



Delivering Renewable Hydrogen

A Focus on Near-Term Applications

A One-Day Workshop Presented by the
National Renewable Energy Laboratory and the California Fuel Cell Partnership

Palm Springs, California, November 16, 2009

Palm Springs Convention Center, Wyndham Hotel - Catalina Room, 9:00 AM to 5:00 PM

With Modeling Show-and-Tell at 5:15 PM and Reception Presentation at 6:15 PM (Mesquite Room G)

AGENDA

- 8:30 am** **Registration**
- 9:00 am** **Welcome and Opening Remarks: Robert Remick, NREL**
- 9:10 am** **Session 1: Renewable Hydrogen Policy and Markets**
Moderator: Nancy Garland, U.S. Department of Energy
 - 1. Hydrogen Policy and Analyzing the Transition
Paul Leiby, Oak Ridge National Laboratory
 - 2. California Regulations on Renewable Hydrogen and Low Carbon Technologies
Gerhard Achteik, California Air Resource Board
 - 3. Hydrogen Funding and the AB 118 Investment Plan
Peter Ward, California Energy Commission
 - 4. The Environmental Perspective of Renewable Hydrogen
*Tyson Eckerle, Energy Independence Now****Panel Discussion***
- 10:30 am** **Morning Break**
- 10:50 am** **Session 2: Hydrogen Pathways and Markets**
Moderator: Catherine Dunwoody, CaFCP
 - 1. Pathway and Resource Overview
Mark Ruth, NREL
 - 2. The Power of “And”
Praveen Kedar, GM
 - 3. Landfill Gas to LNG at Altamont Pass
*Steve Eckhardt, Linde****Panel Discussion***
- 12:15 pm** **LUNCH BREAK**



1:00 pm

Session 3: Hydrogen from Biogas

Moderator: Marc Melaina, NREL

1. Analysis of a Cluster Strategy for Near term Hydrogen Infrastructure Rollout in Southern California
Mike Nicholas, University of California Davis
2. Fuel Cell Power Model
Darlene Steward, NREL
3. Anaerobic Digester Fuel Cell Applications
Pinakin Patel, Fuel Cell Energy & Ed Heydorn, Air Products

Panel Discussion

3:00pm

Afternoon Break

3:15 pm

Session 4: Project Showcase and Developments

Moderator: Paul Scott, California Hydrogen Business Council (CHBC)

1. Renewable Hydrogen Production at Hickam Air Force Base
Thomas Quinn, HCATT
2. Wind to Hydrogen Project
Todd Ramsden, NREL
3. Department of Defense's Renewable Energy Testing Center and Impact on Hydrogen Production
Bill Walden, Technikon

Panel Discussion

4:45 pm

Closing Remarks: Nancy Garland, U.S. Department of Energy

5:15 pm – 8:00 pm

Evening Plenary: Mesquite Room G

Modeling Show-and-Tell & Presentation

5:15 - 6:15pm Modeling Show-and-Tell

1. FC Power Model
Darlene Steward, Mike Penev, NREL
2. Macro-System Model (MSM)
Mark Ruth, NREL
3. Hydrogen Demand and Resource Analysis model (HyDRA)
Marc Melaina, NREL

6:15 - 8:00pm Evening Plenary Session & Presentation

Pathways to Fuel Cell Deployment
Thomas Damberger, Golden State Energy