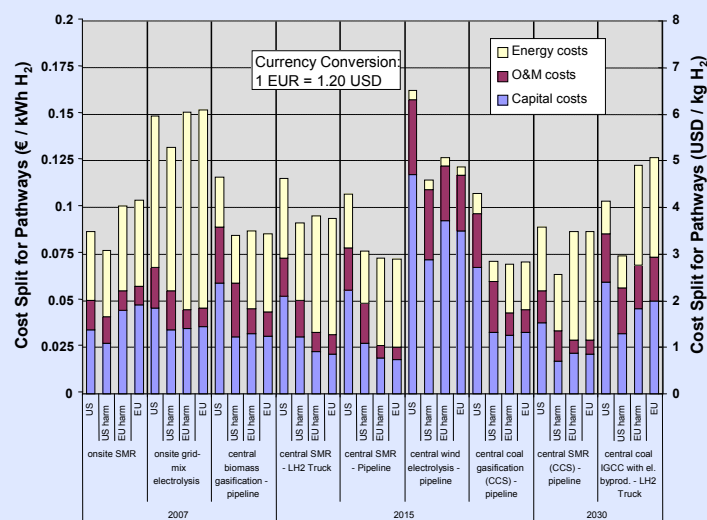
#### Models:

E<sup>3</sup> database

GREET

H2A Production

HDSAM



- 9 representative Well-To-Tank pathways compared (electrolysis, SMR, CTH; onsite/central, pipeline, trucked-in LH<sub>2</sub>)
- Costs calculated using original and harmonised financial approach
- Original energy use and GHG emissions compared
- Key results:
  - Generally, results are similar
  - Some significant techno-economic differences (e.g. biomass gasification efficiency, pipeline configuration)
  - Different modelling philosophies for economic analysis (micro- vs. macro-economic)
  - Regional differences visible (fuel economy, taxes)

**Current status:** Report preparation; reports available on [www.hyways-iphe.org](http://www.hyways-iphe.org) by November 2007

### WP 3: Expansion of bilateral EU-U.S. benchmarking

- Infrastructure models (objectives, philosophy, results)
- Stakeholder involvement and organisation
- H<sub>2</sub> vehicle costs and costs targets
- Probabilistic analysis of pathways
- Energy price projections
- Economic impacts of hydrogen on GDP/Employment

**Current status:** Ongoing, to be finished early 2008

### WP 4: HyWays-IPHE liaison

- Workshops in other IPHE countries (e.g. China, India, Australia)
- Disseminate jointly developed understanding
- Collect feedback from experts
- Further institutional & personal exchange under the patronage of IPHE

**Current status:** Not started (Jan-Oct 2008)

For more information, please visit

<http://www.hyways-iphe.org/>

