

Framework for the International Partnership for the Hydrogen Economy

“The vision of the International Partnership for the Hydrogen Economy is that a participating country’s 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 of Energy Spencer Abraham, International Energy Agency Ministerial Meeting, Paris, France, April 28, 2003

Background: A growing number of countries have committed to accelerate the development of hydrogen and fuel cell technologies to improve their energy, environmental and economic security. The energy needed to produce hydrogen can be obtained from many sources, including fossil fuels. When combined with carbon capture and storage, hydrogen production holds the promise of a plentiful fuel that will help safeguard the world’s climate system. The United States, the European Union, Japan, Australia, Canada, Iceland, Italy, and the UK have recently made substantial commitments to hydrogen and fuel cell technology research, development and deployment activities. China has organized a program to build and operate fuel cell vehicles. India has initiated work on a hydrogen energy technology roadmap.

Many countries share a common interest in pre-competitive research and development cooperation that will support the future deployment of hydrogen and fuel cell technologies. Building a safe, efficient and economical world-wide infrastructure for hydrogen production, storage, transport, distribution and use is a challenge that will require the best planning and expertise from around the world. International cooperation will also help countries to more efficiently achieve national hydrogen and fuel cell technology program goals for both transportation systems and stationary applications. Existing bilateral and multilateral relationships provide a foundation on which to build a robust, well-financed and agile international *Partnership*. U.S. Secretary of Energy Spencer Abraham called for such a partnership at the International Energy Agency Ministerial, April 28, 2003, Paris, France.

The *International Partnership for the Hydrogen Economy*: The *Partnership* will provide a mechanism to organize, evaluate and coordinate multinational research, development and deployment programs that advance the transition to a global hydrogen economy. The *Partnership* will: leverage limited resources; bring together the world’s best intellectual skills and talents to solve difficult problems; and develop interoperable technology standards. It should foster public-private collaboration that addresses the technological, financial and institutional barriers to a cost-competitive, standardized, widely accessible, safe and environmentally benign hydrogen economy.

The *Partnership* will initially review actions being pursued jointly by participating countries and identify additional actions to advance research, development and deployment of hydrogen production, storage, transport and distribution technologies; fuel cell technologies; common codes and standards for hydrogen fuel utilization; and

coordination of international efforts to develop a global hydrogen economy. At a minimum, the Partnership will be a means for:

- Bringing together senior-level policy leaders and technical experts at frequent intervals;
- Developing policy and technical guidance to advance hydrogen and fuel cell technology development and deployment;
- Fostering large-scale, long-term public-private cooperation to advance hydrogen and fuel cell technology and infrastructure development;
- Producing reports that advance development of the hydrogen economy;
- Aligning and leveraging resources to advance bilateral and multilateral cooperation in hydrogen and fuel cell technology research, development and deployment;
- Analyzing and setting priorities for research, development and deployment and ensuring support for the most promising and beneficial activities;
- Addressing emerging technical, financial and policy issues and opportunities related to hydrogen and fuel cell technology that are not currently being addressed elsewhere.

Existing bilateral hydrogen and fuel cell technology research and development cooperation will continue to be a central tool in advancing towards the hydrogen economy. The Partnership will complement and build on existing bilateral and multilateral relationships, helping to focus strategically on resources, technology, and emerging policies that will enhance and stimulate even greater movement toward the hydrogen economy.

Partner Characteristics: The United States will focus on counterparts that have: 1) substantial, long-term resource commitments to hydrogen and fuel cell technology research and development activities, 2) a well-defined vision and national strategy to advance technology deployment and infrastructure development, and 3) a commitment reflected in policies and strategies that effectively advance private sector development of a hydrogen economy.

Partnership Goal: To provide a mechanism to efficiently organize, evaluate and coordinate multinational research, development and deployment programs that advance the transition to a global hydrogen economy.

Characteristics of Success: By 2020, the production of hydrogen at a cost that makes it the fuel of choice for transportation needs, enabling consumers in participating countries to purchase a competitively priced hydrogen-powered vehicle and be able to refuel it near their homes and places of work, while also meeting other energy needs.

The *International Partnership for the Hydrogen Economy* will be successful when the following factors characterize the world's transportation sector:

- Hydrogen-powered vehicles are competitive with conventional vehicles.

- The price and availability of hydrogen are competitive with conventional fuels.
- Hydrogen fuel is conveniently available to hydrogen vehicle drivers, based on improved fueling and storage infrastructure.
- Hydrogen energy storage technologies will allow personal transportation systems to operate at the same levels of safety, performance and range as today's gasoline powered vehicles.
- An internationally consistent system of safety codes and standards related to hydrogen utilization is developed and adopted.

Next Steps: The United States will consult with potential partners to consider modalities (structure, specific goals and modes of operation) for the Partnership. In November of 2003, the United States will host a meeting of interested countries to agree on final modalities and initiate concrete steps in structuring and implementing the Partnership.