



"...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..."

Launched Nov. 2003

International Partnership for the Hydrogen Economy (IPHE)



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 CO₂ emissions & energy consumption



Japan



South Korea



China



India

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



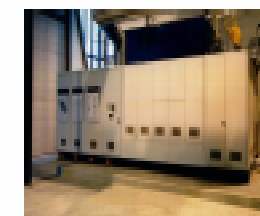
Brazil



Norway



European Commission



12

<http://www.iphe.net>



IPHE "Structure"

Steering Committee

Implementation & Liaison Committee

Scoping Papers:

Hydrogen Production

Hydrogen Storage

Fuel Cells

Regulations, Codes and Standards

Socio-economics

Drafting by IPHE "Points of Contact"



International Partnership
for the Hydrogen Economy

Implementation-Liaison Committee

Scoping Papers

Table of Contents

Executive Summary	Page 1
Hydrogen Production	Page 6
Hydrogen Storage	Page 12
Collaborative Fuel Cell R&D	Page 17
Regulations, Codes and Standards	Page 25
Socio-Economics of Hydrogen	Page 34



Structure of RCS Scoping Paper

- Introduction
- Basic Considerations guiding IPHE involvement in RCS
 1. Provide added value: **identify gaps, provide forum for facilitating progress towards RCS and safety protocols**
 2. IPHE no funding, nor mandate for drafting standards and regulations
 3. Forum for discussing issues and forwarding recommendations to policy- and decision makers
 4. **Catalyst for cooperation and facilitator of harmonisation** of RCS activities - not prescriptive in *how?*, but in *what?* and *by when?*
 5. Implementation through existing mechanisms and instruments



Regulations, Codes and Standards	
Australia	John Henry
Brazil	Sergio Pinheiro de Oliveira
Canada	Ian MacIntyre
Germany	Franck Gröschl Christoph Albus
Iceland	Agust Agustsson Tryggvi Axelsson
Italy	Romano Borchiellini
Japan	Kazuo Koseki Kazuyuki Narusawa
Norway	Ståle Selmer-Olsen
Republic of Korea	Sung Ho Shin
United States	Pat Davis Duane Pfund
European Commission	Marc Steen (lead author)

Missing: China, France, India, Russia, United Kingdom



Nature of possible IPHE work

Main focus: **pre-normative and pre-regulation research** issues

Types of activity:

- defining and prioritising needs
- identifying complementarity in ongoing activities of IPHE members
- setting scope for cooperation
- sharing and discussing research results
- identifying channels and bodies for exploitation of research results and further development of RCS
- exploiting lessons learned from demonstration projects

Preferred tool: IPHE workshops



Classification of proposed areas for collaboration under IPHE

Mobile applications: road vehicles, other

Stationary applications

- hydrogen vs. electricity
- variety of size, technology, specific application requirements
- supply, transport, distribution, storage

energy-policy drivers: supply
security, climate change -
long term perspective

Portable applications

commercial drivers, shorter-term

Safety considerations

public concern, perception and
acceptance



short term action recommendations

- agreed common definitions, terminology and nomenclature for standardisation and regulatory terms, including terms which are specific to certain IPHE members (e.g. directives, self-certification, etc.)
- "meta gap analysis" by IPHE members + proposal for priority action - *Dec. 2006*
- information paper describing the different approaches between IPHE members towards approval processes for market access of vehicles and of stationary equipment (including aspects of GTR development) - *Feb. 2006*
- proposal for structuring cooperation/complementary activities in safety topics: compiling/sharing presently available results, definition of scenarios for computational modelling, alternative modelling methods and their validation, experimental and crash testing, ... - *International Workshop safety modelling Fall 2005*



Joint Research Centre

ICHS, Pisa (I), September 8-10, 2005



The EU NoE

"Safety of Hydrogen as an Energy Carrier"

invites you to the:

ICHS

International Conference on Hydrogen Safety

September 8-10, 2005

Congress Palace

Pisa, Italy

3rd Call for Papers

ICHS, Pisa (I), September 8-10, 2005

In Association with:



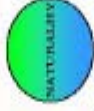
Development of Safe Utilization and Infrastructure
 of Hydrogen - NETO Project - JAPAN



CUTE EU PROJECT



**International Partnership
 for the Hydrogen Economy**



NATURALHY EU PROJECT



**STORHY
 EU PROJECT**



ITALIAN NATIONAL FIRECORPS

With the Collaboration of:



**INTERNATIONAL ASSOCIATION FOR
 HYDROGEN ENERGY**