



International Partnership *for the* Hydrogen Economy



# IPHE Stakeholder Briefing



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## What is IPHE?

- IPHE is an organization composed of 17 members: 16 nations plus the European Commission
- **Goal:** Efficiently organize and coordinate multinational research, development and deployment programs that advance the transition to a global hydrogen economy.
- **Members have been chosen on the basis of:**
  - substantial, long-term resource commitments to hydrogen and fuel cell technology research and development activities;
  - a well-defined vision and national strategy to advance technology deployment and infrastructure development;
  - and a commitment reflected in policies and strategies that effectively advance private sector development of a hydrogen economy.



## IPHE Partners



Russian Federation



USA



Canada



Iceland



### 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 CO<sub>2</sub> emissions and energy consumption



Japan



Republic of Korea



China



India

United Kingdom



France



Germany



Italy



Australia



Brazil



Norway



European Commission



New Zealand





## **IPHE Structure**

- **IPHE is structured to focus on two levels**
  - **A strategic level, embodied by a Steering Committee (SC)**
    - **The SC is chaired by the U.S. (Under Secretary of Energy David Garman and Assistant Secretary of Transportation Tyler Duvall)**
  - **An implementation level, embodied by the Implementation-Liaison Committee (ILC)**
    - **The ILC is co-chaired by Germany and Iceland (Dr. Hanns-Joachim Neef and Prof. Thorsteinn Sigfusson)**
- **The committees are supported by a Secretariat**
  - **U.S. Dept. of Energy houses Secretariat**
    - **Graham Pugh, Exec. Director; Mike Mills, Assoc. Director; contract support**



# IPHE Structure

- **Steering Committee**
  - Governs the overall framework, policies and procedures of the IPHE
  - Periodically reviews the program of collaborative activities
  - Provides direction to the Secretariat
  
- **Implementation – Liaison Committee**
  - Coordinates collaborative projects
  - Identifies promising directions for R,D,&D, and commercial use
  - Maintain communications with the private sector and other stakeholders.
  
- **Secretariat**
  - Coordinates communications with regard to IPHE activities
  - Organizes meetings for the IPHE, its committees and subgroups
  - Acts as a clearinghouse of information for the IPHE.



# Steering Committee Accomplishments

- Identified Codes and Standards work as an IPHE priority
- Identified means for stakeholder participation (Liaison Group of Stakeholder Organizations)
- Directed ILC to hold international workshops on selected topics
- Endorsed the first 10 IPHE collaborative projects
- Approved creation of the IPHE Priority Scorecard and Activities Matrix
- Approved the IPHE Awards Program – an annual Special Recognition award for an individual and an annual Technical Award for an individual/organization/institution



## **ILC Accomplishments**

- Publication of Scoping Papers on high priority activities
  - Hydrogen production, storage, fuel cells, codes and standards, socio-economics
- Established working groups
  - Codes and Standards; Education; Demonstration
- Created World Atlas on Hydrogen and Fuel Cell Demonstration Projects (on website)
- Conducted international technical workshops on high priority topics



## **IPHE Workshops**

- **Joint IEA-IPHE SOFC Fuel Cell Workshop - May 2005**  
**Quebec City, Canada**
- **Joint IEA-IPHE PEM Fuel Cell Workshop - June 2005**  
**Mol, Belgium**
- **IPHE International Conference on Hydrogen Storage -**  
**June 2005 - Lucca, Italy**
- **IPHE Socio-Economic Workshop - June 2005**  
**- Paris, France**
- **International Conference on Hydrogen Safety -**  
**September 2005 - Pisa, Italy**
- **Hydrogen from Renewable Energy Sources – October**  
**2005 - Seville, Spain**



## **IPHE Endorsed Projects**

- **ILC created a Project Evaluation Team to evaluate IPHE project proposals**
  - **IPHE endorsement of high value collaborative activities**
  
- **Project Working Principles**
  - **Supported by more than one IPHE member**
  - **Funding source already established**
  - **National environmental, safety, and health concerns addressed**
  - **Project partners willing to share non-proprietary project information with other IPHE Members**



## **IPHE Endorsed Projects**

- **First 10 IPHE endorsed projects approved:**
  - ❖ Preparing For The Hydrogen Economy By Using The Existing Natural Gas System As A Catalyst
  - ❖ Solar Driven High Temperature Thermochemical Production Of Hydrogen
  - ❖ Reversible Solid State Hydrogen Storage For Fuel Cell Power Supply System
  - ❖ Advanced Membranes
  - ❖ Fuel Cell Testing, Safety And Quality Assurance (FCTESTQA)



## **IPHE Endorsed Projects, Cont'd**

- ❖ Application Of Gradient Porous Composite MEAs For Different Types Of Fuel Cells
- ❖ HyWays - The Development And Detailed Evaluation Of A Harmonised "European Hydrogen Energy Roadmap"
- ❖ HySafe - Safety Of Hydrogen As An Energy Carrier
- ❖ Solar Hydrogen From Reforming Of Methane
- ❖ Clean Urban Transport for Europe (CUTE), Ecological City Transport System (ECTOS), Sustainable Transport Energy for Perth (STEP)



## **Outreach & Education**

- **IPHE Representation at International Workshops**
  
- **IPHE Newsletter**
  - **First edition in September 2005**
  - **Second edition April 2006**
  
- **IPHE Endorsement of Events**
  - **If you are aware of events and are interested in endorsement, contact the Secretariat**



## Stakeholders

- Secretariat maintains a mailing list of over 1,000 names
  - Registration through website
  - Open to individuals from IPHE & Non-IPHE members
  - Receive IPHE announcements, newsletters, reports, etc.
- Liaison Group of Stakeholder Associations (LGSA)
  - Open to associations supporting IPHE goals
  - IPHE members recommend LGSA members to Secretariat
  - Secretariat establishes contact and creates link on IPHE website
  - LGSA members receive additional material, such as meeting announcements, and commit to circulate this to stakeholders



# Stakeholder Involvement Options

- The IPHE website:
  - Special section for stakeholders
  
- IPHE Ministerial, SC, and ILC Meetings:
  - Meetings are open to any who wish to attend
  - Stakeholders frequently give presentations on activities in line with theme of meeting
  - Some sessions expressly intended to facilitate an exchange of views and ideas on issues of substance where stakeholders could weigh in



## **IPHE and IEA Implementing Agreements**

- “Why do we need IPHE if the IEA Hydrogen and Fuel Cell IA’s are successful?”
  - IPHE view is that development of a successful hydrogen economy will depend on governments and industry as well as researchers
  - In the research area, IPHE wants to have a comprehensive view of global activities, including those outside of IEA
  - But, we have no desire to duplicate or exercise control over the excellent work done by the IAs
    - ❖ Our goal is to maintain links to them while avoiding duplication of resources



## Next Steps

- IPHE is developing a prioritized list of critical objectives for the hydrogen economy
  - Goal: To achieve consensus on common goals for hydrogen research, development, demonstration and deployment
- Workshop to prioritize these critical objectives - June 2006
- The critical objectives will be ranked according to a risk assessment score
  - The impact of failing to achieve a critical objective multiplied by the difficulty of achieving that objective
- Result: IPHE Priority Scorecard and Initial Activity Matrix



# Summary

- IPHE is making progress toward achieving its goal of “efficiently organizing and coordinating multinational research, development and deployment programs that advance the transition to a global hydrogen economy”
- Please feel free to contact the Secretariat for further information



# Contacts

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