Hydrogen Education State Partnership Program

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Project Overview

Timeline

- Project Start: November 2008
- Project Completion: August 2011
- 10% Complete

Barriers Addressed

- Lack of H2/Fuel Cell Knowledge among State-level Policymakers
- Lack of Supportive State Policies
- Lack of State Funding

Budget

- FY2009-11: $300,000

Project Team

- Clean Energy Group
- Prof. Timothy Lipman (UC-Berkeley)
- National Conference of State Legislators

Project Team

- **Clean Energy States Alliance (CESA):** National nonprofit coalition of leading state clean energy programs. CESA provides information sharing, technical assistance, and a collaborative network for states on implementing effective clean energy programs.
- Staffed by **Clean Energy Group** (www.cleanegroup.org)
- Mission to develop & promote clean energy projects & markets through:
  - Peer-to-peer information exchange
  - Analysis
  - Partnership Development
  - Joint Projects

www.cleanenergystates.org

Project Team

- **Professor Tim Lipman, UC Berkeley**: Transportation and stationary sector energy and environmental analyst with 15 years of research experience at the graduate, post-doctoral, and professional levels. He is currently an Asst. Research Engineer with the Institute of Transportation Studies (ITS) at the University of California (UC) Berkeley. He also has affiliations with UC Berkeley's Renewable and Appropriate Energy Lab and with the ITS at UC Davis where he is a research track director for the Hydrogen Pathways Program. Dr. Lipman's research focuses on clean energy technologies, including fuel cell systems, electric-drive vehicles, combined heat and power systems, and hydrogen infrastructure, from an integrated economic, engineering, public policy, and environmental perspective.

- **National Conference of State Legislators:** a bipartisan organization that serves the legislators and staffs of the nation's 50 states, commonwealths and territories. NCSL provides research, technical assistance and opportunities for policymakers to exchange ideas on the most pressing state issues.

Project Objectives

- Identify state hydrogen program **best practices** and policies.
- Provide **information** and **technical assistance** to state policy leaders and state renewable energy programs to foster the development of effective hydrogen fuel cell programs.
- Promote strategic opportunities for states and DOE to advance hydrogen technology deployment through **partnerships, collaboration**, and targeted activities.

Identification of Best Practices

- State Hydrogen and Fuel Cell Survey
  - Initial assessment to include topics such as
    - funding mechanisms and support
    - RPS set-asides
    - Regulatory support and barriers (e.g., standby charges)
    - public-private partnerships
  - To be regularly updated throughout the project 3 year time period
- Recommendations Report
  - On best practices identified
- Case Studies
  - State policies, incentive programs, and projects- 2 per year
- Model Policies and Programs
  - Based on survey, recommendations and case studies

Education and Technical Assistance

Prepare technical overviews:

- Stationary fuel cell technologies
- H2 production and storage technologies
- Fuel cell applications for critical facilities
  - Brief, accessible format relevant for policy makers
  - Include assessments and case studies of pilot and early commercial projects
  - Focus on cost and technical performance data
  - To be distributed on website, listserve, NCSL policy briefs and newsletter, and workshops/presentations

Education and Technical Assistance

- Technical overview topics to include:
  - Advantages of fuel cells relative to other distributed generation technologies
  - Value of fuel cells for critical power applications, e.g. data centers, hospitals, 911 dispatch
  - Projected evolution of fuel cell and hydrogen markets over the near/ medium / long term
  - Importance of stationary fuel cells as both standalone market and precursor to hydrogen vehicles

Education and Technical Assistance

- Workshops
  - NCSL annual meeting
  - NCSL energy committee meeting
  - CESA bi-annual meeting
  - NHA and other annual meetings
- Bi-monthly Conference calls with DOE and NHA
  - Combining one CESA monthly call with H2 call to raise awareness and links between the groups

Communications and Outreach

- Project Steering Committee
  - To review and provide guidance on project research, case studies and outreach
  - Invited from CESA members, state energy offices, NCSL membership as well as state based H2 organizations, DOE state H2 education grant awardees
- H2 and Fuel Cell Listserve
  - To share updates of state policies and projects, recommendations, case studies and technical research results
  - Invited from CESA members, state energy offices, NCSL membership as well as state based H2 organizations, DOE state H2 education grant awardees

Accomplishments to date

- Initial Survey of state H2 programs completed
  - In-depth assessment of the most promising programs and policies nearing completion
- State H2 listserve established
- Active state H2 website launched
- State and regional calls ongoing
  - Successful in-person state and regional workshop at NHA annual conference
- Technical research underway

Future Plans

- 2009:
  - Complete technical overview of stationary fuel cell and H2 production and storage technologies
  - Complete survey assessment of state H2 policies and programs
  - Complete two case studies of: state policies, projects, incentive programs
  - Continue to share updates, research results and other relevant information through listserve
  - Continue to upload research results, policy and program updates to webpage

Future Plans

- 2010
  - Complete Recommendations Report
  - Complete technical overview of fuel cell applications for critical facilities
  - Complete state H2 and fuel cell sample policies and programs
  - Complete two additional Case Studies
  - Lead workshop with NCSL energy committee
  - Release NCSL policy brief
  - Continue to monitor and update:
    - State policies and projects
    - Stationary fuel cell and hydrogen technology developments
    - Opportunities for collaboration among states and with DOE
  - Ongoing:
    - Listserve and website
    - State and regional calls
    - Steering committee communications

Future Plans

- 2011
  - Lead workshop at NCSL annual meeting
  - Lead workshop at CESA bi-annual meeting
  - Release article for NCSL newsletter
  - Complete two additional Case Studies
  - Complete final updated version ofS tate policies and projects best practices
  - Ongoing:
    - Listserve and website
    - State and regional calls
    - Steering committee communications
    - Identify opportunities for collaboration among states and with DOE

Outcomes

- **Educational materials, case studies, reports, technical overviews** and analysis of state efforts, opportunities, best practices, and funding assistance mechanisms to advance fuel cell and hydrogen applications and markets.
- **Recommendations** of effective policies, programs, and financing mechanisms to promote hydrogen-fuel cell project deployment at the state level, may include model legislation.
- **Effective communications and collaboration** between CESA member states, NCSL, DOE, NHA, other organizations interested in developing fuel cell and hydrogen programs
- Fuel cell and hydrogen **webpage** and **listserv** for CESA members and state leaders, linked to NCSL, for posting of current information on state hydrogen activities, trends, and program elements.

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