



## Conference Speakers' Advisory

### H2PS: The 2009 Hydrogen Production & Storage Forum

*Accelerating the Implementation of Hydrogen through the Improvement of Production and Storage Technologies, Infrastructure and Public Awareness*

**Date & location:** September 30- October 2, 2009 – Washington DC – Marriott Washington

**Organized by:** IntertechPira in conjunction with the National Hydrogen Association

**Conference objective:**

*H<sub>2</sub>PS 2009* is an opportunity for developers, producers, and users to discuss the viability and commercial potential of near-term technologies for producing and storing hydrogen, both on a large and a small scale. Speakers and session leaders will provide a close look at the market, addressing economic and technical constraints and stimulants for each production or storage method. Discussions will also address technical and commercial hurdles, the cost of implementing a new infrastructure, market and consumer acceptance issues, and the timetable of events necessary to transition to a Hydrogen Economy. Conference participants will get an up-to-date assessment of the latest hydrogen storage and production methods, while having an opportunity to network and discuss current developments and issues in a relaxed, open-forum format.

**Industry overview:**

Two factors determine the market success of new technologies: price and performance. A product incorporating new technology may gain significant market share if it is cheaper than mainstream products or, if it has a higher price tag, there is a clear benefit and improved quality over other available products. The case for hydrogen is no different. In order for hydrogen to achieve significant market penetration and widespread acceptance, it must be more efficient, equally convenient, and cheaper than gasoline.

With the recent escalation of gas prices and global instability, the public may be more willing to support an alternative energy source, even one that may cost more initially. Where Europe and Asia have been pursuing environmentally friendly energy alternatives for years, the US has consistently moved in the opposite direction: toward larger vehicles that consume more gallons per mile than ever before. This trend may finally be changing as the side effects of gasoline - dependency on foreign oil, global warming, urban pollution, and acid rain—

become more and more apparent. The hydrogen market is getting stronger as the refining industry gears up to meet upcoming regulatory requirements in Europe, North America and other regions. In the longer term, hydrogen consumption should grow in Europe as refineries use the gas to reduce their production of heavy fuel oil. In North America, additional hydrogen demand is expected in conjunction with the use of heavier crudes that require incremental hydrotreating and hydrocracking capacity. The increased outsourcing of hydrogen supplies and the replacement of hydrogen production facilities in North America are also expected to encourage market growth.

Maturing global efforts for a wholesale conversion to hydrogen reflect a growing awareness of the many efficient, environmentally sound, and lower cost methods available today to produce and store hydrogen. This conference will provide a close look at the most viable technologies and systems, and assess what is required to meet these objectives.

### **Conference participants:**

This will be IntertechPira's fifteenth international fuels conference, with 120 executives expected to attend. The conference is designed for business development managers, R&D specialists, technology planners, financial officers, venture capitalists, and investors in the energy production, transmission, conversion, and distribution industries. In addition, anyone connected with applications where hydrogen will play a key role, such as transportation, electric power generation and mobile battery-powered devices such as laptop computers and cell phones, would benefit from attending.

The conference will feature 20 speakers on September 30 and October 1. Each presentation will be twenty-five minutes in length, followed by five to ten minutes of questions and discussion. One three-hour pre-conference seminar will be held on September 29. There will also be several sponsored social functions and an area for exhibits showcasing new hydrogen generation and storage technologies.

### **Conference sessions:**

The sessions at **H2PS 2009** will offer a detailed perspective on key market and technical trends as well as case studies and applications in the areas listed below:

#### **1. Industry overview and market potential**

- Market development hurdles
- Market entry strategies
- Market size (2009-2015)
- Regional differences in hydrogen development support
- Hydrogen in North America, Europe and Asia, including China, India and Japan
- Governmental support in the US and elsewhere
- Public education
- Consumer study groups
- Case studies
- Environmental impact
- CO<sub>2</sub> capture and mitigation issues
- Intellectual property protection
- International government cooperation
- Life cycle analysis of engine/fuel systems

## **2. Production Methods**

- Electrolysis
- Reforming, partial oxidation
- Photosynthesis
- Thermochemical cycles
- Biomass
- Renewables (solar, wind, geothermal)
- Small-scale generators
- Distributed versus centralized production
- Purification

## **3. Hydrogen Storage**

- High-pressure storage
- Micro canisters
- Metal hydrides
- Chemical hydrides
- Nanomaterials
- Separation methods, membranes
- Storage in industrial (mid-range) stationary power systems
- H<sub>2</sub> compression

## **4. Transportation and Infrastructure**

- Shipping and transportation possibilities
- Infrastructure – fueling stations and other
- Safety and training
- Pipeline operation and costs