



CaFCP Executive Board meeting



Car and Driver September 2015



AQMD Hydrogen Station Dedication March 2015

# Clean Fuels Program Advisory Group Meeting September 3, 2015

# SCAQMD Original Hydrogen Station

- Opened August 13, 2004
- First Southern California Hydrogen Highway Network Station



# SCAQMD Hydrogen Station Dedication

Diamond Bar, CA  
March 25, 2015



(Photo by James Carbone for the San Bernardino Sun)



# Delivered Hydrogen Station

1. Hydrogen is generated by central natural gas reformation facility.



2. Hydrogen (33% renewable) is delivered to SCAQMD.



3. Hydrogen is compressed and chilled (-40F) to provide hydrogen at 70 MPa (H70)



4. Dispenser provides both H35 and H70 with self-fueling instructional screens

5. Vehicles fuel with all major credit cards (No cash or debit cards)



5.



# Hydrogen Station Development

- SCAQMD station received CDFA/DMS Final permit February 2015
- CDFA/DMS evaluation of dispensers ongoing



# Lessons Learned



- Having an existing hydrogen station generally helped smooth the permitting process. Additional electrical upgrade delayed construction about 1 month. For delivered hydrogen, city of Diamond Bar required earthquake tie-down.
- Integrating three providers (APCI, Bennett, and Com Data) to optimize POS is complicated
- Changing from dispenser on separate island to dispenser integrated with CNG minimized trenching cost but difficult for left-side fueling
- Three years data collection is important
- Fuel price variability (especially during commissioning).



# More Delivered Hydrogen Station Locations

<b>Name</b>	<b>Station Location</b>	<b>Type</b>
<b>Diamond Bar</b>	<b>21865 Copley Drive, Diamond Bar, CA 91765</b>	<b>Upgrade</b>
<b>West LA</b>	<b>11261 Santa Monica Blvd, Los Angeles, CA 90025</b>	<b>New</b>
<b>UC Irvine</b>	<b>19172 Jamboree Blvd., Irvine, CA 92612</b>	<b>Upgrade</b>
<b>Santa Monica</b>	<b>1819 Cloverfield Blvd, Santa Monica, CA 90404</b>	<b>New</b>
<b>Los Angeles</b>	<b>7751 Beverly Blvd, Los Angeles, CA 90036</b>	<b>New</b>
<b>Lawndale</b>	<b>15606 Inglewood Blvd, Lawndale, CA 90260</b>	<b>New</b>
<b>Redondo Beach</b>	<b>1200 Beryl Street, Redondo Beach, CA 90277</b>	<b>New</b>
<b>Irvine</b>	<b>(seeking new location), Irvine, CA 92604</b>	<b>New</b>







# CARB AB 8 Report

- FCV production survey
- Hydrogen supply and station development
  - About 7 stations per year + O&M funding
- GIS tools and database provides gap analysis & input to CEC co-funding process
- By 2020, hydrogen demand from FCEVs may outpace fueling capacity of publicly funded stations

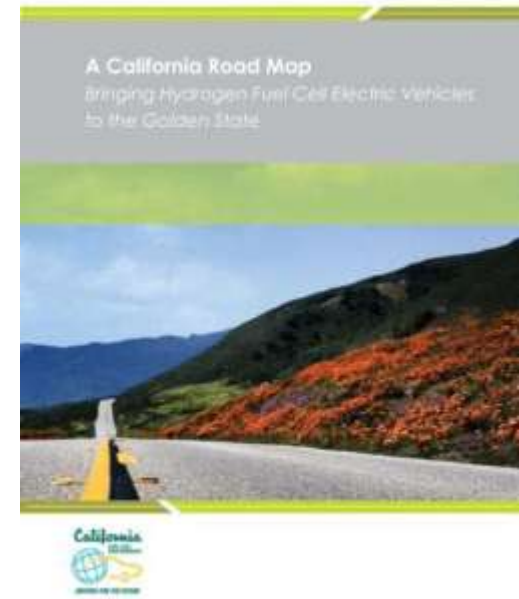




# California Fuel Cell Partnership

## CaFCP: 2015 Annual Membership & Support:

- Bevilacqua-Knight, Inc. \$138,000 total
  - Website station map/status transition to retail
  - MD/HD discussions & support
- *From 2013 to 2016, CaFCP's goals relate to Preparing for Market Launch through coordinated individual and collective effort*
    - Coordination
    - Collaboration
    - Communication



# HyStEP Background

- Customers need a safe, fast, and complete fill
- The Society of Automotive Engineers has adopted SAE J2601: 2014 as the standard hydrogen fueling protocol [http://standards.sae.org/j2601\\_201407/](http://standards.sae.org/j2601_201407/)
- The Canadian Standards Association CSA HGV 4.3 (test method), defines how to test hydrogen dispensers for compliance with SAE J2601
- Currently, auto manufacturers individually test station performance using their own specially-equipped vehicles
- CARB and DOE have led an effort to build a Hydrogen Station Equipment Performance (HyStEP) testing device



# Federal & CA Current Incentives

- \$2,500 – \$7,500 PEV federal tax credit
- Up to \$5,000\* through CA Clean Vehicle Rebate  
\*for qualifying fuel cell vehicles  
\*\* up to \$15k additional for public fleet
- CA HOV lane access extended to 1/1/19  
PHEVs capped at 85,000 (70k issued)
- CA ZEV Action Plan
- 8-State ZEV Action Plan to sell 3.3M ZEVs by 2025
- CEC funding for Infrastructure; EVSE & H2
- Off-peak (TOU) electric rates

3.3 MILLION  
ZERO-EMISSION VEHICLES  
BY 2025



# AQMD 2015 Demonstration Vehicles

Vehicle Type	Demonstration Vehicles In Use
<b>Plug-In Hybrid</b> 2012 Toyota Prius PHV 2013 & 2014 Chevrolet Volt 2014 Ford Fusion & C-Max ENERGY 2014 VIA vans	2 5 + 2 3 2
<b>Battery Electric</b> 2012 Toyota Rav4 EV 2013 Honda Fit EV	1 2
<b>Fuel Cell</b> 2012 Mercedes F-Cell 2013 & 2015 Hyundai Tucson FCEV <i>2016 Toyota Mirai (coming soon)</i>	2 2 2



# Clean Air Choices Program

- Features the cleanest new retail passenger vehicles
- Part of the AQMD website  
([www.aqmd.gov/home/programs/community](http://www.aqmd.gov/home/programs/community))
- Out of 61 models listed for 2015
  - 13 Zero Emission (battery electric or hydrogen fuel cell)
  - 19 Advanced Technology Partial Zero Emission, new TZEVs
    - 1 natural gas (CNG)
    - 11 gasoline hybrid
    - 5 plug-in gasoline hybrid
  - 38 Partial Zero Emission gasoline
- Outreach Efforts with clean and efficient vehicles.
- Website updates



CleanAir  
CHOICES

