

BIOGAS AND FUEL CELLS WORKSHOP AGENDA
National Renewable Energy Laboratory
Research Support Facility, Beaver Creek Conference Room
Golden, Colorado
June 11-13, 2012

WORKSHOP OBJECTIVES:

- Discuss current state-of-the art for biogas and waste-to-energy technologies for fuel cell applications.
- Identify key challenges (both technical and non-technical) preventing or delaying the widespread near term deployment of biogas fuel cells projects.
- Identify synergies and opportunities for biogas and fuel cell technologies.
- Identify and prioritize opportunities to address the challenges, and determine roles and opportunities for both government and industry stakeholders.
- Develop strategies for accelerating the use of biogas for stationary fuel cell power and/or hydrogen fueling infrastructure for motive power fuel cells.

WORKSHOP POCs:

Peter Devlin
Fuel Cell Technologies Program
U.S. Department of Energy
202-586-4905
Peter.Devlin@ee.doe.gov

Michael Ulsh
National Renewable
Energy Lab (NREL)
720-244-3501
Michael.Ulsh@nrel.gov

Diane Littau
National Renewable
Energy Lab (NREL)
303-815-6743
Diane.Littau@nrel.gov

MONDAY, JUNE 11

1:00 – 2:00 PM

Registration

2:00 – 2:15 AM

Welcome

- Dale Gardner, National Renewable Energy Laboratory

2:15 – 3:30 PM

DOE Perspective

- Sunita Satyapal, Fuel Cell Technologies Program, Office of Energy Efficiency and Renewable Energy, U.S. Department of Energy
- Brian Duff, Biomass Program, Office of Energy Efficiency and Renewable Energy, U.S. Department of Energy

3:30 – 5:15 PM

Markets and Legislative Outlook

- Michael Hicks, Fuel Cell and Hydrogen Energy Association
 - Fuel Cell and Biogas Industries Perspectives
- Norma McDonald, Organic Waste Systems
 - State Policy and Legislative Outlook
- Patrick Serfass, American Biogas Council
 - National Policy and Legislative Outlook

5:15 – 5:45 PM

General Discussion about Workshop

- Pete Devlin, Fuel Cell Technologies Program
- Shawna McQueen, Energetics
 - Overview of Topics of Workshop
 - Overview of Goals and Tasks

6:00 – 7:30 PM

Information Brainstorming Session

- Dale Gardner, National Renewable Energy Laboratory

TUESDAY, JUNE 12

7:30 – 8:00 AM	Continental Breakfast
8:00 – 8:30 AM	Biomass Resources Overview and Perspectives on Best Fits for Fuel Cells <ul style="list-style-type: none"> ▪ Darlene Steward, National Renewable Energy Laboratory
8:30 – 9:30 AM	Success Stories <ul style="list-style-type: none"> ▪ Frank Wolak, City of Tulare/ Fuel Cell Energy - wastewater treatment gas ▪ Jack Brouwer, UC Irvine - waste water treatment gas and hydrogen production/dispensing for fuel cell vehicles ▪ Mike McGowan, Linde North America – LNG from landfill gas
9:30 – 9:45	Break
9:45 – 11:15 AM	Biogas Technologies and Integration with Fuel Cells <ul style="list-style-type: none"> ▪ Shabbir Ahmed, Argonne National Laboratory ▪ Charlie Anderson, Air Liquide ▪ Ruihong Zhang, UC Davis ▪ Ian Handley, RosRoca
11:15 – 12:00 PM	Putting Resources and Technology Together <ul style="list-style-type: none"> ▪ Steve Hamilton, SCS Energy - value proposition for biogas from waste water treatment plant ▪ James Dack, Stern Brothers - financial options and opportunities
12:00 – 12:15 PM	Workshop Goals, Objectives, and Desired Outcomes <ul style="list-style-type: none"> ▪ Steve Chalk, Office of Energy Efficiency and Renewable Energy, U. S. Department of Energy
12:15 – 1:00 PM	Working Lunch <ul style="list-style-type: none"> ▪ Pete Devlin, Fuel Cell Technologies Program - participant pre-workshop input results
1:00 – 2:30 PM	Breakout Session #1 (3 parallel sessions – see Breakout Session Details) <ul style="list-style-type: none"> ▪ Project Development Barriers and Challenges
2:30 – 2:45 PM	Break
2:45 – 5:15 PM	Breakout Session #2 (3 parallel session – see Breakout Session Details) <ul style="list-style-type: none"> ▪ Strategies and Actions for Success
5:15 – 6:00 PM	Reports from Breakout Group Discussions

WEDNESDAY, JUNE 13

8:00 – 8:30 AM	Continental Breakfast
8:30 – 9:30 AM	Critical Questions and Next Steps Sunita Satyapal and Pete Devlin, Fuel Cell Technologies Program, Office of Energy Efficiency and Renewable Energy, U.S. Department of Energy <ul style="list-style-type: none"> ▪ How can government actions catalyze private investment in deployments? ▪ What are the critical questions or topics for further analysis?
9:30 – 11:30 AM	NREL Tour <ul style="list-style-type: none"> ▪ Walking tour of the Integrated Biorefinery Research Facility and the Thermochemical Users Facility