



U.S. DEPARTMENT OF
ENERGY

HELP Meeting

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Hydrogen, Fuel Cells and Infrastructure
Technologies Program

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Permitting Tools Workshop

(CARB, Sacramento, Feb. 1, 2007)

- Invited fire/building code officials, HFS developers from states where HFS located or likely to be located
- Perspectives of HFS developers and code officials on permitting experience (case studies)
 - Shared lessons learned
 - Shell Benning Road HFS (Washington, DC, Office of Fire Marshall)
 - NextEnergy energy station (Michigan Dept. Environmental Quality)
 - Chevron AC Transit HFS (Oakland Fire Prevention Bureau)
- Key issues and barriers to timely and cost-effective permitting of HFS identified
- Recommendations to DOE on how it can facilitate permitting process for HFS
- Feedback on proposed DOE initiative
- Proceedings/presentations posted on NHA website (www.hydrogenandfuelcellsafety.info)



Compendium of Permitting Tools for Hydrogen Fueling Stations

- Information Repository
 - Fact sheet(s)
 - Basic information on hydrogen fueling stations (examples, codes/standards typically used, information sources)
 - Network chart
 - Contact list of code officials whose jurisdictions have issued permits for hydrogen fueling stations
 - Flowchart of permitting requirements
 - Web-based map to navigate requirements
 - Database of key standards and codes
 - Hydrogen fueling station permitting information repository
 - Web-based information and database of code and standards requirements
 - Case studies of hydrogen fueling stations
- Education/outreach
 - Workshops for code officials (nationally and regionally)
 - Web-based training



Compendium – Case Study Activity: A collaboration with NASFM

Goal: To compile case studies of hydrogen fueling stations (HFS) that have been vetted by the building code and fire safety community

Provides a reference for local code officials to consult.

- Collaboration with NASFM, NCBCS, and energy suppliers to identify hydrogen fueling station layouts/designs (5 chosen to date by subcommittee of code officials and energy company representatives)
- Identify all applicable codes and standards for hydrogen fueling stations
- Gain consensus of code officials on identified fueling station designs
- Timeline:

Event	Purpose	Date and Location
Workshop at NASFM July Meeting	<ul style="list-style-type: none">• Involve key building and fire code officials• Present and discuss case studies• Demonstrate web-based information repository prototype	Atlanta July 10, 2007
Workshop at NCBCS annual conference	<ul style="list-style-type: none">• Similar purpose, agenda, format as workshop at NASFM conference	Fall 2007
Publication of case studies	<ul style="list-style-type: none">• Provide building code and fire safety officials with existing examples of approved hydrogen refueling stations and the codes and standards applied	December 2007



Related Education Activities: First Responders

• Introduction to Hydrogen Safety for First Responders

- 7-module, web-based basics course (includes quiz and video, animations, graphics for visual audience)
- Print and CD versions available for free from DOE Information Center
- Development included broad review involving hydrogen industry and emergency response community
- Averaged 200 unique users/week since course launch in Jan 2007
- Positive feedback from emergency response community – users include fire fighters, fire department training coordinators, fire marshals, fire plans inspectors/examiners, law enforcement personnel, industry, military, others

6/7/2007

www.hydrogen.energy.gov/firstresponders

A "Cliffs Notes" poster is available for fire houses, free from the DOE Information Center



For More Information

www.hydrogen.energy.gov

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The screenshot shows the homepage of the Hydrogen Program website. At the top, it features the U.S. Department of Energy logo and the text "hydrogen.energy.gov". A navigation menu includes links for Home, About, DOE Participants, International, Library, and News/Events. A search bar is located in the top right corner. The main content area is divided into several sections:

- INCREASE YOUR H₂ IQ**: A section with a large H₂ logo.
- Announcement**: "Peer Evaluation Report Focuses on Merit of DOE Hydrogen and Fuel Cell Projects".
- News**: "Independent Review Panels Assess Progress Towards Technical Targets" (October 5, 2006) and "DOE Announces Hydrogen Funding Opportunity for Small Businesses" (September 27, 2006).
- DOE Loan Guarantee Program Promotes Innovative Technologies** (August 23, 2006).

On the right side, there are additional features:

- DOE Hydrogen Program**: A section with an H₂ logo.
- Features**: "President's Hydrogen Fuel Initiative" with a photo of a man.
- ADVANCED ENERGY INITIATIVE**: A banner with a lightning bolt graphic.
- Hydrogen.gov**: A section with a green and white striped background.
- FreedomCAR & Fuel Partnership**: A logo with a star and the text "Information on Financial Opportunities".

A sidebar on the left lists various topics under a "Hydrogen Program" heading:

- > Hydrogen Production
- > Hydrogen Delivery
- > Hydrogen Storage
- > Hydrogen Manufacturing
- > Conversion / Fuel Cells
- > Applications / Technology Validation
- > Safety
- > Codes & Standards
- > Education
- > Basic Research
- > Systems Analysis
- > Systems Integration