

REFUEL: SAN DIEGO REGIONAL ALTERNATIVE FUEL COORDINATING COUNCIL

HYDROGEN SUBCOMMITTEE MEETING

JANUARY 15, 2015

JANUARY 12, 2015 MEETING SUMMARY

File number 3200900

1. WELCOME AND INTRODUCTIONS

The meeting began with introductions and an overview of the San Diego Regional Alternative Fuel Coordinating Council (Refuel) and the goal of the Hydrogen Subcommittee. Refuel will help guide and shape the products of this project, and each alternative fuel subcommittees will devote further attention to each fuel.

2. BACKGROUND ON HYDROGEN

There are many fuel cell electric vehicles (FCEV) being announced by automakers.

- Honda and Toyota have new vehicles coming to market; Hyundai already has a FCEV.

Basic information about FCEVs

- Water vapor is the only tailpipe emission from FCEVs
- Takes 3-5 minutes to fill a FCEV tank
- Most FCEVs get 300-450 miles on one tank of fuel

Hydrogen Fuel Stations

- Currently there are nine hydrogen fuel stations in California; no two are the same.
 - This makes it difficult to obtain a permit for installing hydrogen stations because each station is very different and new installations cannot necessarily point to a "standard" type.
- Hydrogen stations are expensive, but the CEC has helped enable growth.
 - \$90 million given to hydrogen projects
 - May 2014 – first hydrogen CEC solicitation to be over-subscribed. This indicates market growth.
- When leasing a FCEV, the fuel is included in the price because there is not yet a standard for dispensing/selling fuel by weight.
 - Cal State LA station will be the first to sell hydrogen by weight
 - Conventional metering for fuel volume (similar to what is used to dispense natural gas) is difficult for hydrogen because the molecules are very small; therefore the meter is less accurate than gasoline meter. (+/- 4% accuracy for hydrogen; +/- 0.5% accuracy for gasoline.)

Future for Hydrogen Education

- Need to extend existing PEV Readiness Plans and partnerships to include FCEVs and hydrogen

- Local governments should include high-level policy objectives about ZEVs (which includes FCEVs) in general plan updates and other relevant policy documents
- Should emphasize that ZEVs include not just battery electric vehicles and plug-in hybrid electric vehicles, but fuel cells electric vehicles as well
 - Ensure local policies for battery vehicles extend to FCEVs as well

Questions/Comments

- Dale Snow, Mossy Auto Group, asked about how to get a hydrogen station installed on Mossy property in Pacific Beach.
 - Keith Malone will connect Mr. Snow with CAFCP staff managing station recruitment
- Mike Evans, Shell, believed more attention should be placed in the advocacy area to dispel public mistrust of hydrogen safety. He asked how CAFCP demonstrates how the benefits of hydrogen outweigh the disadvantages.
 - CAFCP conducts local outreach with city officials after building permits are acquired for the installation of a hydrogen station.
- Mr. Evans wanted more maps of current and future infrastructure.
 - Ideally, there would be siting analyses done for hydrogen stations similar to what was done for electric charging stations.
- Anna Lowe, San Diego Association of Governments (SANDAG), asked about the costs and process of getting a hydrogen station installed.
 - Hydrogen stations can cost from \$1.2 million for hydrogen delivered as a fuel to \$5 million if it contains a more complex system (such as using renewable energy processes to create hydrogen).
 - CEC will provide up to 70% of the funding for a station; 100% if the station uses renewable energy to generate hydrogen.
 - Former gas stations are good places to put stations. They need to be in a well-lit place with an area for buying food.
 - The basic steps to apply with the CEC for station funding:
 - Find a spot for the station (brightly lit, good location)
 - Find an equipment provider
 - Send proposal to CEC
 - Station visibility from the street is an important factor.
- It is stressed again that local governments should be distinct between FCEVs and battery electric vehicles when developing documents about ZEVs. Greater education for municipal staff is needed.

3. NEXT STEPS

The following are next steps identified by the hydrogen subcommittee:

- Begin preparation for upcoming hydrogen event
- Develop maps of infrastructure (current/future)
- CAFCP will provide information about fuel metering and sales

The next Refuel Coordinating Council will be held on Thursday, January 15, 2015 from 1:00-3:00 pm.

Attendees / Call-in Participates

- Mike Evans – Shell
- Dale Snow – Mossy Auto Group
- Nilmini Silva-Send – University of San Diego, Energy Policy Initiatives Center
- Keith Malone – California Fuel Cell Partnership (CAFCP)
- Chris White – CAFCP
- Anna Lowe – San Diego Association of Governments (SANDAG)
- Michelle Martinez - SANDAG
- Kevin Wood – Center for Sustainable Energy (CSE)
- Jessica Jinn – CSE