## WORKSHOP AGENDA

U. S. Department of Transportation and U.S. Department of Energy

# Compressed Natural Gas and Hydrogen Fuels: Lessons Learned for the Safe Deployment of Vehicles

December 10-11, 2009 - Washington, DC

A workshop to promote exchange of information among experts on compressed natural gas and hydrogen fuels for vehicles and to share lessons learned from deployment of these vehicles in public transit, fleets, and consumer transportation throughout the world.

## **Workshop Objectives:**

- To coordinate lessons learned by identifying similarities and critical differences between compressed natural
  gas and hydrogen properties, including CNG-H2 blends, and their industries and applications (e.g., product
  specifications, tanks, reliability, safety procedures, risk mitigation, and dispensing)
- Identify additional research to ensure safe use of onboard and bulk storage hydrogen and compressed natural gas tanks
- Enhance domestic and international harmonization between natural gas and hydrogen codes and standards requirements
- Collect feedback from demonstration activities and real-world applications
- Identify future workshops, briefings, educational and communication strategies, as well as collaboration opportunities

## **Location:**

Courtyard Washington Capitol Hill/Navy Yard

140 L Street SE

Washington, District Of Columbia 20003 USA

Phone: 1-202-479-0027 Fax: 1-202-479-6766

**Contacts:** 

DOE Contact: Antonio Ruiz (Antonio.Ruiz@ee.doe.gov)

Dennis Smith (<u>Dennis.Smith@ee.doe.gov</u>)

Monterey Gardiner (Monterey. Gardiner@ee.doe.gov)

**DOT Contact**: John Hinch (<u>John.Hinch@dot.gov</u>)

**DOE Consultant**: Jim Ohi (JimOhi@q.com)

**DOE Support Contact:** Michael Thompson <u>Michael Thompson 2@ee.doe.gov</u>)

Jillian McMichael (Jillian.McMichael@ee.doe.gov)

National Lab Contact: Steve Weiner (<u>SC.Weiner@pnl.gov</u>)

#### Webinar and Teleconference Information

**Teleconference Information: Day 1 – Webinar Information Phone Number:** 866.762.9101

Meeting Number: 016 284 994

**Passcode**: 72576 Meeting Password: h2 Host Key: 604992

#### **Webinar Information:**

1. Go to

https://vrtc.webex.com/vrtc/j.php?ED=3464008

2. Log in to your account.

3. Click "Start Now".

4. Follow the instructions that appear on your screen

**DAY 2 – Webinar Information** 

Meeting Number: 016 499 453

Meeting Password: H2 Host Key: 142822

Thursday – December 10, 2009	
08:30	WELCOME: Objectives and Expectations of Workshop Mr. John Maddox, Associate Administrator for Vehicle Safety Research, NHTSA US Department of Transportation (DOT)
	US Hydrogen Program Overview  Dr. Sunita Satyapal, Acting Program Manager, Hydrogen Program/Fuel Cell Technologies  US Department of Energy (DOE)
09:00	Keynote: CNG, H2, CNG-H2 Blend FuelsCritical Fuel Properties and Behavior Dr. Jay Keller, Sandia National Laboratories
09:30	Question and Answer
09:45	Safety and Regulatory Structure for CNG, CNG-H2, H2 Vehicles and Fuels in India Mr. Ambrish Mishra, Oil Industry Safety Directorate, Ministry of Petroleum and Natural Gas
10:15	Question and Answer
10:30	BREAK
10:45	Safety and Regulatory Structure for CNG, CNG-H2, H2 Vehicles and Fuels in China Professor Jinyang Zheng, Zhejiang University
11:15	Question and Answer
11:30	Safety and Regulatory Structure for CNG, CNG-H2, H2 Vehicles and Fuels in the U.S. <i>Ms. Barbara Hennessey</i> , US Department of Transportation
12:00	Question and Answer
12:15	LUNCH
13:15	Successful Adoption of CNG and Emerging CNG-H2 Program in India  Mr. Narendra Pal, Research Scholar, University of Nevada, Reno
13:45	Question and Answer
14:00	Lessons Learned from Practical Field Experience with High Pressure Gaseous Fuels  Mr. Douglas Horne, Clean Vehicle Education Foundation  Mr. Rob Adams, Marathon Technical Services
14:45	Question and Answer
15:00	Compressed Natural Gas and Hydrogen Tank Safety, R&D, and Testing Mr. Joe Wong, Manager, Clean Transportation Engineering, PowerTech
15:30	Question and Answer
15:45	BREAK
16:00	Panel Discussion: Current regulations, safety, lessons learned regarding CNG, H2, CNG-H2 vehicles and fuels  Previous speakers plus other representatives from India, China, US  Moderators:  Mr. Dennis Smith, US DOE  Mr. John Maddox, US DOT
16:45	Summary and Discussion of Day 1: Following up lessons learned Moderators:  Mr. Antonio Ruiz, US DOE  Mr. John Hinch, US DOT
17:00	Adjourn Day 1

Friday – December 11, 2009	
08:30	Welcome, Objectives of Day 2 Mr. Antonio Ruiz, US DOE
08:45	Keynote: Overview of Key Safety Issues and Concerns for Hydrogen Fuel  Mr. Dilip Chenoy, Director General, Society of Indian Automobile Manufacturers
09:30	Question and Answer
10:00	<b>Hydrogen Vehicles and Fueling Infrastructure in China</b> Professor Jinyang Zheng, Zhejiang University
10:30	Question and Answer
10:45	Hydrogen Vehicles and Fueling Infrastructure in India  Professor L. M. Das, Indian Institute of Technology
11:15	The Hydrogen Laboratory & The Brazilian Reference Center for Hydrogen Energy Mr. Jim Ohi, US DOE Consultant
11:30	Question and Answer
12:00	LUNCH
12:30	Hydrogen Vehicles and Fueling Infrastructure in the U.S.  Mr. John Garbak, US DOE
13:00	Question and Answer
13:15	Panel Discussion: Next Steps to Increase Collaboration on Technical Issues and Needs and to Harmonize Regulations, Codes and Standards Moderators:  Mr. Nha Nguyen, US DOT Dr. Jim Ohi, consultant, US DOE
14:15	Closing Remarks, Summary and Wrap-up of Workshop Mr. Antonio Ruiz, US DOE Mr. John Hinch, US DOT
14:30	Adjourn Workshop