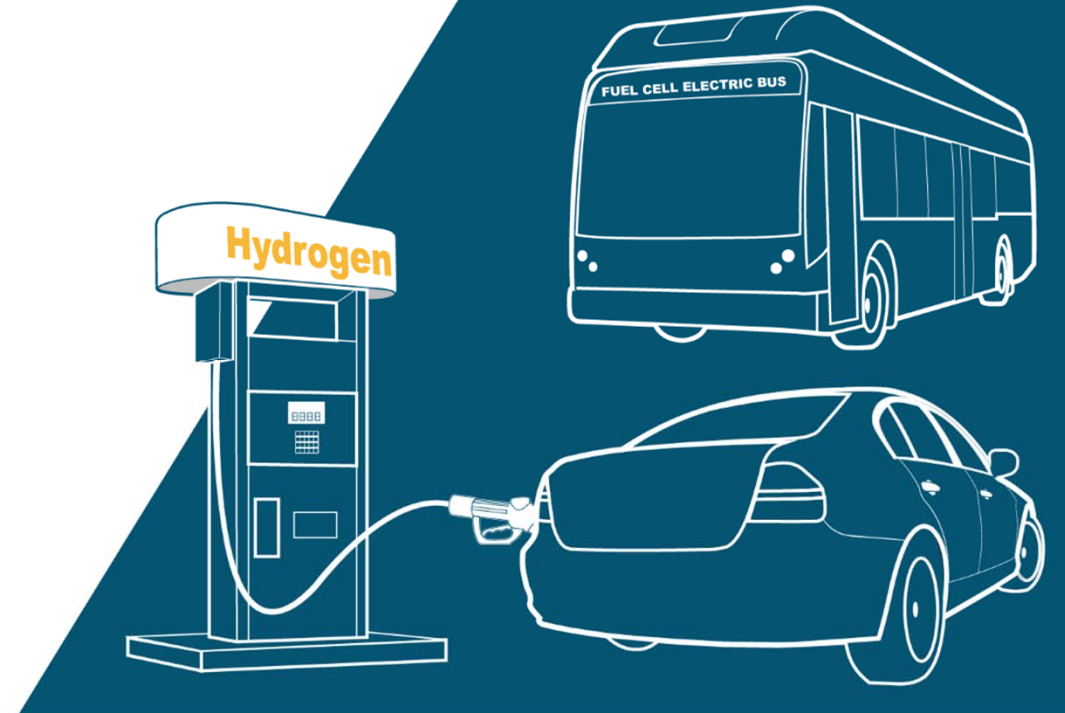
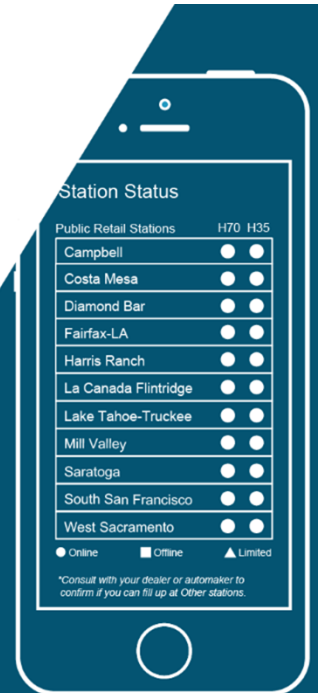


# Retail Hydrogen Fueling Station Network Update

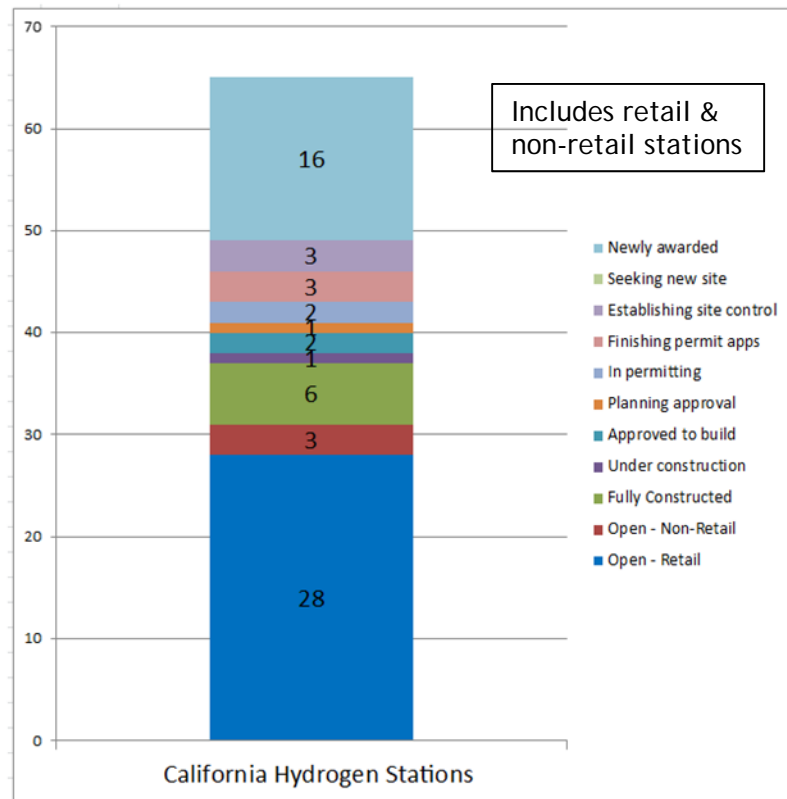
Joe Gagliano & Ben Xiong

July 26, 2017



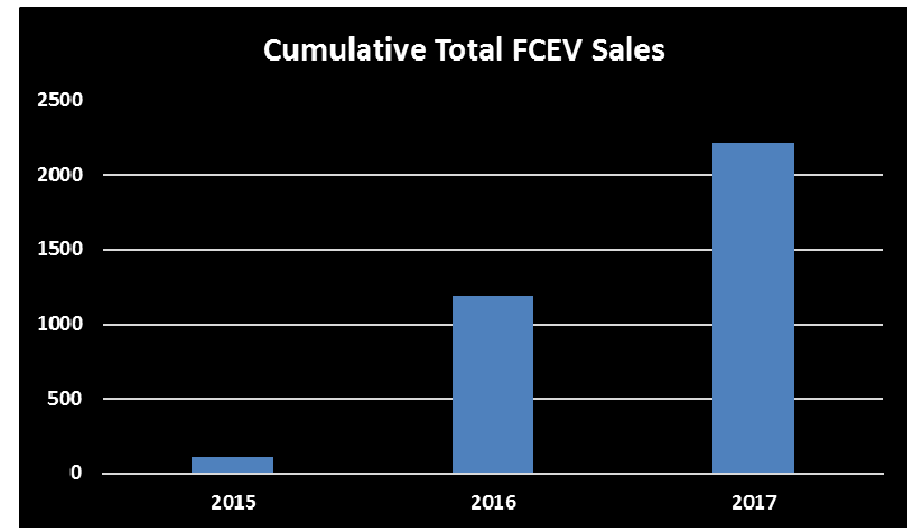


# California H2 Station Network & FCEV Totals

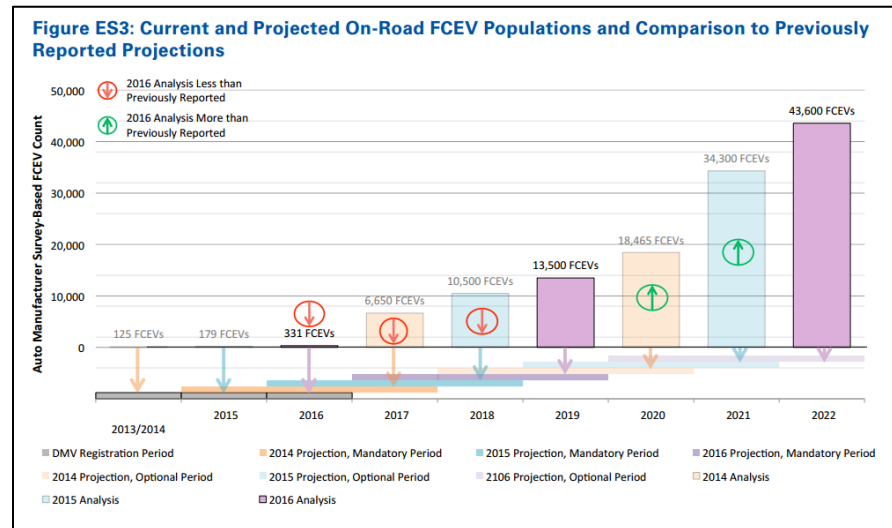


Retail Openings in 2016: 25 stations  
 Forecast estimate 2017: up to ~33  
 Forecast estimate 2018: ~40  
 Forecast estimate 2019/2020: ~56

Source: Go-Biz Smartsheet



Source: HybridCars.com



Source: ARB July 2016 AB 8 Report - OEM Surveys



# Retail Station Openings 2017

- Recently Opened



- Forecast Next Stations

- San Ramon
- Torrance
- Fremont
- LAX
- Thousand Oaks
- Ontario\*
- Woodside\*



# New Hydrogen Stations

- 16 stations proposed for awards
  - FirstElement Fuel (8)
  - Shell (7)
  - Air Liquide (1)
- Next steps: CEC business meeting approval (Shell) & execution of grant agreement (FEF/AL)
- O&M awards in separate notice of proposed awards

- San Francisco (3)
- Berkeley
- Sherman Oaks
- Sunnyvale
- Walnut Creek
- Santa Monica
- Oakland
- Huntington Beach
- San Diego
- Sacramento (2)
- Campbell
- Irvine
- Santa Nella (1-5)

[www.energy.ca.gov/contracts/GFO-15-605\\_NOPA.pdf](http://www.energy.ca.gov/contracts/GFO-15-605_NOPA.pdf)

[http://energy.ca.gov/contracts/GFO-15-605\\_NOPA\\_Revised.pdf](http://energy.ca.gov/contracts/GFO-15-605_NOPA_Revised.pdf)





# H2 Station Network

June 2017

## Northern CA Hydrogen Stations

### ● Retail: Open

Campbell - Winchester Blvd  
Hayward  
Mill Valley  
San Jose  
Saratoga  
South San Francisco  
Lake Tahoe-Truckee  
West Sacramento

### ● Other: Open

Emeryville - AC Transit  
Oakland - AC Transit

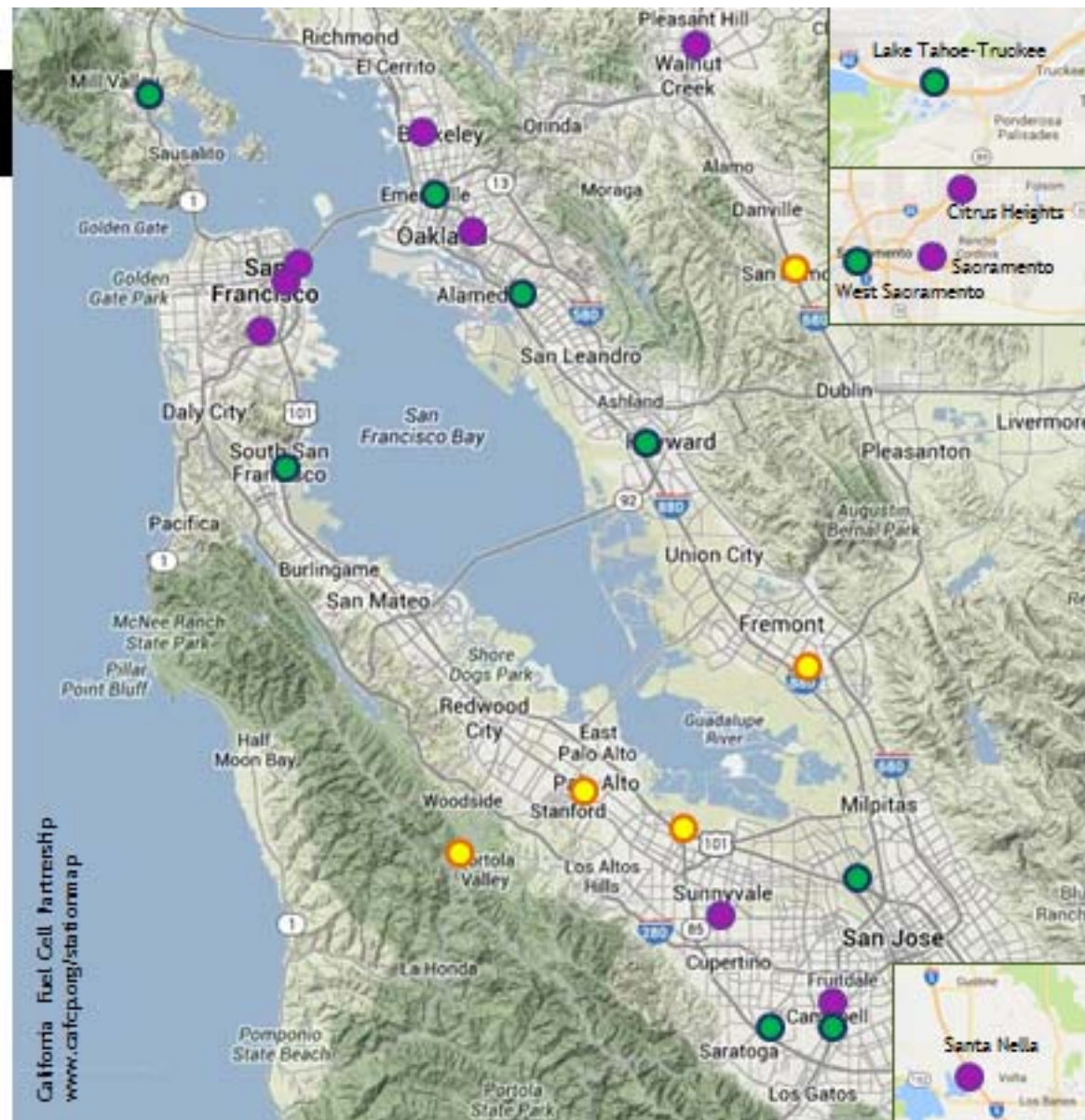
### ● Retail: In Development

Fremont  
Mountain View  
Palo Alto  
\*Rohnert Park  
San Ramon  
Woodside

*\*Not shown on map*

### ● Proposed\*\*

Berkeley  
Campbell - East Hamilton Ave  
Citrus Heights  
Oakland - Grand Ave  
Sacramento  
San Francisco - Third St  
San Francisco - Harrison St  
San Francisco - Mission St  
Santa Nella  
Sunnyvale  
Walnut Creek





# H2 Station Network

June 2017

## Southern CA Hydrogen Stations

### ● Retail: Open

Anaheim  
Costa Mesa  
Del Mar  
Diamond Bar  
Fairfax-LA  
Harris Ranch  
Hollywood  
La Cañada Flintridge  
Lake Forest  
Lawndale  
Long Beach  
Playa Del Rey  
Riverside  
San Juan Capistrano  
\*Santa Barbara  
Santa Monica - Cloverfield Blvd  
South Pasadena  
UC Irvine  
West LA  
Woodland Hills

### ● Other: Open

Burbank  
Newport Beach  
\*Thousand Palms - SunLine Transit

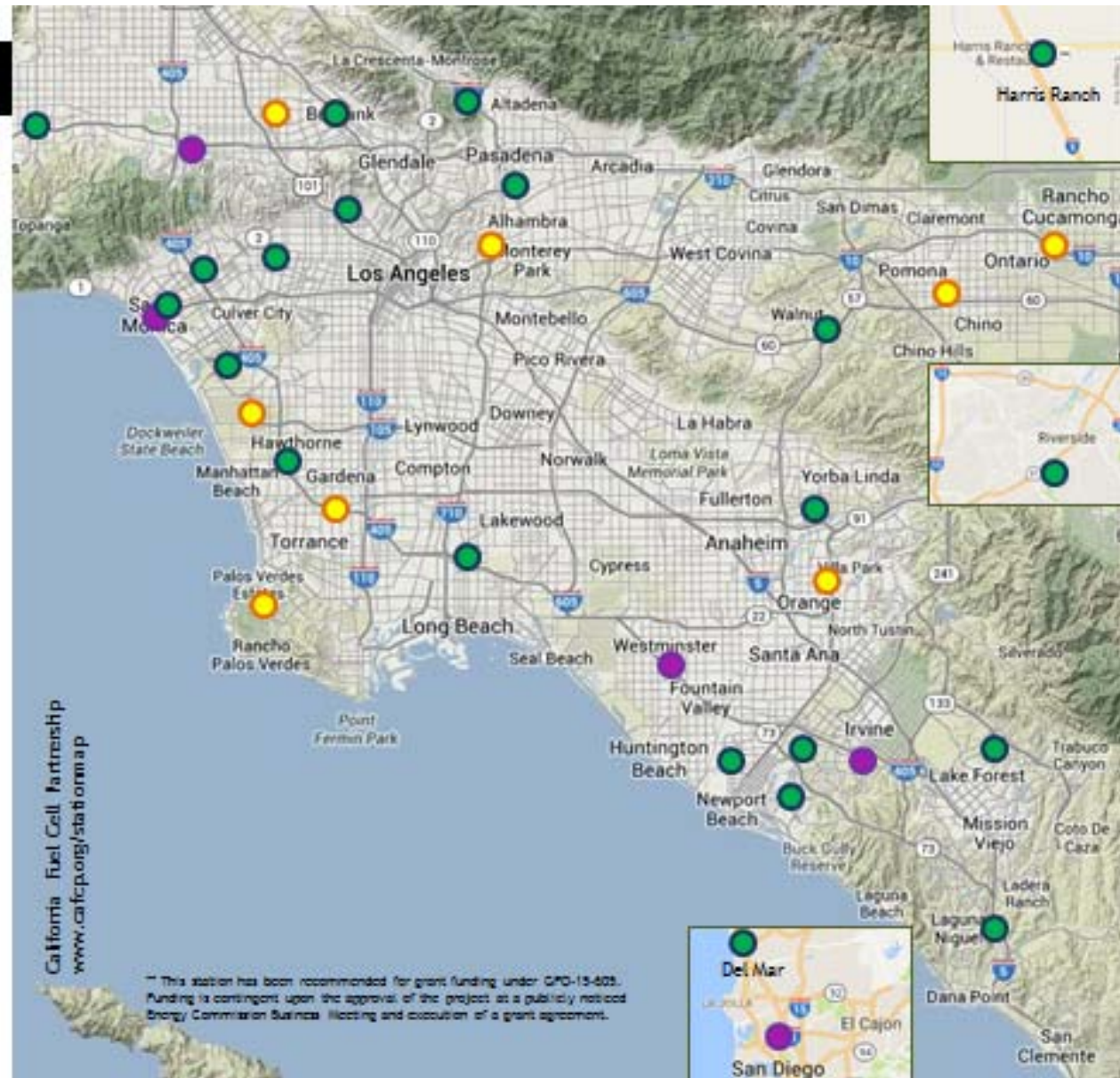
### ● Retail: In Development

Cal State LA  
Chino (upgrade)  
LAX (upgrade)  
North Hollywood  
Ontario  
Orange  
Rancho Palos Verdes  
\*Thousand Oaks  
Torrance

\*Not shown on map

### ● Proposed\*\*

Irvine  
Huntington Beach  
San Diego  
Santa Monica - Lincoln Blvd  
Sherman Oaks







# CAFCP Station Map & SOSS

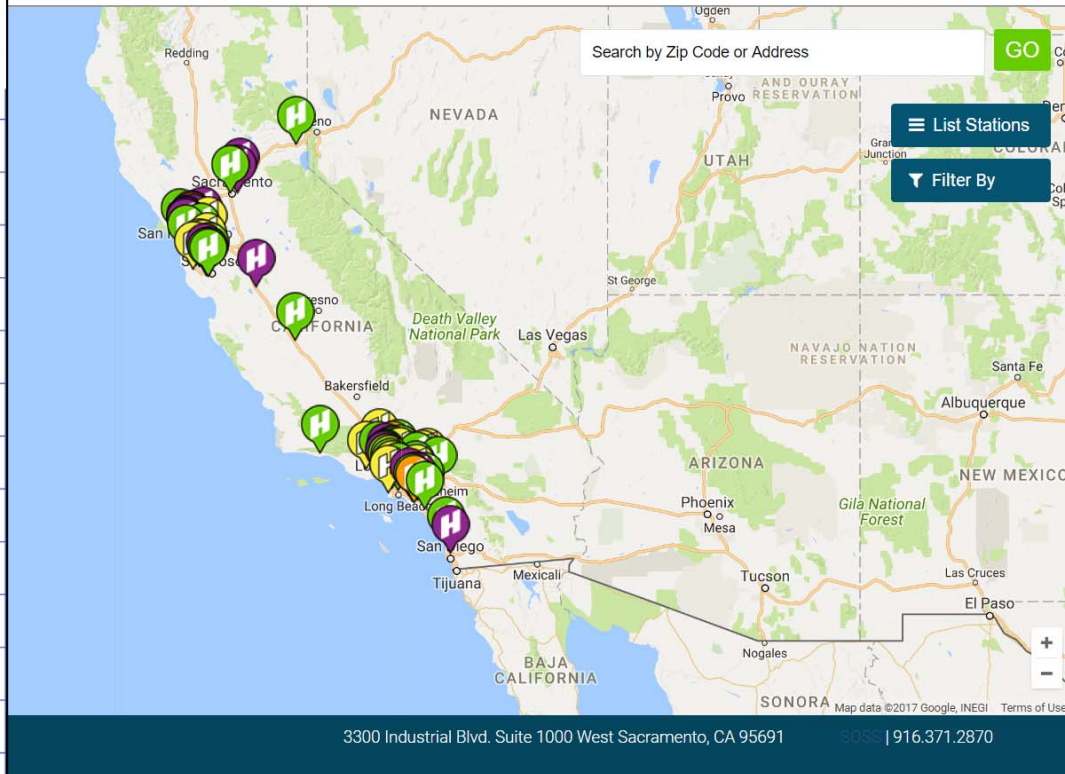


HOME CARS STATIONS BENEFITS BUSES & TRUCKS RESOURCES



## Station Status

Retail Stations	H70	H35	
Anaheim	●		
Campbell	●	●	
Costa Mesa	●	●	
Del Mar	●	●	
Diamond Bar	●	●	
Fairfax-LA	●	●	
Harris Ranch	●	●	
Hayward	●	●	
Hollywood	●	●	
La Canada Flintridge	●	●	
Lake Forest	●	●	
Lake Tahoe-Truckee	●	●	
Lawndale (New)	●	●	
Long Beach	●	●	
Mill Valley	●	●	
Playa Del Rey	●	●	
Riverside	●	●	



<http://cafc.org/stationmap>  
<http://m.cafc.org>



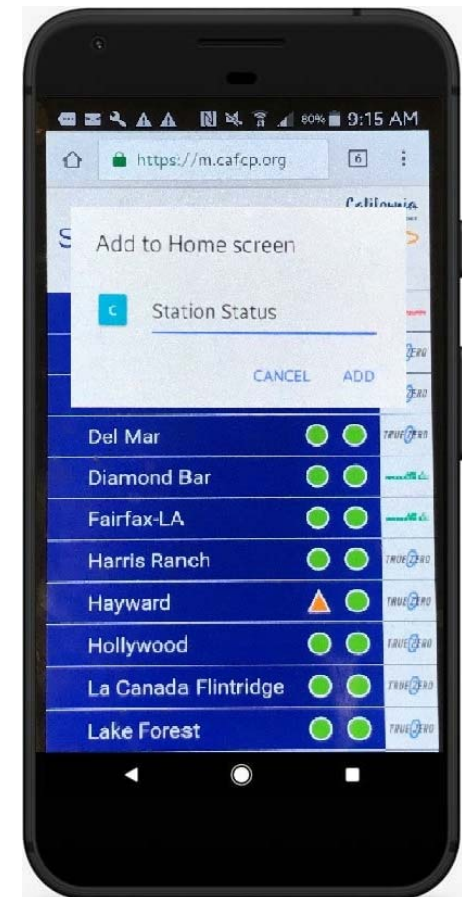
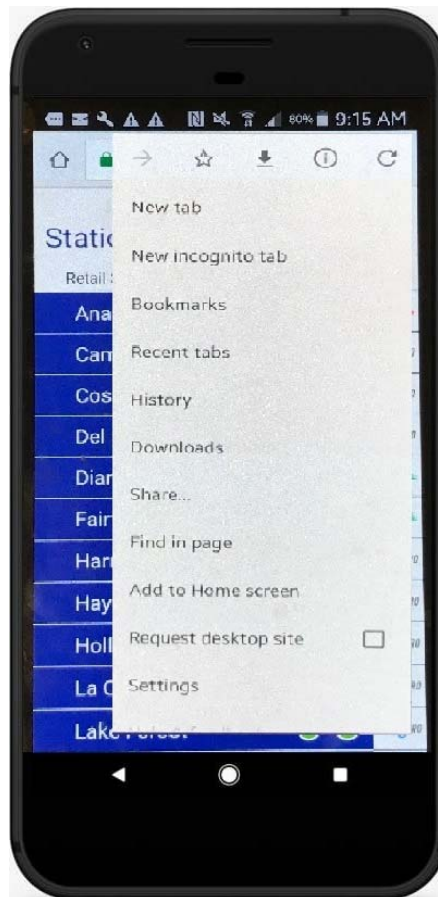
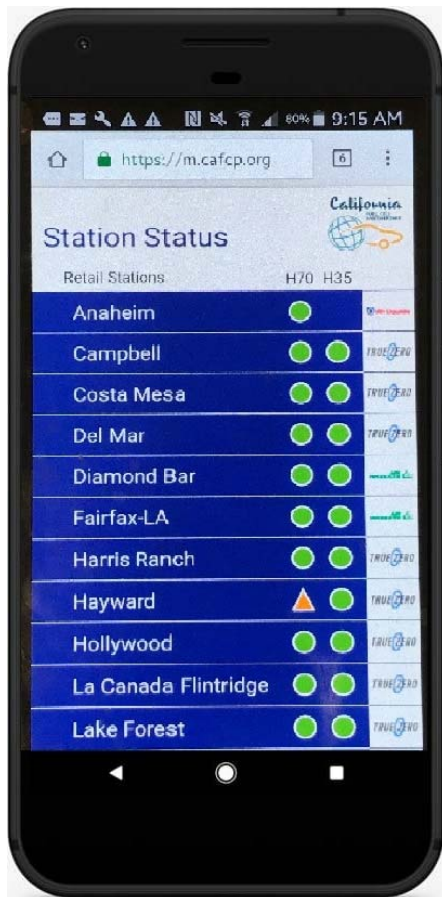
# How to add SOSS to home screen on an iPhone







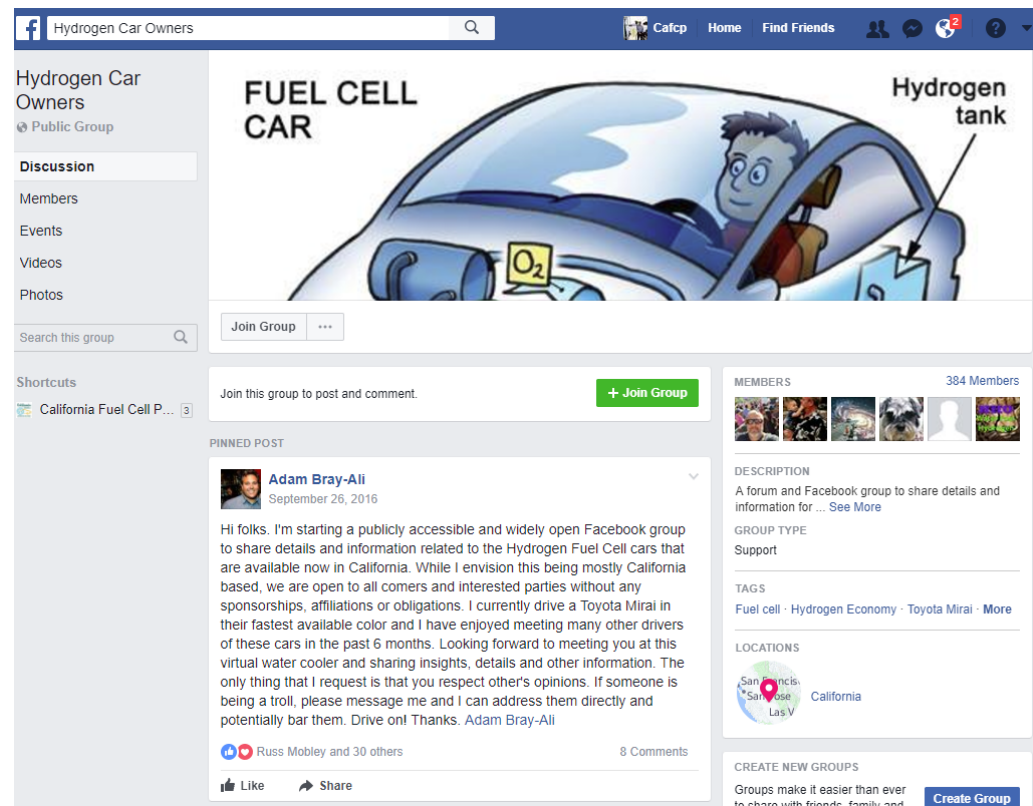
## How to add SOSS to home screen of an Android phone





# Facebook Users Groups

- Hydrogen Car Owners
- Honda Clarity Owners
- Toyota Mirai Owners
- Not administered by CaFCP
- Share experience
- Station information
- Focus group request





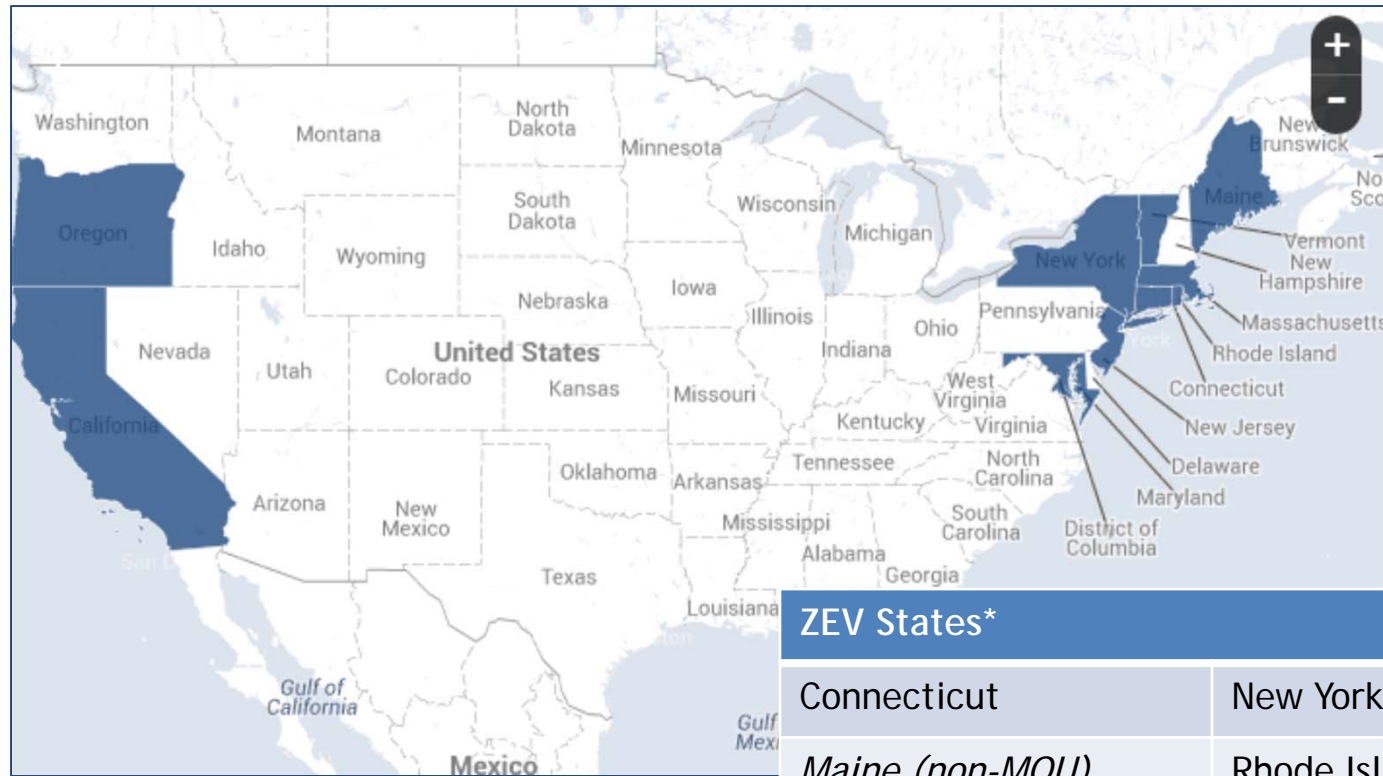
# How to fill & disengage the nozzle







# ZEV States Outside California



## ZEV States\*

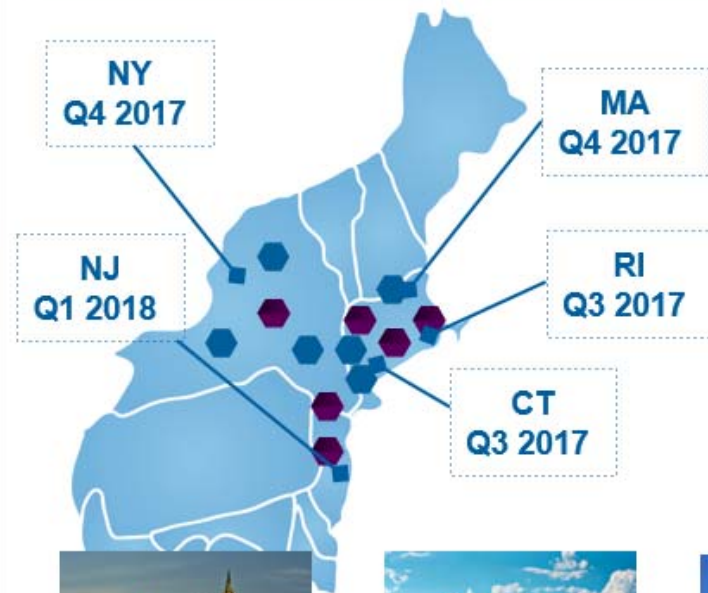
Connecticut	New York
<i>Maine (non-MOU)</i>	Rhode Island
Maryland	Oregon
Massachusetts	Vermont
<i>New Jersey (non-MOU)</i>	

\*8 State MOU - 3.3M ZEVs by 2025



# Northeast Retail H2 Stations

## Building the northeast



Network of 12 stations in collaboration with:



Dedicated hydrogen supply chain provided by:



### New York

Bronx, NY  
Hempstead, NY  
Brooklyn, NY  
Site Location TBA



### Connecticut

Hartford, CT



### Massachusetts

Braintree, MA  
Mansfield, MA  
Site Location TBA  
Site Location TBA



### New Jersey

Lodi, NJ



### Rhode Island

Providence, RI

Name & department

1

2016

aB&T

World leader in gases, technologies and services for Industry and Health





## In Closing

- Retail hydrogen fueling station network is starting to populate key markets
  - 28 retail hydrogen stations open throughout CA
  - Retail hydrogen stations now under construction in Northeast US
  - Work is also beginning on fuel cell trucks & fueling stations
- Over 2,200 light-duty FCEVs on California roadways
- Customer experience is a top priority
- Station reliability continues to increase
- Members are in discussions to begin planning for 500+ retail stations





# Questions/Comments?



Joe Gagliano

714-393-2520

[jgagliano@cafcp.org](mailto:jgagliano@cafcp.org)

# CaFCP Members

Air Liquide  
Alameda-Contra Costa Transit District (*AC Transit*)  
Automotive Fuel Cell Cooperation  
BAE Systems  
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 the Environment (*CTE*)  
Comdata  
Daimler  
Energy Independence Now  
FASTECH  
FirstElement Fuel, Inc.  
General Motors  
Honda  
Hydrogenics

Hydrogen-Xt, Inc.  
HyGen  
Hyundai  
ITM Power  
Institute of Transportation Studies, UC Davis  
KPA  
Linde North America, Inc.  
National Fuel Cell Research Center, UC Irvine  
National Renewable Energy Laboratory (*NREL*)  
Nel Hydrogen  
Nissan  
Office of Governor Edmund G. Brown Jr.  
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  
University of California, Berkeley  
Volkswagen



# CaFCP Members

