

INTERNATIONAL COOPERATION FOR THE HYDROGEN ECONOMY DEVELOPMENT

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Introduction

The gap between existing prices and capacities for hydrogen production, storage and utilization and those needed to secure hydrogen energy competitiveness is enormous.

Thus, the efforts on national and international levels should be joined for the above problem solving. The United States, Japan and EU countries are the most active in developing the hydrogen technologies.

The big countries as Canada, Italy and UK have the advanced hydrogen programs as well. Recently, the extensive programs of the hydrogen technologies development have been worked out and started in China and Russia.

In Ukraine R&D in hydrogen and fuel cells technologies have been conducted mainly at the NANU institutes. No one state or departmental special H₂ program have been developed and executed for this time in Ukraine.

National Hydrogen Associations

The National Hydrogen Associations have been launched in 11 countries of the World. The main objective of these associations is to promote the technological development of the hydrogen energy and its use in industrial and commercial applications, for the whole society interest, to avoid the environmental impact and enhance the industrial improvement foreseen as well to exchange information among their members on hydrogen technologies and fuel cell RD & D (Research, Development and Deployment) aiming at the introduction and penetration of hydrogen and fuel cells in the market.

The work of these Associations is financed by means of membership fees and contributions. Some associations have international membership.

List of the H₂ National Associations:

American Hydrogen Association (AHA), [1]
Canadian Hydrogen Association (CHA), [2]
L'Association Française de l'Hydrogène, (AFH₂), [3]
Norwegian Hydrogen Forum, (NHF), [4]
Italian Hydrogen and Fuel Cell Association, (H₂IT), [5]
German Hydrogen and Fuel Cell Association (DWV), [6]

JAPAN Fuel Cell Development Information Center, [7]

Sweden, H₂ Forum, [8]

The Spanish Hydrogen Association, (AEH₂), [9]

China, CAHE, [10]

UK Renewable Power Association, [11]

European Organizations

1. European Hydrogen Association, (EHA), [12] is located in Brussels, Belgium.

The missions of the Association are defined as follows:

- Collect relevant information and circulate it between members (scientific, economical and technical, laws and regulations, requests for proposals, events, etc.). Encourage exchanges and joint actions between members.

- Interface with national and international organizations, including with the European Parliament and the European Commission, and with public bodies in Europe, especially in the area of laws, standards and regulations.

- Promote cooperation between its members and with similar associations in the rest of the world, the creation of national hydrogen associations in European countries where such associations do not exist.

- Identify and maintain a list of experts belonging to member companies and/or organizations that the Association will advertise and propose to appropriate organizations in Europe and in the rest of the world. Encourage the setting-up of technical projects that can facilitate the use of hydrogen or solve critical issues.

EHA Membership List: Associations of France, Germany, Sweden, Norway, Italy, Spain.

Sustaining members: Shell Hydrogen B.V. (The Netherlands), Air Products (UK), Air Liquide (France), Hydro (Norway), EHN Combustibles Renovables (Spain), BOC (UK).

2. European Hydrogen and Fuel Cell Technology Platform, (HFP technology platform), [13]

The technology platform and all its activities should contribute to an integrated

strategy to accelerate the realisation of a sustainable hydrogen economy in Europe, a concept endorsed by the European Commission on September 10, 2003.

International Organizations

1. International Association for Hydrogen Energy (IAHE), [14]

is located in FL, USA, The Association has an official scientific journal, International Journal of Hydrogen Energy, published monthly by Elsevier Science; organises biennial World Hydrogen Energy Conferences - including exhibitions - around the world, publishes the proceedings of these conferences as the Hydrogen Progress volumes; and maintains and updates this Internet site.

2. Partnership for Advancing the Transition to Hydrogen (PATH), [15],

was established in 2002 and is located in Wash, DC, US. The PATH, which mitigates climate change and leads to sustainable energy systems available for all, is over the Hydrogen Bridge from fossil feedstocks to renewable production.

Current Members of PATH:

Canadian Hydrogen Association, Hydrogen Energy Systems Society of Japan, American Hydrogen Association

3. International Energy Agency (IEA), [16]

is a forum for co-ordinating the energy policies of 26 industrialised countries. The IEA addresses all types of energy sources. The Nuclear Energy Agency (NEA) specialises in nuclear-related issues and brings together 28 OECD Member countries. Through its Hydrogen Program the IEA supports more than 40 international Agreements (*Technology Agreements*), [17], on cooperation in development of new energy technologies, stress the information exchange.

4. World Energy Network Hydrogen Research Organization, (WE-NET), [18]

WE-NET countries -participants:

USA, Switzerland, Japan, Norway, Korea, Canada, Saudi Arabia.

Research field List: Liquefied hydrogen, Fuel cell, Hydrogen absorbing alloy, Solar system and hydrogen:

5. Organization for cooperation and development, OECD, [19]

that unites 22 countries of the World, promotes ideas of hydrogen and fuel cells technologies commercialization as a key way for energy security and environment safety.

6. International Partnership for the Hydrogen Economy, (IPHE), [20]

The International Partnership for the Hydrogen Economy was established in 2003 as an international institution to accelerate the transition to a hydrogen economy. The IPHE consists of 13 Partnering countries- members.

Information resources

1. HyWeb, [20]

The European Commission supports the Hydrogen and Fuel Cell Projects Database. All Hydrogen and Fuel Cell Projects in Europe may be entered, also those with national or private funding!

No of projects included: 618

2. Hydrogenguide, [21].

Resume

It is necessary to work out a special H₂ Program of NANU. Further, it should be made over into a National H₂ Program with broad participation in respective international and national organizations and programs.

Cited web-sites

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- [6] www.dwv-info.de
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- [8] www.h2forum.org
- [9] ach2.org
- [10] hydrogen.newenergy.org.ch
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- [14] www.iahe.org
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