

Wrap-up and Next Steps

P. Garibaldi
S. Malysenko
M. Steen
S. Satyapal

International Partnership for the Hydrogen Economy (IPHE)

"...To serve as a mechanism to organize and implement effective, efficient, and focused international research, development, demonstration and commercial utilization activities related to hydrogen and fuel cell technologies..."



Russian Federation



USA



Canada



Iceland



Japan



South Korea



China



India

IPHE Partners' Economy:

- Over \$35 Trillion in GDP, 85% of world GDP
- Nearly 3.5 billion people
- Over 75% of electricity used worldwide
- > 2/3 of CO₂ emissions & energy consumption

United Kingdom



France



Germany



Italy



IPHE Vision:

"... consumers will have the practical option of purchasing a competitively priced hydrogen power vehicle, and be able to refuel it near their homes and places of work, by 2020."

- Secretary Abraham, April 2003



Australia



Brazil



Norway



European Commission



Facilitating function for IPHE-ILC

- provide a forum for information exchange and discussing collaboration, from where recommendations can be forwarded to policy- and decision makers of IPHE members.
- identify scope of R&D activities which can benefit from IPHE collaboration
 - *IPHE Scoping Papers*
- act as a catalyst for cooperation and for facilitating harmonisation of activities by IPHE members related to topics identified in Scoping Papers and in IPHE events
 - *organise workshops/ conferences*
 - *define and agree on "IPHE" project qualifiers*
 - *Set up project evaluation team - compliance + content check*
 - *feed evaluation results to Steering Committee*

Reminder/Clarification

IPHE projects leverage existing funds from IPHE countries

- No new pot of money just for IPHE
- Funding mechanisms different for each country,
- Explore any existing agreements (bi-lateral, multi-lateral, other)

IPHE projects focus on *pre-competitive* collaborative research, development and demonstration activities

Conference Summary and Next Steps

This International Conference, **the first of IPHE**, is the first step in designing and developing IPHE international collaborations.

Objectives

1. Overview of current state of the art and most recent technical progress in hydrogen storage from experts in the field
2. Identify key barriers, areas for potential collaboration
3. Network and explore collaborations
4. *Provide recommendations to the IPHE Steering and Implementing and Liaison Committee on possible activities related to the above*

What are the next steps...

Preparation of an IPHE proposal

- Check scoping papers and other IPHE documents: www.iphe.net (**storage**, fuel cells, production, regulations, codes & standards, socio-economics)
- Continue discussion of potential collaborations
- Submit proposals through www.iphe.net website at latest by Sept 1, 2005

Optional:

Submit draft proposals (see guidelines) to conference co-chairs by **July 10, 2005**

Informal feedback from co-chairs before submission

Criteria to consider when submitting proposals

- Are two or more IPHE members effectively collaborating?
- Is the proposal relevant for IPHE? (see scoping paper)
- Is there added value from the collaboration?
 - *does the project complement existing efforts (not duplicate)?*
 - *does the project/collaboration widen the scope of work?*
 - *does it accelerate progress towards results?*
 - *other value added?*
- Examples of Commitment towards Project and Collaboration:
 - *are objectives, strategic plan and annual work programs in place?*
 - *are the partners' resources clearly identified and financial sources granted? (if in process, need to explicitly state)*
- Will majority of results be non-proprietary and clearly identified and is there a plan for disseminating information (to all IPHE country members and beyond)

Template for Proposal Content

- Project Title
- Description
- Goal
- Location
- Partners
- Timeframe
- Challenges/Barriers
- Contact Info

Maximum of 3 pages

See: www.iphe.net

Areas of interest for potential collaboration

From IPHE Hydrogen Storage Scoping Paper

- Materials-based systems that are truly reversible on-board, such as metal hydrides, high surface area sorbents and carbon, and
- Chemical hydrogen storage systems, such as chemical hydrides, which must be regenerated off-board.
- Standardized testing of materials and systems for hydrogen storage capacities, including standardization of units of measure, and
- Systems analyses which includes life cycle, efficiency, safety and environmental impact analyses

Other topics as a result of this conference

- Borohydride Production Using Geothermal Energy and Integration of Chemical Hydrogen Storage Technology in Iceland's Hydrogen Infrastructure

*Contact: Ying Wu, Millennium Cell, wu@millenniumcell.com, 732 544-5711
Jon Bjorn Skulason, INE, skulason@newenergy.is, 354 588 0310*

- Lithium-based Complexes for Hydrogen Storage

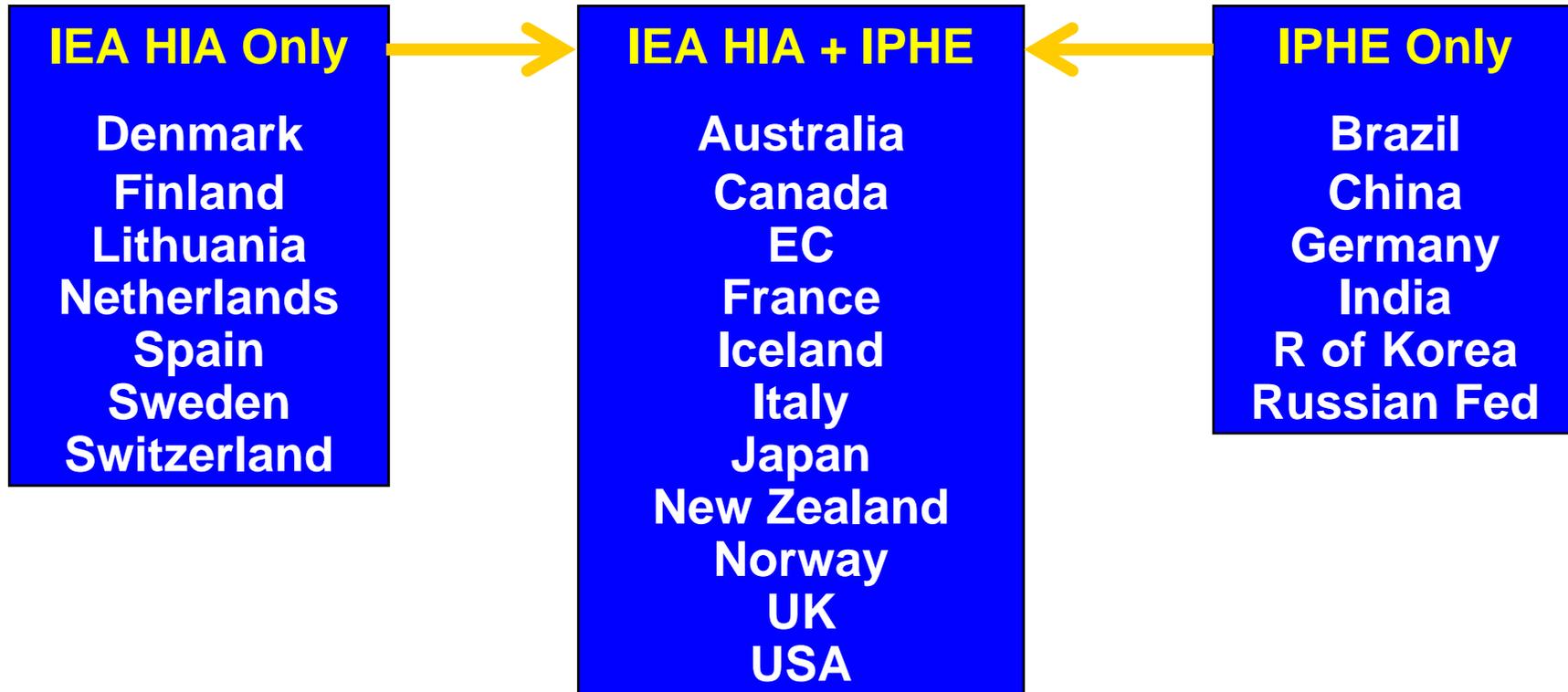
Contact: Evan Gray, Griffith Univ, e.gray@griffith.edu.au, 61 7 3875 7240

- Reversible Solid State Hydrogen Storage for Fuel Cell Power Supply System

Contact: Vasily Borzenko et al, RAS, litp@dataforce.net, 7 (095)362 5311

To be submitted

- NESSHY (Novel & Efficient Solid Storage for Hydrogen)-
solid state materials
 - Under negotiation (EC contribution €7.5M)
 - *Contact: J. Martin-Bermejo (joaquin.martin-bermejo@cec.eu.int)*



Good idea - to be followed up at IPHE ILC meeting in October, 2005 and SC in Spring, 2006 and ExCo meetings, 2006

Thank you for your participation

Contact information

P. Garibaldi, pierpaolo.garibaldi@tiscali.it

S. Malyshenko, litp@dataforce.net

M. Steen, marc.steen@cec.eu.int

S. Satyapal, sunita.satyapal@ee.doe.gov