

Transitioning the Transportation Sector: Exploring the Intersection of Hydrogen Fuel Cell and Natural Gas Vehicles

September 9, 2014

American Gas Association, 400 N. Capitol St., NW, Washington, DC 20001

Organized in partnership by:

Sandia National Laboratories, AGA and Toyota, in support of the U.S. Department of Energy

Meeting Objectives:

- Convene industry and other stakeholders to explore infrastructure requirements, regional trends, and tradeoffs and opportunities at the intersection of hydrogen fuel cell and natural gas use for on road transportation. Identify synergies between natural gas and hydrogen fuels.
- Identify key challenges (both technical and non-technical, such as policies and standards) preventing or delaying the widespread deployment of natural gas and hydrogen.
- Identify and prioritize opportunities to address these challenges, and determine roles and opportunities to partner across both government and industry stakeholders.

Agenda

- 8:00a Registration and Continental Breakfast**
- 8:30a Welcome and Introductions**
Dawn Manley, Senior Manager for Chemical Sciences, Sandia National Laboratories
Kathryn Clay, Vice President for Policy Strategy, American Gas Association
- 9:00a Workshop Goals, Objectives, and Desired Outcomes**
Reuben Sarkar, Deputy Assistant Secretary for Transportation, U.S. Department of Energy
- 9:15a Federal Perspective on Opportunities for Hydrogen for Transportation – Including a Natural Gas Perspective**
Fred Joseck, Systems Analysis Project Manager, Fuel Cell Technologies Office, U.S. Department of Energy
- 9:25a Federal Perspective on Opportunities for Natural Gas for Transportation – Including a Hydrogen Perspective**
Mark Smith, Clean Cities Program, Vehicle Technologies Office, U.S. Department of Energy
- 9:35a Workshop Primer: Summary Highlights and Group Discussion**
Todd West, Technical Manager, Sandia National Laboratories
- 10:15a Panel Discussion #1: For what markets are natural gas and hydrogen in direct competition, and how might they be better suited for different transportation applications?**
Joan Ogden, Associate Professor of Environmental Science and Policy, UC Davis
Jim Bruce, Senior Vice President of Corporate Public Affairs, UPS
Jim Kliesch, Environmental Regulatory Affairs Manager, Honda
- 11:00a Panel Discussion #1 Follow-On Breakout Discussion**
- For what markets are natural gas and hydrogen in direct competition, and how might they be better suited for different transportation applications?
 - What are best practices and policies for infrastructure rollout? (Hydrogen has been proposed in “clusters” to enable a critical mass of stations & vehicles in close proximity, whereas natural gas infrastructure is being built to support long-haul trucking. Both may compete for fleets with centralized refueling.)
 - How should hydrogen and natural gas contribute to the diversity of transport needs?

12:00p Lunch

1:00p Panel Discussion #2: How do we get fueling stations built? Are there business models that can simultaneously support hydrogen and natural gas?
Frank Wolak, Vice President, Fuel Cell Energy
Jeff Reed, Director of Business Strategy & Advanced Technology, Southern California Gas
Prabhu Rao, Vice President & Chief Commercial Officer, Nuvera

1:45p Panel Discussion #2 Follow-On Breakout Discussion

- *What are the intersections between natural gas and hydrogen infrastructure development for use in natural gas and hydrogen fuel cell vehicles?*
- *How are they synergistic, and how do they compete?*
- *What technological and policy developments can influence this?*

2:30p Report-Out from Breakouts

3:15p Panel Session #3: Case Studies and Lessons Offered at the State Level

Catherine Dunwoody, Chief, Fuel Cell Program, California Air Resources Board
Lynn Lyon, Fuel Market Development Director, Pioneer Natural Resources
Glen Andersen, Energy Program Director, National Conference of State Legislatures

4:00p Panel Discussion #3 Follow-On Plenary Discussion

4:45p Summary and Report Next Steps

Dawn Manley, Sandia National Laboratories

5:00p Workshop Conclusion

5:30p Reception

Charlie Palmer Steak DC
101 Constitution Ave, NW
Washington, DC 20001

6:00p Dinner