

X.15 Hydrogen Education State Partnership Program

Charles N. Kubert

Project Director
Clean Energy States Alliance
50 State St.
Montpelier, VT 05602
Phone: (802) 272-1135
E-mail: ckubert@cleanegroup.org

DOE Technology Development Manager:
Carole Read

Phone: (202) 586-3152
E-mail: Carole.Read@ee.doe.gov

DOE Project Officer: Gregory Kleen

Phone: (303) 275-4875
E-mail: Greg.Kleen@go.doe.gov

Subcontractor:

Glen Anderson
National Conference of State Legislators (NCSL)
Denver, CO

Project Start Date: November 2009

Project Completion Date: June 2011

Program Multi-Year Research, Development and Demonstration Plan:

11. Develop set of introductory materials suitable for a non-technical audience. (4Q, 2006)
16. Develop database of state activities. (2Q, 2007)
17. Hold "Hydrogen 101" seminars. (4Q, 2008 through 4Q, 2012)

Accomplishments

- Completed survey of state hydrogen and fuel cell programs and policies.
- Developed case studies of exemplary state programs.
- Developed series of four briefing guides for state policymakers on fuel cell technologies, policies and programs, critical power applications and hydrogen production, transport and storage.
- Established and maintained fuel cell listserv and Web pages providing current news on state policies and programs.
- Co-organized series of Webinars on fuel-cell related topics.
- Established sub-contractor relationship with National Council of State Legislators to assist in outreach to their members.

Objectives

- To build greater familiarity and understanding of stationary fuel cell technologies and applications among state policymakers.
- To disseminate and encourage the adoption of best practice policies which accelerate the adoption and reduce barriers to fuel cell installations.



Introduction

While stationary fuel cell installations have been growing at a rapid rate in the United States, this growth has been concentrated in just a few states that have provided strong financial incentives to encourage their use. This project addresses the need for more supportive state policies and programs to further accelerate the adoption of stationary fuel cells. In this project, Clean Energy States Alliance (CESA) will track, identify, evaluate, communicate, and facilitate state adoption of effective financial, policy, and technology activities and best practices that accelerate fuel cell and hydrogen technologies. CESA is using its membership network of state clean energy funds to educate state clean energy policy makers and program managers about fuel cell and hydrogen technology developments and the efforts by states to advance these technologies. With the outreach assistance provided by NCSL, CESA will have increased access to state legislators from all 50 states to provide information on hydrogen/fuel cell issues and policies.

This project is emphasizing efforts to develop stationary fuel cell industries and markets without directly advancing transportation technologies (with the

Technical Barriers

This project addresses the following technical barriers from the Education section of the Fuel Cell Technologies Program Multi-Year Research, Development and Demonstration Plan:

- (A) Lack of Readily Available, Objective, and Technically Accurate Information
- (B) Mixed Messages
- (C) Disconnect Between Hydrogen Information and Dissemination Networks

Contribution to Achievement of DOE Hydrogen Education and Outreach Milestones

This project will contribute to achievement of the following DOE milestones from the Hydrogen Education and Outreach section of the Fuel Cell Technologies

understanding that advancing stationary and portable fuel cell applications could facilitate the development and deployment of transportation fuel cells).

Approach

The basic approach to the project involves three stages:

First, CESA gathered baseline information on state programs and policies to advance fuel cell industries and deployment including the development of case studies to identify exemplary programs (Connecticut, Ohio, California, New York, Hawaii). This research was conducted to identify policies that appear to be most effective as well as the barriers which states have erected or failed to remove that impede the deployment of hydrogen infrastructure and stationary fuel cell deployment.

Second, CESA developed a series of briefing reports providing background on fuel cell technologies and best state programs and policies. These are targeted at both state policymakers and state renewable energy program fund managers. CESA also continues to enhance its hydrogen and fuel cell Web pages by posting current information on new program and policy development at both the state and federal levels.

CESA is currently in the third stage of this project which focuses on direct outreach to state legislators, policy managers, and renewable energy program managers. CESA is organizing a workshop on stationary fuel cell deployment for its fall CESA member national meeting in Washington, DC. Working with our partner, the NCSL, CESA will also be organizing a Webinar for state legislators and a presentation at NCSL's fall legislative summit. CESA will also be seeking selective opportunities to present at both the state and regional level to targeted audiences such as building code officials, and state and higher education facilities managers (emphasizing the value proposition of fuel cells for critical power).

Results

CESA has now developed a comprehensive set of best practice programs and policies supporting hydrogen and fuel cell industrial development and project deployment. We have produced educational materials which should prove effective in engaging state

policymakers and others on the value of supporting fuel cell technologies. We are beginning to reach out directly to policymakers to further explain the technologies and how they fit within the overall framework of clean energy development within their states. It is difficult, however, to measure the results of these educational and outreach efforts against either the project's or DOE's objectives. State-level policy changes can take several years to occur. In addition, while we can track state renewable energy program spending on fuel cells, near-term spending increases are most likely to occur in those states with existing fuel cell programs.

Conclusions and Future Directions

- There is little state-level engagement on fuel cell deployment beyond the handful of states with active programs and funding (CA, CT, HI, MA, NY).
- Other states (OH, SC) have active fuel cell industry development programs but little in the way of project deployment support.
- More effort is needed to build policymaker knowledge of and engagement in hydrogen and fuel cell technologies and policies (beyond vehicles). In particular, states which have been supportive of distributed, non-dispatchable renewable energy technologies (solar and wind) need to recognize the benefits of a clean (though not necessarily renewable) distributed energy technology which can provide baseload power while also meeting thermal energy loads.
- The future direction of this project will be focused on communicating this "value proposition" to the states.

FY 2010 Publications/Presentations

1. "Fuel Cell Technologies: A Clean, Reliable Source of Stationary Power", May 2010.
2. "Stationary Fuel Cells and Critical Power Applications", May 2010.
3. "Advancing Stationary Fuel Cells through State Policies", May 2010.
4. "Hydrogen Production and Storage: An Overview", forthcoming July 2010.

All reports available at <http://www.cleanenergystates.org/JointProjects/hydrogen/reports.html>