IX.0 Education Sub-Program Overview

INTRODUCTION

The Education sub-program facilitates early market hydrogen and fuel cell deployments and supports future commercialization by providing technically accurate and objective information to key target audiences that can help transform the market (see Table 1).

TABLE 1. Key Target Audiences for the Education Sub-Program

Target Audience	Rationale
Code Officials	Code officials must be familiar with hydrogen to facilitate the permitting process and local project approval.
First Responders	Firefighters, as well as law enforcement and emergency medical personnel, must know how to handle potential incidents; their understanding can also facilitate local project approval.
Local Communities/General Public	Local communities will be more likely to welcome hydrogen and fuel cell projects if they are familiar with hydrogen.
Potential End-Users	Potential early adopters need information about commercially available hydrogen and fuel cell products and the opportunities for incorporating the technologies into their operations.
State and Local Government Representatives	A broad understanding of hydrogen encourages favorable decision-making regarding opportunities for near-term deployment and lays the foundation for long-term change.
Middle School and High School Teachers and Students	Teachers need technically accurate information and usable classroom activities to educate the next generation of potential researchers, engineers, policy-makers, and end-users about the technologies.
University Faculty and Students	Graduates are needed for research and development in government, industry, and academia.

The Education sub-program develops and disseminates information resources and conducts training. It strives to communicate a balanced message to help target audiences become familiar with hydrogen and fuel cell technologies and how they fit in the portfolio of renewable energy and energy-efficiency options. To aid with market introduction, the sub-program helps target audiences develop an accurate understanding of hydrogen safety, recognize opportunities for deployment in near-term markets, and understand the role of early markets in facilitating the use of hydrogen and fuel cells.

GOALS

The goal of the Education sub-program is to educate key audiences about hydrogen and fuel cell technologies to facilitate near-term deployment, broad commercialization, and long-term market acceptance.

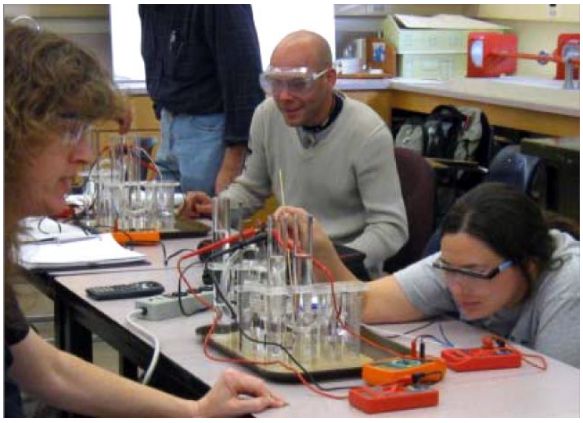
OBJECTIVES

The Education sub-program is closely coordinated with the Program's activities in technology demonstration and validation; safety, codes and standards; and early market deployment and associated market transformation activities, as well as state and regional-based hydrogen and fuel cell outreach programs as part of a comprehensive strategy to transform success in demonstrating and deploying technologies into success in the broader marketplace. These integrated efforts form a comprehensive strategy to transform success in demonstrating and deploying technologies into success in the broader marketplace. Specific objectives for the Education sub-program include the following:

- Increase the acceptance and inclusion of hydrogen and fuel cell technologies as a part of a clean energy portfolio of energy efficiency and renewable energy technologies in federal, state, and local government and private sector activities.
- Reduce the "soft costs" associated with the deployment and early adoption of hydrogen and fuel cell technologies in multiple applications (e.g., insurance, permitting, uniform codes and standards) through education, outreach, and training of "second generation" clean energy professionals.
- Increase general knowledge and awareness of the benefits of the use of hydrogen and fuel cell technologies in multiple applications among key target audiences.
- Increase awareness of the broad range of applications for fuel cells and hydrogen—beyond light-duty vehicles and buses.

FISCAL YEAR (FY) 2012 STATUS

The Education sub-program continued to conduct activities based on prior-year funds. These activities include supporting state and regional outreach efforts by providing consistent messages and readily available information resources, along with other activities, as appropriate. The sub-program's outreach projects are focused on states with an active hydrogen and fuel cell presence, and they are working to develop case studies, best practices, and technical assistance resources to help decision-makers identify and assess opportunities for future deployment. In the area of academics, the sub-program also continued to support university, high-school, and middle-school education, including dissemination of lesson plans, curricula, and laboratory materials.



FY 2012 KEY ACCOMPLISHMENTS

- Organized an event to "match" suppliers and manufacturers.
- Initiated Northeast cluster group for collaboration between states and developed roadmaps for seven states in the cluster.
- Completed PBS Motorweek Series with Virginia Clean Cities by developing an episode focused on a vehicles and infrastructure update that began airing in October 2011.
- Webinar series included over 1,500 attendees in FY 2011. Topics included Federal Facilities Guide to Fuel Cells in May, America's Next Top Energy Innovator Runner Up in April, National Hydrogen Learning Demonstration Status in February. Based on the success of the 2011 series, the webinars have been continued into 2012 and are now coordinated by the Program.
- Published more than 70 news articles in FY 2011 to continue communication of Program accomplishments. Publicity and media activities are continuing to gain momentum in 2012.
- Launched a monthly *Fuel Cell Technologies Program Newsletter*, which recaps news and events and previews upcoming activities, reaching more than 7,500 subscribers.
- Trained more than 9,700 middle school and high school teachers (cumulative total) in 35 states, through "H2 Educate!"— 90% felt that resources increased effectiveness of lesson plans.

- 2012 Hydrogen Student Design Contest included 20 universities from nine countries. The winning team presented their design during a keynote session at the Young Scientist Symposium of the World Hydrogen Energy Conference 2012 in Toronto, Canada. At the awards ceremony, the theme for the next contest was announced as well. The 2013 contest will ask students for their plans for the development of hydrogen fueling infrastructure in the Northeast.

BUDGET

The Education sub-program's FY 2012 budget and FY 2013 request are zero. New projects that were competitively awarded in FY 2004 and FY 2008 were fully funded in FY 2010. The remaining projects are scheduled to be completed in FY 2012. Given budget constraints and the need for including hydrogen and fuel cells within the broader Energy Efficiency and Renewable Energy portfolio, Education activities will be coordinated with other DOE-wide efforts. Target audiences have been prioritized according to their near-term relevance and the effect on the use of hydrogen and fuel cell technologies today.

FY 2013 PLANS

In FY 2013, the Education sub-program will complete expenditures of prior-year appropriations in relevant areas and focus on facilitating the introduction of hydrogen and fuel cell technologies into early markets. Future efforts will coordinate with other DOE-wide efforts to leverage recent project successes through the development of educational materials and webinars to highlight the benefits of hydrogen and fuel cell technologies.

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