Project ID #
TV027

H2-FCEV Commercialization

Facilitating collaboration, obtaining real world expertise, and developing new analysis tools

2014 DOE Hydrogen and Fuel Cells Program Review
June 19, 2014

Bill Elrick, California Fuel Cell Partnership
Operated by Bevilacqua Knight, Inc.

California FUEL CELL PARTNERSHIP
DRIVING FOR THE FUTURE

This presentation does not contain any proprietary, confidential, or otherwise restricted information

Overview

Timeline

- Start: January 1, 2012
- End: December 31, 2016
- 50% complete

Budget

Total project funding

- DOE share: $267.5K
- Contractor share: $2.42M

- Funding received in FY13:
  - $267.5K
- Funding for FY14:
  - $267.5K *(anticipated)*

Barriers

- Limited collaboration & communication across market segments & stakeholders
- Limited conventional fuel provider awareness & participation
- Low consumer confidence in early market H2 infrastructure
- Lack of cohesive, comprehensive national ER training guidance

Partners

- See partner slide
  - Industry, policy, and scientific input and expertise
  - Financial cost share
- Project lead: Bill Elrick

Partners (CaFCP members)

Air Liquide
Air Products
Alameda-Contra Costa Transit District *(AC Transit)*
Automotive Fuel Cell Cooperation
Ballard Power Systems
Bay Area Air Quality Management District
California Air Resources Board
California Department of Food and Agriculture
California Energy Commission
California State University - Los Angeles
CALSTART
The Center for Energy Efficiency and Renewable Technologies *(CEERT)*
Center for Transportation and Environment *(CTE)*
Chrysler
Daimler
Energy Independence Now
General Motors
Honda
Hydrogenics
Hyundai
Institute of Transportation Studies, UC Davis
ITM Power
Linde North America, Inc.
National Fuel Cell Research Center, UC Irvine
National Renewable Energy Laboratory *(NREL)*
Nissan
Powertech Labs
Proton OnSite
Sandia National Laboratories
South Coast Air Quality Management District
Southern California Gas Company
SunLine Transit Agency
Toyota
U.S. Department of Energy
U.S. Environmental Protection Agency
US Hybrid
University of California, Berkeley
Volkswagen

Objectives - Relevance

Barriers	Objectives
Limited collaboration & communication across market segments and stakeholders	• Track, synthesize, and analyze latest H2 infrastructure progress and challenges, developing useful reports • Conduct regular stakeholder meetings to present and discuss challenges and progress in a collaborative manner
Limited conventional fuel provider awareness and participation	• Conduct education and outreach directly to conventional fuel providers via existing networks • Increase participation in H2-FCEV industry funding opportunities and activities
Low consumer confidence in early market H2 infrastructure	• Expand Station Operational System Status (SOSS) to a more capable platform to increase usability and early customer confidence • Include additional H2 stations as they come online
Lack of cohesive, comprehensive national emergency response (ER) training guidance	• Complete a stakeholder-approved National ER template to be used as guidance among DOE and other ER activities • Complete “train-the-trainer” outreach to successfully initiate the national ER template

Approach – Strategy

As a public/private stakeholder group, our approach is to leverage active participation and commitment from all sectors to advance H2-FCEV commercialization

- Collaboration and communication tools
  - Develop H2 progress reports on CaFCP and stakeholder activities – to facilitate transparent communication on progress and challenges
  - Develop and update Station Profiles for all CA H2 stations – to collect relevant details, real world experience and lessons learned
- Directly engage conventional fuel providers
  - Conduct H2-FCEV education and outreach
  - Increase conventional fuel provider participation in H2-FCV station development, solicitations and industry activities

Approach – Strategy, *continued…*

As a public/private stakeholder group, our approach is to leverage active participation and commitment from all sectors to advance H2-FCEV commercialization

- Increase consumer confidence and FCEV usability
  - Expand SOSS to become more capable and user-friendly
  - Include new H2 stations as they come online
- Establish a harmonious national ER program
  - Develop a stakeholder-based national ER outline
  - Complete “train-the-trainer” outreach to initiate program

Accomplishments and progress

Collaboration and communication

- Developed 12 monthly H2 progress reports
- Updated Station Profiles during CaFCP Working Group meetings (Sep and Dec 2013, Mar and May 2014) http://cafcp.org/sites/files/20140211_H2-Station-profiles.pdf
- Integrated Station Profiles, Station Report Cards and other reports into a new H2 Station *Smartsheet*, used by GO-Biz ZEV Infrastructure Project Manager to track progress of all state funded H2 stations development
- Facilitated extensive discussions within CaFCP meetings and among industry stakeholders on CA funding programs, station development, implementation progress, challenges and needs.

CaFCP monthly project reports

Q2 Status as of 03/31/14

2. Support Station implementation
CaFCP will monitor, coordinate and execute the activities to deploy stations for commercialization as outlined in the roadmap document.

2a National ER Program (Project lead: Jennifer Hamilton)
Begin full implementation of national ER template into existing programs, with inclusion into primary ER training stakeholders (e.g. NFPA and NAFTC). Following completion of template begin "Train the trainer" handoff and expanded outreach.

Project Name	Task Name	Milestone	Due Date	Status	Deliverable	Due Date	Status	Comments
Develop and implement natio program	Develop the national ER program	submit material to NFPA	3/31/14	Completed	NPFA to implement online material	6/30/14	In Progress	Gave NFPA material from CaFCP and DOE for updating the online training program to include H2 and FC's- NFPA will also be a user of
Publish SAE J2990/1								

2c Integrate Hydrogen Into Existing Retail Fuel Market (Joe Gagliano)
Expand existing fuel retailer outreach activities by becoming official members of leading industry groups (Fuels Institute/NACs, CIOMA, WPMA) and active participation/exhibits in previous and new events (WPMA, POC, SIGMA, Fuels Institute). Continue local outreach and Fueling the Future workgroup in CA.

Project Name	Task Name	Milestone	Due Date	Status	Deliverable	Due Date	Status	Comments
Conduct outreach campaigns to f retailers	Update H2 station materials				Update fact sheets	2/14/14	Completed	CSULA station profile completed and added to outreach package.

2d Station Hardware Implementation and Fuel Demand Program (Project lead: Nico Bouwkamp)
Identify and address key barriers and prepare recommendations to improve timeline to 68 stations. Increase participation in national hydrogen infrastructure groups (DOE HDTT and H2USA Locations group). Explore innovative methods of building demand. Participate in FC Seminar and related workshops.

Project Name	Task Name	Milestone	Due Date	Status	Deliverable	Due Date	Status	Comments
Hydrogen station tracking and reporting	Bring all new stations on to SOSS	Bring Emeryville reliably online	3/31/14	In Progress	All new stations on SOSS	12/31/14	In Progress	Waiting for confirmation from Linde if Emeryville requires changes. In communication with Linde and APCI for bringing new stations onto SOSS as they come online. Troubleshooting existing stations continues (NB, OCSD)
	Migrate SOSS to a new platform	ID economical solution for SOSS data transfer	4/30/14	In Progress	SOSS V2.0	6/30/14	Not started	Met with Wenger Engineering for their solution.
	Develop go-to resource on H2 stations				Updated Station Profiles	2/14/14	In Progress	Finalized CSULA for WPMA (as of Feb 2014).
	Develop station tracking mechanism (high level)				Updated Station Report Card	4/15/14	In Progress	Updated 3/26 as per member feedback. Tech Team discussion needed on how to use in conjunction w/Tyson's Smartsheet document.
Revise 2012 Roadmap based on changed California context	Develop and write Roadmap Progress Report	Draft for WG review	3/12/14	Completed	Published document	5/31/14		Draft reviewed at WG March 12-13. Feedback from breakout group discussion included in document.
		Draft for ST review/approval	4/15/14	Completed				
Support mechanisms to generate	Support implementation of HVAS at H2 stations	Estimate budget needs	3/1/14	Completed	HVAS nozzle developed	12/31/14	In Progress	Based on input WEH & Thinkify, project budget proposal was submitted to Toyota. Toyota discussing internally and with other OEMs path forward.
	Support DOE with H2 station equipment reduction efforts workshops and FOAs	Participate in DOE workshop "H2 Transmission & Distribution" at NREL	2/26/14	Completed	Meeting reports	12/31/14	In Progress	Workshop occured Feb 24-26. Nico moderated break out session. Expected completion workshop report before DOE AMR.

Updated station profiles

Hydrogen Fueling Station | Emeryville - AC Transit

February 2014

Station Information

Address: 1172 45th St.
Emeryville, CA 94608
Station Status: Open to public
Hours of Operation: 24/7
PIN Required: Yes
Fuel Pressures: 5,000/10,000 psi
Supply Capacity: 65 kg/day (electrolyzer)
Fuels: Up to 20 cars/day
Fuel Price: Contract
Operations Contact: AC Transit
1600 Franklin Street, Oakland, CA 94612
Market: Cluster - Berkeley
Open to Public: April 2012

Hydrogen Supply/Equipment

- Hydrogen Source/Storage: Proton OnSite electrolyzer using 100% renewable solar-powered electricity produces 65 kg/day of hydrogen for passenger vehicles
- Liquid hydrogen storage is provided as a backup to the electrolyzer
- Dispenser: Linde
- Nozzle: WEH

Design/Construction/O&M Service Contractors

- Designed by: Linde North America, Jacobs and EPC
- Constructed by: W.L. Butler Construction
- Installed by: 510 kW DC solar photovoltaic system installed by engineering and construction firm Cupertino Electric, Inc.
- Maintained by: Linde

Station Contact

Douglas Byrne
Project Manager, ZEB Demonstration Program
AC Transit
10626 International Blvd.
Oakland, CA 94603
510-577-8821
dbyrne@actransit.org

Funding/Financing

Total: $9.2 million for transit and public fueling
Govt: Total grants: $6.7 million (7/12 Staff Report - ARB and FTA)
ARB - $2.7 million grant (public FCEV fueling)
Public funding period: Three years

Other Station Details

- Land Owner: AC Transit
- Gate over dispenser opens with the swipe of a fueling card
- PIN is required after swiping fueling card at the dispenser to authorize fueling
- Fueling agreement with AC Transit required

Station profiles for all 10 public hydrogen stations open in California

H2 station *Smartsheet*

H2 Station Development Status

	Flag for follow up	As of	Permit Status	Station & Task Name	Who has the ball?	Projected Capacity (kg/day)	Stn. Developer/Operator	Funding Source/Year	Address	Start Date	Expected Operational Date	Progress Status	Pie Visual	Comments
1				Constructed Stations						04/01/06	11/06/14			
2				Burbank - West Verdugo			Hydrogen Frontier	DOE 2006	145 W. Verdugo Ave.	07/02/13	11/06/14	Selected for Upgrade		
18				Emeryville - AC Transit			AC Transit/Linde	2008 - ARB	1172 45th St.	04/01/12	04/01/12			
19				Fountain Valley - OCSD			APCI	2008 - ARB	10844 Ellis Ave.	04/01/11	04/01/11			
20				Los Angeles - Harbor City			APCI	2009 - ARB	25800 S. Western Ave.	04/01/13	04/01/13			
21				Irvine - UCI			APCI	DOE/SCAQMD 2007	19172 Jamboree Rd.		2007 (3rd gen.)			
22				Newport Beach - Jamboree			Shell	2008 - ARB	1600 Jamboree Rd.	04/01/12	04/01/12			
23				Thousand Palms - Sunline Transit			Sunline Transit	multiple	32-505 Harry Oliver Trail	04/01/06	04/01/06			
24				Torrance - W. 190th St.			Shell		2051 W. 190th Street	04/01/11	04/01/11			
25				Los Angeles - West LA 1			Shell	private	11576 Santa Monica Blvd.	04/01/08	04/01/08			
26		04/22/14		Los Angeles - Beverly Blvd.	Station Developer	180	Air Products	2010 - CEC	7751 Beverly Blvd., Los Angeles	06/02/10	10/01/14	Permit - Pre-Submittal		Working with LAD design before ap
58		05/06/14		Diamond Bar - SCAQMD	Station Developer	180	Air Products	2010 - CEC	21865 E. Copley Drive	06/02/10	06/13/14	Construction		Under constructio
86		04/22/14		Irvine - UCI (upgrade)	Station Developer	180	Air Products	2010 - CEC	19172 Jamboree Rd.	06/02/10	10/31/14	Station Design - drawings		Drawings comple permitting
239		05/06/14		Los Angeles - West LA 2	City/County	180	Air Products	2010 - CEC	11261 Santa Monica Blvd.	06/02/10	08/01/14	Permit - Submittal		Approved by Dep LAFD and city De construction bids structural plan ch
275		04/28/14		San Juan Capistrano - Junipero Serra	City/County	350	Linde	2010 - CEC	26572 Junipero Serra Rd.	06/02/10	11/30/14	Permit - Submittal		OCFA gave cond application is ba
305		05/16/14		West Sacramento - S. River Rd.	City/County	350	Linde	2010 - CEC	1515 S. River Rd.	06/02/10	09/30/14	Final Submittal		City is okay with t signature to final
337		04/22/14		Mission Viejo - Marguerite Pkwy	Station Developer	180	Air Products	2012 - CEC	25122 Marguerite Pkwy.	*11/18/13*	10/01/14	Pre-Submital Meeting		Met with City Pla application expe
367		04/22/14		Los Angeles - Woodland Hills	Station Developer	180	Air Products	2012 - CEC	5314 Topanga Canyon	*08/28/13*	10/01/14	Pre-Submittal meeting		Plan to submit p
399		05/05/14		Anaheim - E. La Palma	Station Developer	100	Air Liquide	2012 - CEC	3731 E. La Palma	01/06/14	09/30/14	Design, Pre-Submittal		Working around NFPA, working to interpretation
427		05/06/14		Cupertino - Stevens Creek Blvd	Station Developer	350	Linde	2012 - CEC	21530 Stevens Creek Blvd.	*06/30/15*	06/30/15	Site Agreement		Station owner ag
458		05/06/14		Foster City - Foster City Blvd.	Station Developer	350	Linde	2012 - CEC	390 Foster City Blvd.	*12/31/13*	06/30/15	Pre-Submittal Meeting		Station owner ag
488		05/06/14		Mountain View - Leong Dr.	Station Developer	350	Linde	2012 - CEC	830 Leong Drive	*12/01/13*	06/30/15	Pre-Submittal meeting		Successful W.Sa
518		05/06/14		Chino - East End Ave.	City/County	100	H2 Frontier	2012 - CEC	12600 East End Ave.	*01/01/14*	08/04/14	Permit - Submittal		On track
547		04/07/14		Los Angeles - CSULA	Station Developer	60	EPC	2008 - ARB	5151 State University Dr.	03/01/08	05/07/14	Open		Pressure testing, Grand Opening

Accomplishments and progress, *continued…*

Conventional fuel provider engagement

- Developed new "Stations" micro-site for fuel retailer/marketer community *http://cafcp.org/toolkits/stations*
- Exhibited at Western Petroleum Marketers Association Conference (WMPA), Feb 2014
- Presented on CA FCEV and H2 infra progress, exhibited, and conducted FCEV ride-n-drive at SIGMA Spring Conference, Apr 2014
- Exhibited at Pacific Oil Conference (POC), Sep 2013
- Presented on CA FCEV and H2 infra progress at NACS/Fuels Institute (FI), Apr 2014. FI ran pro-H2 article in their Aug 2014 newsletter.
- Conducted one-on-one H2 and FCEV educational meetings with ~25 regional fuel retailers and marketers
- Facilitated stakeholder response to CA H2 infra funding through industry outreach and discussions; with 10 different companies submitting responses for 61 different station applications (versus 4 companies submitting 9 station applications in previous solicitation)

CaFCP "Stations" micro-site

California Fuel Cell Partnership — DRIVING FOR THE FUTURE

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Home

Joe Gagliano's Blog | Jan. 23, 2014

Stations

Public Stations

Emeryville - AC Transit More info >
Station Status: Open
1172 45th St
Emeryville, CA 94608

Planned Stations

(Click a station below to see its status and details to the right.)

Anaheim - E. La Palma
Campbell
Chino - East End Ave
Coalinga
Costa Mesa
Cupertino - Stevens Creek Blvd
Diamond Bar - E. Copley Dr
Foster City - Foster City Blvd
Hayward
Irvine - UC Irvine (Upgrade)
Irvine - Walnut Ave
La Canada Flintridge
Laguna Niguel
Lake Forest
Lawndale - Inglewood Ave
Long Beach
Los Angeles - 9
Los Angeles - Beverly Blvd
Los Angeles - Cal State LA
Los Angeles - West LA 2
Los Angeles - Westwood
Los Angeles - Woodland Hills
Los Angeles -10
Mill Valley
Mission Viejo - Marguerite Pkwy
Mountain View - Leong Dr
Oakland
Oakland - AC Transit
Ontario
Orange
Pacific Palisades
Palo Alto
Redondo Beach - Beryl St
Redwood City
Riverside
Rohnert Park
San Diego
San Jose
San Juan Capistrano - Junipero Serra Rd
San Ramon

Station Details

Anaheim - E. La Palma

3731 E. La Palma
Anaheim, CA 92806

Station Status: In Development
Commission Date: October 30, 2014

Funding

The California Energy Commission (CEC) currently administers approximately $100 million in annual grant funding for alternative fuels and vehicles through its Alternative and Renewable Fuel and Vehicle Technology Program (aka AB118).

The funding process is a competitive grant that is scored on multiple criteria. Historically, the hydrogen equipment providers have been the lead on project proposals and they have partnered with dealers/operators who are interested in adding alternative fuels to their existing stations. CEC have provided both capital and O&M funding support.

If you are interested in applying for hydrogen station funding, please contact Joe Gagliano.

Hydrogen as a Fuel—Fast Facts

1. Hydrogen is produced by separating the hydrogen molecule from something else. Most hydrogen today is made from natural gas. Hydrogen can also be made from water and biogas.

2. Stations can produce hydrogen on site or have H2 delivered as a compressed gas or as a liquid.
3. Hydrogen fuel is dispensed into vehicles as a compressed gas at 5,000 psi (called H35) or 10,000 psi (called H70.)
4. Major automakers are bringing fuel cell vehicles to California markets beginning in about 2015. These are new vehicles, not converted cars and SUVs. http://cafcp.org/carsandbuses/makesandmodels
5. Filling an FCV with compressed hydrogen takes less than 10 minutes. The vehicle range is similar to that of a combustion vehicle: 250-400 miles.

6. Hydrogen is dispensed by the kilogram. One kilogram of hydrogen has energy equivalent to one gallon of gasoline. Because FCVs are 2-3 times as efficient as a gasoline vehicle, they do not need as much fuel.

Resources

- What Do You Need to Know About Hydrogen and Fuel Cell Electric Vehicles?
- What Do You Need to Know About Hydrogen Stations?
- What Do You Need to Know About Hydrogen Fueling Operations?
- What Do You Need to Know About Hydrogen Station Economics?
- What Do You Need to Know About the Local Government?
- Hydrogen Station Profiles
- 2013-2014 Investment Plan for the Alternative and Renewable Fuel and Vehicle Technology Program
- CEC Funding
- Hydrogen Network Investment Plan

Fuel provider engagement

Keyword Search

ABOUT | CONFERENCE | TRADE SHOW | SPONSOR | ACCOMMODATIONS

Fueling the Future - Hydrogen Fueling Station Funding Opportunities

Tuesday, 1:45 pm - 2:45 pm

Focus:
State government grant funding is available to integrate hydrogen into your retail fueling operations. State government funding agency representatives, hydrogen station developers, hydrogen station operators and auto makers discuss the need for stations, the funding process, and implementation challenges.

Background:
In response to the California Air Resources Board (ARB) Zero Emission Vehicle (ZEV) program requirements, major automakers have been required to produce and sell increasing numbers of ZEVs in California and other states that have adopted the ARB ZEV program. The vehicles initially produced to meet these requirements included hybrid-electric and battery-powered electric vehicles. In addition, automakers have also collectively spent billions of dollars in developing fuel cell electric vehicles that run on hydrogen. The short refueling time (5-7 minutes) and the vehicle range (over 300 miles per tank in some models) make these vehicles attractive to automakers as a long-term viable replacement for conventional gasoline-powered passenger cars and light-duty vehicles.

Currently, Daimler (Mercedes-Benz) and Honda are leasing hydrogen fuel cell vehicles to consumers in select areas in California. In addition, Toyota, GM, and Hyundai have fuel cell vehicles currently being loaned to select organizations for road testing of their fuel cell vehicles.

The challenge now is to fund and build the hydrogen fueling station network throughout California to support the successful commercial introduction of fuel cell
identified
/201208

FUELS INSTITUTE

No Longer a Pipe Dream

If the right factors are met, hydrogen fuel cell vehicles could be a viable option for consumers and retailers.

BY JOHN EICHBERGER

On January 28, 2003, President George W. Bush announced in his State of the Union speech a new initiative to power transportation:

"Tonight I'm proposing $1.2 billion in research funding so that America can lead the world in developing clean, hydrogen-powered automobiles. A single chemical reaction between hydrogen and oxygen generates energy, which can be used to power a car — producing only water, not exhaust fumes. With a new national commitment, our scientists and engineers will overcome obstacles to taking these cars from laboratory to showroom, so that the first car driven by a child born today could be powered by hydrogen, and pollution-free."

Hydrogen can be integrated into a traditional store layout, seen here in Irvine, California.

around consumer acceptance could be made.

Many manufacturers are expecting to deliver hydrogen fuel-cell vehicles

Tuesday, August 26

	WHOLESALE	CROSS-OVER	RETAIL		
12:30 pm - 1:30 pm		The UST Cleanup Fund: Fading into the Sunset?	What Drives Consumer Behavior...and Other Information to Make You More Profitable!		
1:45 pm - 2:45 pm	Mergers & Acquisitions 101 - Proper Preparation Prevents Poor Performance	Developing a High Performance Management Team (and Growing the Value of Your Company in the Process)	Fueling the Future - Hydrogen Fueling Station Funding Opportunities ★		
3:00 pm - 4:30 pm	CARB Session	National Government Affairs Update		How to Improve Work Place Safety and OSHA Compliance	

Accomplishments and progress, *continued…*

Consumer confidence and FCEV usability

- 2 new stations were added to the Station Operational Status System (SOSS) – Emeryville & Richmond
- Secured strong automaker interest to accelerate and expand original SOSS SOW and timeline

National Emergency Response program

- Completed draft national ER training outline, including concept buy-in of major industry stakeholders
- New H2-FCEV online training module added to NFPA website, in collaboration with national outline project
- Developed new "Fire and Safety" micro-site for first responder community *http://cafcp.org/toolkits/safety*

SOSS

California Driving for the future

Station Status

Find the nearest station

Get Directions

- Boulder, CO
- Burbank
- Emeryville
- Fountain Valley
- Los Angeles
- Los Angeles
- Newport Beach
- Richmond
- Torrance

More stations coming soon!

Newly added

Home Screen

Home | Station Status | Newport Beach - Jamboree Rd

Newport Beach - Jamboree Rd

Status: ONLINE
H35*: 66 KG
H70*: 98 KG
Last Updated: 05/20/14 11:10am
*H35 = 35 MPa or 5,000 PSI
*H70 = 70 MPa or 10,000 PSI

Address: 1600 Jamboree Blvd, Newport Beach, 92660 (Map)

Opening Hours: 24/7

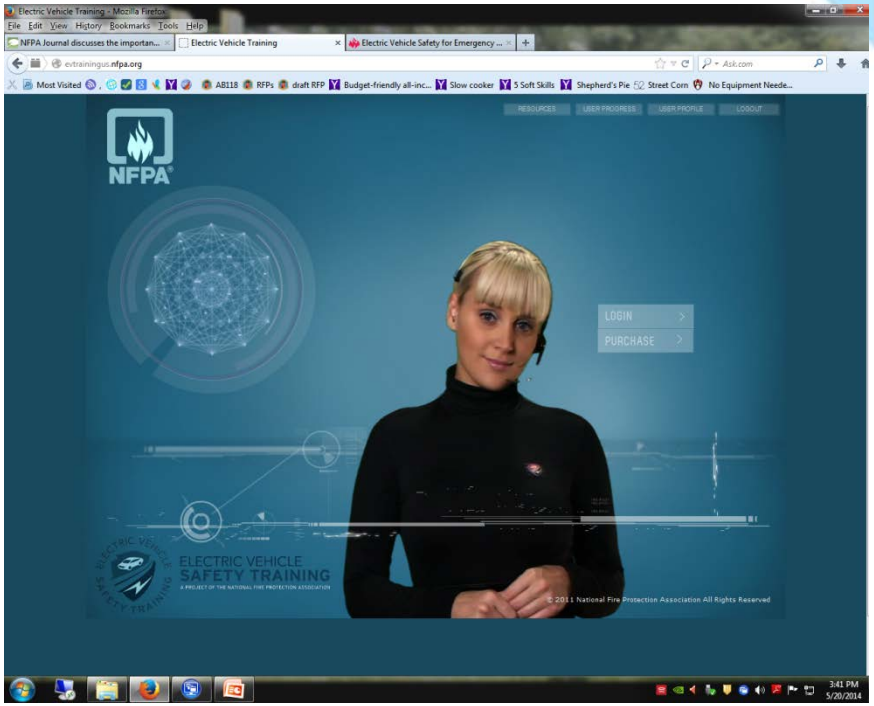
Sign Up for SMS updates

Station Detail

Safety and emergency response tools

CaFCP Fire and Safety micro-site

http://cafcp.org/toolkits/safety



H2-FCEV online training module added to NFPA online EV Safety Training module

http://evtrainingus.nfpa.org/

Collaborations

- CaFCP partners
  - Car manufacturers *(FCEV data, location data, market info)*
  - Federal government agencies *(RC&S, R&D support)*
  - State and regional govt agencies *(regulatory input, funding)*
  - Fuel cell system manufacturers *(expertise, industry data)*
  - Electrolyzer manufacturers *(expertise, renewable H2 data)*
  - Universities *(modeling, scenarios)*
  - National laboratories *(evaluation, data, expertise)*
  - Transit agencies *(FCEB program data, HD experience & expertise)*
  - Non-governmental organizations *(enviro perspective)*
  - Hydrogen gas companies *(H2 infra expertise)*
  - Gas utility company *(industry info)*

Collaborations, *continued…*

- Collaboration and communication
  - Participation of all CaFCP members (govt, car OEM, infra, etc)
  - Particular coordination with govt agencies on (new) tracking mechanisms
- Conventional fuel provider engagement
  - Established strong relationship among major industry associations, particularly in regards to their conferences and events (e.g. POC, SIGMA, WPMA, NACS/Fuels Institute)
- Consumer confidence and FCEV usability (SOSS)
  - Automaker and equipment developers for input on vehicle/customer needs and station capabilities
  - New H2 station operators as stations come online
- National ER program
  - DOE HQ, PNNL, NFPA, National Fire Academy, NAFTC and automakers for review of existing programs and needs

Proposed future work

- Continue updates and further refinement of industry and station reports, including new H2 Station *Smartsheet*
- Continue direct outreach to fuel retailers and marketers
  - Support NACS/Fuels Institute concept proposal to develop H2-FCEV industry review related to retail fuels market (fall 2014)
  - Leverage Los Angeles location of Pacific Oil Conference for extensive H2 & FCEV sessions, ride-n-drive, etc (Sep 2014)
  - Present at future fuel provider industry events; NACS (Oct 2014), WPMA (Feb 2015), SIGMA Spring conference (TBD)
- Add all recently funded CA H2 station (7 in 2013, 28 in 2014) to SOSS as they come online
  - Work with stakeholders to significantly upgrade SOSS platform
- Work with ER stakeholders to complete the national emergency response outline
  - Present concept at NFPA conference (Jun 2014), Continuing Challenge (Sep 2014), and Corona Auto-X (Apr 2015)
  - Conduct "train the trainer" sessions with national outline (TBD)
  - Conduct annual assessment and review of national program

Summary

- Project reporting documents used by lead CA agency as basis for new station status and tracking *Smartsheet*
- Leveraged both CaFCP member and larger stakeholder meetings to facilitate collaborative discussion and progress
- Successfully reached conventional fuel retailers and marketers via 4 major industry conferences, with positive reaction interest in participating in the H2 FCEV industry
- 2014 CA solicitation saw 2.5x more respondents applying for over 6x more station projects from 2013 solicitation
- Developed targeted micro-websites for fuel retailer/marketer and fire/safety market stakeholders
- Added 2 additional H2 stations to SOSS
- Completed initial draft of national emergency response outline with buy-in from the primary industry stakeholders

H2-FCEV Commercialization

Facilitating collaboration, obtaining real world expertise, and developing new analysis tools

Bill Elrick, Technical Program Director
California Fuel Cell Partnership (CaFCP)
(916) 371-2396
belrick@cafcp.org