

REFUEL: SAN DIEGO REGIONAL ALTERNATIVE FUEL COORDINATING COUNCIL

MEETING NOTICE AND AGENDA

Date: Thursday, April 16, 2015

Time: 1:00 p.m. to 3:00 p.m.

Location: Center for Sustainable Energy
9325 Sky Park Court, Suite 100
San Diego, CA 92123

Staff Contact: Kevin Wood
Tel: (858) 244-7295
Email: kevin.wood@energycenter.org

AGENDA HIGHLIGHTS

- REFUEL SUBCOMMITTEE UPDATES
- REGIONAL ALTERNATIVE FUELS ASSESSMENT UPDATE
- REGIONAL BARRIERS TABLE UPDATE

In compliance with the Americans with Disabilities Act (ADA), CSE will accommodate persons who require assistance in order to participate in Refuel meetings. If such assistance is required, please contact CSE at (858) 244-1177 at least 72 hours in advance of the meeting.



www.sdcleancities.org

www.sandag.org/refuel

Refuel

Thursday, April 16, 2015

ITEM #		RECOMMENDATION
1.	WELCOME AND INTRODUCTIONS	
2.	PUBLIC COMMENT	
	<p>Members of the public shall have the opportunity to address Refuel: San Diego Regional Alternative Fuel Coordinating Council on any alternative fuel (AF) issue that is not on this agenda. Public speakers are limited to three minutes or less per person. Refuel members may provide information and announcements under this item.</p>	
	REPORT ITEMS	
+3.	APPROVAL OF MEETING MINUTES	APPROVE
	<p>Refuel: San Diego Regional Alternative Fuel Coordinating Council (Refuel) is asked to review and approve the minutes from its January 15, 2015 meeting with corrections.</p>	
+4.	SUBCOMMITTEE UPDATES	INFORMATION
	<p>Staff will provide a summary and discuss next steps resulting from each of the Refuel subcommittees that have met since January: Biofuels and Electricity. Staff also will provide a summary of any other meetings where Refuel was discussed.</p>	
5.	REFUEL FORMATION DOCUMENTS	ACCEPT
	<p>Refuel reviewed and motioned to accept the formation documents: (1) Charter; (2) Mission Statement; and (3) Goals at the January 15, 2015 meeting. A substitute motion is required to officially accept the formation documents. The formation documents can be found here: www.sandag.org/refuel</p>	
6.	REGIONAL ALTERNATIVE FUEL ASSESSMENT UPDATE	DISCUSSION/ACCEPT
	<p>One of the first deliverables for Refuel is to develop a regional alternative fuel assessment, which includes information gleaned from an existing conditions report and survey. Staff will present on the draft regional alternative fuels assessment and lead a discussion about the document. Refuel is asked review and accept the regional alternative fuel assessment. The full assessment can be found here: www.sandag.org/refuel</p>	
+7.	SAN DIEGO REGIONAL BARRIERS TO ALTERNATIVE FUEL DEPLOYMENT UPDATE	DISCUSSION
	<p>Ongoing Refuel activities and meetings continue to inform the alternative fuel barriers table. This table is a working document meant to be modified and updated as deliverables are met and barriers are addressed. Staff will provide an update since the last meeting for continued discussion by Refuel.</p>	
+8.	UPCOMING MEETING DATES	INFORMATION
	<p>Staff will share information on upcoming subcommittee meeting dates and provide an updated meeting schedule.</p>	
9.	MATTERS FROM MEMBERS	INFORMATION
	<p>Time permitting; Refuel members are encouraged to discuss additional topics of interest.</p>	
10.	ADJOURNMENT	

REFUEL: SAN DIEGO REGIONAL ALTERNATIVE FUEL COORDINATING COUNCIL

April 16, 2015

JANUARY 15, 2015 MEETING MINUTES

File number 3200900

1. WELCOME AND INTRODUCTIONS

Chair Chris Schmidt (Caltrans), called the meeting to order at 1:09 p.m. and welcomed everyone to the meeting.

2. OCTOBER 16, 2014 MEETING MINUTES (APPROVE)

Susan Freedman (SANDAG) motioned to approve the meeting minutes from October 16, 2014, and [update with input from Refuel] seconded the motion. The motion carried without opposition.

3. PUBLIC COMMENT

Joel Pointon (San Diego Gas & Electric [SDG&E]) mentioned that there will be an upcoming meeting with the California Energy Commission (CEC) to discuss upcoming infrastructure funding opportunities. Interested Refuel members are to speak to Mr. Pointon or Ms. Freedman to get input to the CEC.

REPORTS

4. SUBCOMMITTEE UPDATES (INFORMATION)

Chair Schmidt informed Refuel that since October 2014 the electric, hydrogen, and propane subcommittees met. Allison Wood (SANDAG) and Kevin Wood (San Diego Regional Clean Cities Coalition) briefed Refuel on key topics and takeaways from the meetings.

Ms. Wood shared that the barriers table, created from the San Diego Regional Plug-In Electric Vehicle Readiness Infrastructure (REVI) Working Group, guided the Electric Subcommittee meeting as members discussed barriers of implementing infrastructure. Legislation and laws were introduced that have been passed dealing with electric vehicle supply equipment (EVSE). Ms. Wood informed Refuel that SANDAG and the Center for Sustainable Energy (CSE) have been awarded \$300,000 in funding to focus on charging infrastructure implementation around the region, with work beginning in mid-2015. At the meeting, resources from California's Plug-In Electric Vehicle Collaborative (PEV Collaborative) were shared and the role of energy storage for infrastructure was discussed. The next Electric Subcommittee meeting will be in March 2015.

Mr. Wood discussed highlights from the Propane Subcommittee meeting. At the meeting, Steve Moore (Expo Propane) gave a background on Propane Autogas, which is the world's most widely used alternative fuel. San Diego encompasses large users of Propane Autogas, such as the Old Town Trolley Tours, UPS, and airport shuttles. Propane Auto gas is domestically produced, is priced lower than gasoline, and is a good fuel type for light-duty to medium-duty vehicles like school buses, delivery trucks, forklifts, and landscaping equipment. Mr. Wood mentioned that station sizes vary from small to large and each have issues that they face dealing with screenings, and permitting. Michelle Heaton (Amerigas Propane) spoke on justifications for purchasing propane

vehicles, and will provide more information on cost of ownership to Refuel members. Next steps include the creation of a flowchart analyzing the permitting process in order to help cities standardize this process.

Mr. Wood provided what was discussed at the Hydrogen Subcommittee meeting. Keith Malone (California Fuel Cell Partnership) presented information to the subcommittee on hydrogen's future in the region. Mr. Malone stated that there are currently nine to eleven stations open for operation, and the State has funded enough stations to bring that to over 50 stations by 2016, with one in the San Diego Region by the end of 2015. There are a number of automakers leasing hydrogen vehicles, with Toyota and Honda to join in 2015. The most feasible way to implement hydrogen infrastructure would be to install pumps at existing gas stations. Mr. Moore mentioned that fill up time is less than 10 minutes, and the fuel provides a range of 250-300+ miles on a single fill-up. Next steps include the Clean Cities Coalition to host a large public workshop to give more information about this fuel type and dispel myths.

There is a timetable for upcoming subcommittee meetings, and days will be determined in the following weeks.

Refuel members had the following questions and comments:

- Mo Lahsaie (City of Oceanside) asked if the installed hydrogen stations are self-generating fuel or provided fuel by transfers. Mr. Malone answered that hydrogen is being trucked in; however, methods will change as 33 percent of hydrogen sold has to be created by renewable sources.
- Joel Pointon (SDG&E) inquired as to what myths there were about hydrogen fuel. Mr. Wood explained that hydrogen is given the perception that it is dirtier than gas and it has major safety concerns.
- Mike Evans (San Diego Regional Chamber of Commerce) commented that having the proper nomenclature on hydrogen efforts is important in the equivalent portrayal of this fuel. Mr. Wood agreed and noted that staff will focus on using proper and accurate nomenclature on future toolkits that are readily understood by users.
- Colin Santulli (CSE) asked if there are other regions creating Fuel Cell Readiness Plans. Mr. Wood mentioned that Los Angeles and Northern California are creating Fuel Cell Readiness Plans; however, for the San Diego region, it will be a smaller effort. Mr. Malone encouraged SANDAG to apply for the CEC grant so at least two stations can be in the San Diego region.
- Ms. Freedman added that there still could be an opportunity to apply for a small grant with the CEC for fuel cell and hydrogen projects. Staff will inquire and apply, and at the next subcommittee meeting members can discuss possibilities.

5. REFUEL FORMATION DOCUMENTS (ACCEPT)

Chair Schmidt reintroduced the formation documents that were presented on last meeting. Members were asked to adopt these documents that would help guide decisions. ~~Ms. Heaton motioned to approve the documents, and Ms. Freedman seconded the motion. The motion carried without opposition.~~ [This item requires a new motion and vote from Refuel as Ms. Heaton is a non-voting participate of Refuel and therefore, cannot make a motion.]

Refuel members had the following questions and comments:

- Sharon Cooney (Metropolitan Transit System [MTS]) inquired as to why the membership list listed primarily cities. Ms. Freedman explained that many cities are members in order to address barriers they are facing towards implementation, and if recommendations were to be given they would be related to local government implementation. This structure is also proposed by the CEC.
- Mr. Evans asked if there will be an anticipated outline for the final report. Chair Schmidt assured that an outline will be created for input of Refuel members.
- Ms. Freedman mentioned that in the next six months, staff will be contacted by the CEC to share region-to-region experiences.
- Mr. Evans asked if Refuel was the continuation of the work done by the REVI working group. Chair Schmidt answered that like REVI, this forum is to inform cities on alternative fuels to ensure they are ready for alternative energy adoption.
- Mr. Wood emphasized that there are existing tools and resources surrounding alternative fuels. Staff will incorporate work that has been done and leverage and repackage it in a way that better serves the San Diego region.

6. REGIONAL ALTERNATIVE FUEL ASSESSMENT UPDATE (DISCUSSION)

Mr. Wood presented on an alternative fuels existing conditions report. This report gives detailed information on how the region has already addressed alternative fuels in the past, shows the current state of alternative fuel use, and creates a guidance to better understand the regional transportation energy landscape. He informed Refuel that alternative fuel infrastructure and vehicle purchases have grown over the past two decades, with public electric vehicle (EV) infrastructure growing exponentially; however, gasoline consumption in the region is still continuing to increase a percent per year.

Mr. Wood provided a table of alternative fuel-oriented state policies and goals. He mentioned that regulations are motivating consumers to consider driving alternative fuels vehicles. The state has a petroleum reduction goal to reduce usage by up to 50 percent by 2030. To align with state goals, San Diego County needs to reduce petroleum consumption further to meet 15 percent goal.

Mr. Wood spoke on the CALGreen Code mandatory requirements and voluntary actions for multi-family residential, single-family residential and nonresidential construction that will begin on July 1, 2015. He also described municipal alternative fuel goals, like the City of San Marcos' goal of reducing the city's vehicle fleet GHG emissions by 15 percent below 2005 levels by 2020. The San Diego region has applied for and received many grants offered by the CEC dealing with alternative fuels, and since 2012 have received \$9.2 million of funding. Mr. Wood also touched on the California Vehicle Rebate Program (CVRP) funding in San Diego County, which has provided rebates to over 7,400 EVs at a value of \$16.8 million. It is also important to note that the San Diego region has received more funding per capita than any other region in the state. Additionally, the California Hybrid and Zero-Emission Truck and Bus Voucher Incentive Project (HVIP) has provided vouchers for 169 medium to heavy-duty vehicles equaling close to \$5 million.

Mr. Wood then discussed the initial survey results of the alternative fuels survey that was distributed via email in December 2014. Initial survey results indicated that respondents would like guidance on availability of funding opportunities for alternative fuel projects and would like more education on different fuel types. The San Diego Regional Alternative Fuels Assessment will be finished in March, and there will be a draft for members to

comment on. Mr. Wood then opened the floor to discussion on what other information can be provided to help members better understand regional transportation energy use.

Refuel members had the following questions and comments:

- Ms. Freedman inquired if staff is looking for wider participation from local governments on the survey. Mr. Wood explained that the survey was sent to a limited amount of Refuel participants, but believes that a wider scope of responses would be helpful.
- Mr. Evans asked what is important to track as Refuel tries to meet these goals, is it different types and quantity of each vehicles in the region. He also asked how multi-family residential regulations can be implemented. Mr. Evans also believes that more than three percent of parking spots should be PEV ready.
- Mr. Wood commented that with the funding that will come with the ZEV implementation project, staff will work with cities so they better understand CALGreen Code provisions.
- Mr. Pointon informed Refuel that the CALGreen provisions act as recommendations. He mentioned that currently the discussion is on Title 24 regulations, and ADA requirements that will be implemented in 2017.
- Ms. Freedman requested to see per capita data in order to compare regions.
- Chair Schmidt asked how readily available data is for alternative fuel vehicles and infrastructure. Mr. Pointon explained that DMV data allows utilities to get EV data; however, there are limitations with data on types of vehicles.
- Randy Schimka (SDG&E) commented on the difficulty of retrieving EV data. He mentioned that some car manufacturers have the same models that are either plug-in electric vehicles (PEV) or fuel consuming (e.g., Toyota Prius vs Toyota Plug-in Prius). Mr. Pointon noted that there is not enough granularity on how VINs are tracked by the manufacturer. Mr. Wood added that data retrieval is not solely an EV issue.
- Members feel that in order to better understand regional transportation energy use staff could determine which the best data sources are and which are updated frequently.
- Nick Cormier (San Diego County Air Pollution Control District [APCD]) would like to see the price flux over the last ten years in terms of alternative fuels. Mr. Wood commented that a graph can be created using statewide data on price.
- Mr. Evans asked how is market acceptance gauged, and how are people incentivized to buy alternative fuel vehicles. Mr. Wood answered that staff will look into acceptance by submarkets.

7. SAN DIEGO REGIONAL BARRIERS TO ALTERNATIVE FUEL DEPLOYMENT (DISCUSSION)

Jessica Jinn (CSE) presented a barriers table to alternative fuel deployment. Ms. Jinn mentioned that there were three main barriers that encompass some or all alternative fuels: education, alternative fuel infrastructure, and alternative fuel vehicles (AFV). The objective of the barriers table is to find solutions to these barriers.

Ms. Jinn elaborated on some of the barriers associated with education, like lack of public knowledge, limited training and education for municipal staff, and time of use (TOU) utility rates. For alternative fuel infrastructure barriers related to permitting, site assessments, and cost and access to public fueling stations were seen as areas that needed to be addressed. And finally, barriers with AFVs include: selecting, procuring and financing, and its technology. Ms. Jinn mentioned that the actions section in the barriers table needs input for suitable action items.

Refuel members had the following questions and comments:

- Ms. Freedman inquired as to what is the role of a local government for each fuel. This type of information would be helpful for education.
- Mr. Cormier commented that the barriers on the barriers table and survey results coincide.
- Jeff Wyner (City of Escondido) emphasized that there are a lot of choices when it comes to alternative fuels. He agreed that education is a major barrier that should be addressed.
- Mr. Lahsaie shared that when talking to fleet managers it is not necessarily lack of knowledge, rather whether there is return on investment for making these purchases.
- Mr. Evans discussed TOU utility rates, and if installing EV charging stations has the potential to increase demand charges and enter into a higher rate class. He mentioned that it would be beneficial to identify if there is an exemption for EVSE to where no standby charges would be applied.
- Ms. Wood inquired if there was a way to show how the region is making progress toward its goals. She noted that this can still be a data barrier, but the continued tracking beyond the life of a plan would be beneficial.
- Nilmini Silva-Send (Energy Policy Initiatives Center, EPIC) mentioned that cities struggle with what type of alternative fuels and cars they should use, and how many they should get as compared to their current fleet in order to include as a measure in a Climate Action Plan (CAP). She inquired if cities are actually converting fleets to alternative fuel. She informed Refuel that current modeling of Greenhouse Gas emissions does not have enough data for alternative fuels, so this will need to be incorporated into future modeling.
- Chair Schmidt asked if there is a way to facilitate public/private funding and collaboration, as more would benefit the public.

8. UPCOMING MEETING DATES (INFORMATION)

The next Refuel meeting is scheduled from 1:00 p.m. to 3:00 p.m. on Thursday, April 16, 2015. Also, there will be an Electric Subcommittee Meeting on Thursday, March 12, 2015 from 1:00-2:30 at CSE. Subcommittee reminders will be sent prior to the meeting.

9. MATTERS FROM MEMBERS (INFORMATION)

Mr. Cormier informed Refuel that Supervisor Cox plans to convert around 80 remaining taxi-cabs that have permits to operate at the airport to hybrid or AFVs. The APCD is creating an incentive that is waiting to be approved.

Mr. Pointon served as the chair of the PEV Collaborative's multi-unit dwellings (MUD) charging working group. He added that guides are available for download on the PEVC website. The Collaborative is looking for someone with experience on challenges associated with MUD that is interested in participating on the panel. Any members that are interested or know someone who might be are encouraged to reach out to Mr. Pointon.

10. ADJOURNMENT

Chair Schmidt adjourned the meeting at 2:56 p.m.

**January 15, 2015, SAN DIEGO REGIONAL ALTERNATVIE FUEL COORDINATING COUNCIL MEETING
ATTENDANCE**

REPRESENTATION	JURISDICTION / ORGANIZATION	NAME	MEMBER / ALTERNATE	ATTENDING
South County Subregion	City of Chula Vista	Brendan Reed	Member	NO
	Vacant			
North County Coastal Subregion	City of Carlsbad	Mike Grim	Member	NO
	City of Oceanside	Mo Lahsaie	Alternate	YES
North County Inland Subregion	City of Escondido	Jeff Wyner	Member	YES
	Vacant			
East County Subregion	TBD			
	TBD			
City of San Diego		Jacques Chirazi	Member	NO
County of San Diego		Susan Freed	Member	YES
San Diego Association of Governments	Anna Lowe, Co-Chair		Member	NO
	Susan Freedman		Alternate	YES
San Diego Regional Airport Authority		Paul Manasjan	Member	NO
Caltrans, District 11		Chris Schmidt, Chair	Member	YES
Unified Port District of San Diego	Michelle White		Member	NO
	Kellie Carlson		Alternate	YES
San Diego Gas & Electric	Randy Schimka		Member	YES
	Greg Haddow		Alternate	NO
Center for Sustainable Energy		Colin Santulli	Member	YES
University of California, San Diego		Jim Ruby	Member	NO
Miramar College, ATTE Program		Greg Newhouse	Member	NO
San Diego County Air Pollution Control District		Nick Cormier	Member	YES

ADVISORY MEMBERS			
City of Coronado	Bill Cecil	Advisory	NO
City of Del Mar	Kristen Crane	Advisory	NO
City of El Cajon	Matt Lyer	Advisory	NO
City of Encinitas	Bryce Wilson	Advisory	YES
	Richard Phillips	Advisory	NO
City of Imperial Beach	Chris Helmer	Advisory	NO
City of La Mesa	Howard Lee	Advisory	NO
City of Lemon Grove	Mike James	Advisory	NO
City of National City	Ray Pe	Advisory	NO
City of Poway	Eric Heidemann	Advisory	NO
City of San Marcos	Lisa Fowler	Advisory	YES
City of Santee	Kathy Valverde	Advisory	NO
City of Vista	Lyn Dedmon	Advisory	NO
Metropolitan Transit System	Sharon Cooney	Advisory	YES
North County Transit District	Vacant	Advisory	
Department of Defense/Military	Vacant	Advisory	
San Diego Regional Clean Cities Coalition	Kevin Wood	Advisory	YES
Energy Policy Initiatives Center	Nilmini Silva-Send	Advisory	YES
University of San Diego	Michael Catanzaro	Advisory	NO
San Diego Regional Chamber of Commerce	Mike Evans	Advisory	YES
CleanTECH San Diego	Jason Anderson	Advisory	NO

Other Attendees:

Aaron Cox, Amerigas
Michelle Heaton, Amerigas
Jessica Jinn, CSE
Keith Malone, California Fuel Cell Partnership
Michelle Martinez, SANDAG
Steve Moore, Expo Propane
Dave Peiser
Joel Pointon, SDG&E
Mike Rivers, County of San Diego

REFUEL: SAN DIEGO REGIONAL ALTERNATIVE FUEL COORDINATING COUNCIL

BIOFUELS SUBCOMMITTEE MEETING

APRIL 16, 2015

FEBRUARY 26, 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 Biofuel Subcommittee.

2. HISTORY/ BACKGROUND OF BIOFUELS

Local biofuel producers of San Diego shared some information about their history in the region and work throughout the years.

New Leaf Biofuel was founded by Jennifer Case and has been in business since 2006.

- The producer mainly use recycled cooking oil from restaurants, turns it into biodiesel at a plant in Barrios Logan, and sells the fuel in the region.
- It is used by trucks, city vehicles, university vehicles, the SDG&E fleet, and airport transportation vehicles.

Pearson Fuels has been in business since 2003, offering 10 different fuels to the public.

- Installed the first E85 site on the West Coast of United States.
- Business is mostly in Ethanol.
- Ethanol cannot be shipped via pipeline, so gasoline is shipped from refineries through pipelines to the Kinder Morgan Mission Valley terminal where the gasoline is blended with ethanol at the rack. From the rack, trucks transport the resulting E10 gasoline blend throughout San Diego.
- There will be four E85 sites added in San Diego this year.

3. STATE OF BIOFUELS

Fueling Stations Available

There are nine public E85 stations and three B20 stations available in the San Diego region. It was mentioned that Northern California is converting biodiesel into renewable diesel.

- Brendan Reed (City of Chula Vista) asked what is the difference between renewable diesel and biodiesel?
 - Renewable diesel is made from a different process, one encompassing hydrocarbons. Renewable diesel is made in large facilities that are limited in number around the world due to their costliness. Most renewable diesel comes from outside of the United States, and it can be blended with diesel or biodiesel at any level.
 - Biodiesel is made locally from a local resource that will have economic and environmental benefits for the region.

- The State's Bioenergy Action Plan was introduced, and a few participants of the subcommittee were familiar with this Plan.
- There are limited biodiesel stations and limited but growing E85 stations available to the public.

How Biodiesel is Being Used in Fleets

- The City of Chula Vista has been using biodiesel for four years and has a 10,000 gallon tank that fuels the heavy duty vehicles in the City, ranging from fire trucks and dump trucks. The City purchases 100,000 gallons of biofuel per year through New Leaf Biofuel.
- Mike Grim (City of Carlsbad) asked if biodiesel was less expensive than regular diesel. Mr. Reed explained that at first it was more costly due to insufficient on-site storage for diesel (resulting in daily shipments of the fuel); however, with additional capacity for storage, the cost decreased.
- Jennifer Case informed the subcommittee that biodiesel production intends to keep its selling price under that of diesel. She also mentioned that its price is discounted more if there are state and federal incentives.

Myths Regarding Biofuels

State and Federal Support

- It is important to have policy that invests in the long term, but having policy in place is difficult with inconsistent political support. The Renewable Fuel Standard was effective, but without an increase in the mandate, it is more difficult to keep prices low.

Fluctuation in Supply, Cost, and Profitability

- Infrastructure is seen as the biggest challenge since biofuels cannot be shipped through pipes; therefore, it must be blended on-site or at a customer's storage tank. A vast majority of diesel users cannot access B20 due to few public stations throughout the region, or own a storage tank because of cost and limited space.
- There are examples of fleet users who have stopped using biodiesel because it is too costly to upgrade underground storage tanks to be compliant with fire codes. Fleets are able to store fuel in above-ground storage tanks, but encounter issues with space, cost, and permitting (fire codes).
- There are many medium-to-light duty vehicles that are not compatible with B20 fuel, and these cars cannot use B20 without voiding their manufacturer's warranty.
- Kevin Wood (Center for Sustainable Energy) stated that permitting issues and why current standards are a barrier that will be identified and addressed in toolkits.
- Mike Lewis (Pearson Fuels) mentioned that there is wavering support from the government due to the political climate. He went on to state that there is not a lot of support for E85 for many government entities, and the challenge is the economic model and permitting problems. He believes that with more commitment from cities towards buying these fuels, the biodiesel market will benefit.
- Funding must be readily available for B20 vehicles. Currently there is no funding for B20 vehicles.
- E10 is already used in regular gasoline vehicles. E85 is meant for use by flex-fuel vehicles. Flex-fuel vehicles account for 1 million cars in California and 60,000 in San Diego County. Many fleets that

have flex-fuel vehicles do not use E85 because they are motivated by the most prevalent fuel available (gasoline).

- The Alternative Diesel Fuel ruling allows biodiesel blend B10 to be sold year-round if it has cetane level of 56 or greater, and only up to B5 in the summer if it has a cetane level of 56 or less. There are exemptions for New Diesel Technology Engines up to B20.

4. DISCUSSION FROM FUEL PROVIDERS

Issues

- Permitting of storage facilities
 - There will be coordination between Mike Grim (City of Carlsbad), the city's fire marshal, and fuel providers about permitting requirements.
 - A case study of above ground storage will be done with the City of Carlsbad and fire marshal.

Success Stories

- The City of Chula Vista is using biodiesel in large quantities for heavy duty vehicles in their fleet.
- Renewable natural gas is being administered by Clean Energy for public use.

5. QUESTIONS/COMMENTS

- Mike Evans (San Diego Regional Chamber of Commerce) spoke on the California Energy Commission's Integrated Energy Policy Report (IEPR) that had a section on biofuels. It recommends data be provided on the potential of low carbon biofuels. Mr. Evans would like to see a table that documents the value of low carbon biofuels (benefits, comparisons, impacts to local economy, lifecycle of disposal, etc.)
- Mr. Lewis noted that millions of vehicles can use E85 or biodiesel, and in the long run, that makes an impact in alternative fuel use.
- Jack Hogan (Clean Energy) informed the subcommittee that any natural gas vehicle can fuel with renewable natural gas.
- Mr. Evans asked if renewable natural gas is being trucked in or if it is being taken out of natural gas pipeline infrastructure. Mr. Hogan responded that it is being taken out of pipeline infrastructure.

Attendees/Call-in Participants

- Mike Evans – Shell
- Brendan Reed – City of Chula Vista
- David Powell – U.S. Navy
- Jack Hogan – Clean Energy
- Jennifer Case – New Leaf Biofuel
- Danielle Brannan – New Leaf Biofuel
- Mike Lewis – Pearson Fuels
- Mike Grim – City of Carlsbad
- Nick Cormier – San Diego County Air Pollution Control District
- Susan Freed – County of San Diego
- Mike Rivers – County of San Diego
- Anna Lowe – San Diego Association of Governments (SANDAG)
- Michelle Martinez - SANDAG
- Kevin Wood – Center for Sustainable Energy (CSE)

REFUEL: SAN DIEGO REGIONAL ALTERNATIVE FUEL COORDINATING COUNCIL

ELECTRIC SUBCOMMITTEE MEETING

APRIL 16, 2015

MARCH 12, 2015 MEETING SUMMARY

File number 3200900

1. LANDSCAPE OF ELECTRIC VEHICLES IN SAN DIEGO

California EV market share

- As of Q4 2014, PEVs have over a 5% market share, with 1 out of 18 new cars sold being PEVs
 - Light duty vehicle market is greater than 3%

San Diego County Vehicles and Rebates

- From 2011 to the end of 2014, there were over 120,000 PEVs sold in the state, accounting to over \$90,000 in CVRP rebates
- There are over 10,400 PEVs in San Diego County, accounting to over 7,300 rebates
 - SDG&E commented that there may be closer to 15,000 PEVs in San Diego County
- There are areas in San Diego County with a higher rate of adoption as shown by the CVRP data
 - Includes: La Jolla, central San Diego, Caramel Valley
- Car2go has improved travel and experimenting with battery recycling
 - 400 new car2go vehicles are coming to San Diego
 - Worked with Sofia Lofts and The Point apartments in Pacific Beach to add more charging stations because Pacific Beach has a huge car2go membership.
 - Car2go will work with Refuel member on case study

Number of Charging Stations

- There is a need to make more of an impact with EVSE in Multi-Unit Dwellings (MUDs)
- There are over 500 level 2 charging stations and 20 DCFC sites (16 CHAdeMO and 4 CHAdeMO & Combo Connector Standard) – according to the Alternative Fuel Data Center station locator
 - Actual number may be a little higher
 - Three Tesla supercharger sites are coming to San Diego region
- SDG&E may have access to data from PlugShare, a web app of crowd-sourced charging station data. May be available to regional agencies through a purchase.
- The ratio of cars to EVSE is quite low; if there are over 10,000 PEVs but only 500 charging stations, that is a ratio of 20:1.
 - As the range of vehicles increases, then maybe the number of chargers available will not be an issue.

- Mike Evans (San Diego Regional Chamber of Commerce) noted hearing about the San Diego Association of Governments (SANDAG) board retreat in which hydrogen fuel cells were promoted by car manufacturers.
- On April 2, 2015, CSE will hold a workshop with the Fuel Cell Partnership (FCP) where representatives from auto manufacturers will be present to discuss Fuel Cell Electric Vehicles (FCEV). Invites will be sent out via email.

Public Fleet Pilot Project

- There has been a barrier getting PEVs into government fleets
 - SDG&E has over 40 PEVs in its fleet
 - UCSD probably has the largest number of PEVs in its fleet
 - Usually no procurement incentive because of the initial high cost of PEVs
- The areas eligible for the Public Fleet Pilot Project in the San Diego region are: Cities of Vista, City of San Marcos, City of El Cajon, City of San Diego (South), National City, and Chula Vista.
 - These are determined by the CalEnviroScreen, a tool developed by CalEPA /Office of Environmental Health Hazard Assessment.

2. UPDATED BARRIERS TABLE

Many of these barriers have been carried over from the Regional Electric Vehicle Infrastructure (REVI) working group.

Lack of Public Knowledge

- Work to educate dealers on PEVs through PEV implementation work

PEV Implementation

- Create toolkit to assist cities with installation of charging stations

Workplace Charging

- Expand charging opportunities through PEV implementation work

PEV in Government Fleets

- Determine which cities are eligible for extra CVRP funding through the Public Fleet Pilot Project

EVSE at Multi-Unit Dwellings

- Expand charging opportunities through PEV implementation work
- Working on case studies to provide more outreach

Questions and feedback:

- There is a question about how much it costs to replace a battery once it wears out.
 - For a Nissan, a vehicle owner would pay \$6,000 to replace the battery, and that price includes the cost of labor

- There are some cases in which an extra warranty exists to replace the entire battery, rather than only covering specific battery cells that need to be replaced
- Need to remove all uncertainties when it comes to battery life, warranty, and afterlife.
- Large car manufacturers are looking at energy storage on the electric grid as a secondary use for the battery.
 - This type of use is being tested at UCSD
- How PEVs integrate with the grid needs to be addressed
- In regards to SB 880 and AB 2565, HOA and rental communities are supposed to allow individuals to install their own charging stations
 - Caveat to the legislation is that there needs to be a \$1 million liability coverage with the HOA as an additionally insured
 - Few reports that insurance companies will *not* add an HOA under the insurance policy
 - Need more case studies regarding the complexities of implementing SB 880 and AB 2565.

3. UPDATES FROM JURISDICTIONS

County of San Diego (Rich Grudman)

- The County wanted to install EVSE throughout County buildings, but did not have the funding to do so.
- Applied for and received a \$500,000 grant from the Energy Commission.
- The County sent out an RFP where vendor installs and owns their own equipment in return for a license to use County real estate
- Developed a partnership with ChargePoint, who has installed 10 EVSE already, plus another 10, and another 9 to be installed by the end of 2015
- Most of the infrastructure installed has been Level 2 and some DCFC.
- Employees pay to charge: \$0.30/kWh on Level 2 charging structures; \$0.50/kWh on DCFC
- Fees increase when drivers stay plugged in after the car is done charging.

SANDAG (Susan Freedman)

- SANDAG implemented EVSE at two transit station sites: Del Lago and Sabre Springs
- 10 Level 2 charging stations were installed at the Sabre Springs Transit Station
- Most usage was from Monday-Thursday
- Unsure of who is using the charging stations from looking at the data
- In November, fees increased to \$2/hr, and charging from transit users dropped dramatically
 - Only seven total charging session in February.
- SANDAG will look at charging per kWh

City of San Diego

- The City is moving forward with OpConnect to install up to 41 charging stations at park and recreation locations. Funding is thanks to the same Energy Commission grant from which the County received funding.
- The City has also identified a new vendor to take over the management of its existing charging stations, and the RFQ includes a piggyback clause so other jurisdictions may follow suit.

4. BRIEFING ABOUT ENERGY COMMISSION INFRASTRUCTURE WORKSHOP



The subcommittee was informed that \$10 million in funding for PEV infrastructure will be released in early summer/late spring by the Energy Commission.



- The region should gather strategies and best practices from past grantees (i.e., the County and City of San Diego) to successfully apply.







Attendees/Call-in Participants:


- Nilmini Silva-Send, University of San Diego Energy Policy Initiatives Center
- Chris Schmidt – CalTrans District 11
- William Berry – car2go
- Joel Pointon – San Diego Gas & Electric (SDG&E)
- Rich Grudman – County of San Diego
- Jeff Wyner – City of Escondido
- Mike Evans – San Diego Regional Chamber of Commerce
- Randy Schimka – SDG&E
- Mo Lahsaie – City of Oceanside
- Susan Freedman – San Diego Association of Governments (SANDAG)
- Anna Lowe – SANDAG
- Michelle Martinez – SANDAG
- Kevin Wood – Center for Sustainable Energy (CSE)
- Jessica Jinn – CSE


Regional Alternative Fuel Vehicle and Infrastructure Barriers Table


Barrier: Education	Barrier Pertains To	Guidance Materials	Action Items
<p>1. Lack of Public Knowledge on Alternative Fuels</p> <p>- Lack of knowledge and misconceptions about alternative fuels and advanced vehicle technology.</p> <p>-Additional education on hydrogen is needed since it is a newer vehicle technology.</p>		<p>Promote Clean Cities vehicle guides, handbooks, and other relevant documents.</p> <p>Leverage consumer-focused resources available.</p>	<p>Recommendation: Develop materials/toolkits that allow general consumers to better understand AFVs, and provide a baseline understanding of AFVs useful to local governments. Includes:</p> <ul style="list-style-type: none"> • Reviewing existing consumer outreach materials • General "myths" and realities of each fuel (how the fuel is made, what vehicles use the fuel, range, etc.) • Relevant state policies that create the motivation for adopting AFVs • Guidance for local EV encouragement efforts- Work with South Bay Energy Action Collaborative to document best practices
<p>2. Training and Education for Municipal Staff</p> <p>-Lack of knowledge about alternative fuels and advanced vehicle technology.</p> <p>-Additional education on hydrogen is needed since it is a newer vehicle technology.</p> <p>-Need to further plan for AFVs in energy planning documents and implement strategies in municipal fleets.</p>		<p>Existing Conditions Report public agency survey results. The survey results reveal what municipalities have done to prepare for alternative fuels and what resources they lack in order to further adopt alternative fuel-friendly policies and strategies.</p> <p>Existing Conditions Report's section on codes and standards can serve as guidance for installations.</p> <p>Leverage National Renewable Energy Laboratory (NREL) developed codes and standards handbooks.</p> <p>Replacing government fleet vehicles with alternative fuel vehicles is a strategy noted in some Climate Action Plans (CAPs), or other energy planning documents.</p> <p>Ensuring open communication among fleet managers and planning staff to secure the success of CAP strategies.</p>	<p>Recommendation: Develop materials and toolkits that allow fleet managers and municipal staff to integrate AFVs and create/promote AF-friendly policies. Includes:</p> <ul style="list-style-type: none"> • Reviewing existing educational programs/materials • Reviewing past and current training programs & promote them • Planning documents to better assist jurisdictions in achieving GHG reduction strategies using alternative fuels • How to choose optimal locations for alternative fuel infrastructure • Relevant state policies that motivate greater AFV adoption • Sample policies that support the growth of AFVs

<p>3. Training and Education for Emergency Personnel and Transportation Fleet Staff</p> <p>-Lack of safety and technical training for AFVs and AFI.</p> <p>-Need specific fleet data to better understand AFV performance.</p>		<p>Needs Assessment for Alternative Fuel Vehicle Training in California offer insight to training needs.</p> <p>Existing Conditions Report offers a section on training for emergency personnel and fleet staff.</p> <p>Existing Conditions Report fleet survey results. The survey results reveal what alternative fuels fleets around the San Diego region have already adopted. It informs about resources desired by fleet managers in order to integrate more alternative fuels into their fleet.</p>	<p>Recommendation: Develop materials and toolkits that will help train emergency personnel on how to handle AFVs and fleet staff on how to service AFVs. Includes:</p> <ul style="list-style-type: none"> • Reviewing past and current training programs • Developing training resources one pager, which includes contacts for training facilities within and near San Diego County and provide course/topic recommendations for each fuel type • Promoting trainings • Specific fleet data that allow fleets to understand the technical capacities/build of an AFV
<p>4. TOU Utility Rates/ Grid Integration</p> <p>-Need to discourage charging when electricity supplies are in high demand and cost more. Support of time of use (TOU) pricing.</p> <p>-High demand charges that impact EVSE host utility bills. Expensive metering options to access TOU rates.</p> <p>-Need further education on how PEVs integrate with the electricity grid, and how to reduce its grid impact.</p>		<p>Educate public on SDG&E EV time of use rates.</p> <p>Promote Plug-In Electric Vehicle Collaborative (PEVC) materials and guidance documents from the PEV Readiness Plan.</p> <p>Information on minimizing utility charges from natural gas station operation.</p> <p>Maintain regular updates and communication from SDG&E regarding its work with a proposed vehicle-to-grid pilot project.</p>	<p>Recommendation: Develop guidance and toolkits that help AFV users understand the way vehicles integrate with the electricity grid and general EV charging time of use information. Includes:</p> <ul style="list-style-type: none"> • Promoting information and guidance on utility rates/ grid integration • How vehicle charging time affects overall electricity/grid capacity (i.e. duck curve) • How used PEV batteries can be integrated into the electrical grid. • Optimizing natural gas infrastructure for limited electrical demand



Barrier: Infrastructure	Barrier Pertains To	Guidance Materials	Action Items
<p>5. Station Development: Codes & Permitting -Need for increased guidance on EVSE, propane, natural gas, and hydrogen station installation processes.</p> <p>-Direction on how city staff and station developers can work together to ease station deployment process.</p>	<p>Biodiesel Electricity</p>  <p>Ethanol Hydrogen</p>  <p>Natural Gas Propane</p> 	<p>Promote Best Practice documents generated through the California Statewide Alternative Fuels and Fleets project.</p> <p>Propane, hydrogen, and biofuel Refuel subcommittees devoted a portion of time identifying barriers to station installation.</p> <p>Existing Conditions Report section on codes and standards serves as guidance for installations.</p>	<p>Recommendation: Address problems that frequently occur when stations are being installed (e.g., when propane station is built, screens are often required to be surrounding the propane tanks; not favored by propane providers). Includes:</p> <ul style="list-style-type: none"> • Fuel-specific permitting best practices to help jurisdictions facilitate station installations(Reference existing codes) • Successful installation case studies • Compiled station installation processes as discussed through Refuel subcommittees
<p>6. Station Development: Site Assessment -Station developers have come across right of way and easement issues.</p> <p>-Stations should be located along fleet routes.</p>	<p>Biodiesel Electricity</p>  <p>Ethanol Hydrogen</p>  <p>Natural Gas Propane</p> 	<p>Assist municipal staff through Clean Cities tools on zoning, station design, and assessment of station fueling needs.</p> <p>Conduct fleet route assessment to determine best locations for AFI.</p> <p>Promote electric, natural gas and hydrogen best practice documents generated through the California Statewide Alternative Fuels and Fleets project.</p>	<p>Recommendation: Provide solutions and guidance for municipal staff and other fleets on where to place fueling infrastructure. Includes:</p> <ul style="list-style-type: none"> • Enabling cities to site fueling stations based on their fleets’ routes and fuel usage (i.e., how to conduct fueling analysis) • Enabling private fleets to site fueling stations based on their fleets’ routes and fuel usage (i.e., how to conduct fleet analysis) • Enabling public agencies to determine best locations to install infrastructure for the public (i.e. providing relevant variables, methods, etc.)

<p>7. Access to Public Alternative Fuel Stations</p> <p>-Lack of AFV adoption due to limited infrastructure near where fleets and the public need to refuel.</p> <p>-Lack of station access for heavy-duty vehicles.</p>		<p>Increase awareness of current and planned alternative fuel stations to fleet managers.</p> <p>Compile resource list of station locator maps.</p> <p>Guidance to station developers on building stations that are accessible to heavy-duty vehicles.</p> <p>Examples of outreach activities San Diego Regional Clean Cities Coalition has performed with local alternative fuel providers.</p> <p>Clean Cities Coalition guide on costs associated with CNG and propane fueling stations.</p> <p>San Diego Regional Clean Cities Coalition-developed maps of San Diego County infrastructure and proximity to residences.</p>	<p>Recommendation: Develop ways for fuel providers and local jurisdictions to increase awareness of public alternative fuel station locations. Includes:</p> <ul style="list-style-type: none"> • Reviewing existing resources and updating as necessary • Mapping tools to encourage more installations • Best practices for promoting alternative fuel stations to the public (e.g., an outreach guide)
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<p>8. EVSE at Multi Unit Dwellings</p> <p>-Consumer and property owners have lack of knowledge regarding EVSE installation in these buildings.</p> <p>-Need to educate and work with HOAs to identify and find solutions to unique building challenges.</p>	<p>Electricity</p> 	<p>Promote PEVC materials and guidance documents from the PEV Readiness Plan.</p> <p>PEVC’s case studies on charging installations at MuDs.</p>	<p>Recommendation: Increase public understanding of complexities of charging at MuDs and gather resources to help facilitate charging installations. Includes:</p> <ul style="list-style-type: none"> • Gathering complementary information about MuD charger installations. Or, developing specific studies for particular charging scenarios (i.e., SB 880 and AB 2565 being ineffective if insurance companies will not add HOA as additionally insured – get examples of this.) • Promoting installation and information about EVSE through future CSE and SANDAG PEV Implementation work. This work may be coordinated in tandem with SDG&E’s vehicle-to-grid pilot project and adjusted as necessary
<p>9. Workplace Charging</p> <p>-Lack of understanding regarding benefits and approaches to workplace charging.</p> <p>-Need to further educate employers and property management companies about the benefits of workplace charging</p>	<p>Electricity</p> 	<p>Promote Calstart’s Best Practices for Workplace Charging and the California Plug-In Electric Vehicle Collaborative guidance documents.</p>	<p>Recommendation: Increase public understanding of complexities of charging at workplaces and gather resources to help facilitate installations. Includes:</p> <ul style="list-style-type: none"> • Promoting installation and information about EVSE through future CSE and SANDAG PEV Implementation work





<p>10. Infrastructure Costs</p> <p>-Lack of capital for station construction and operation costs.</p> <p>-Who pays for the upfront costs of the infrastructure? The grantee, ratepayer or end user.</p> <p>-Risk of investment.</p> <p>-Need justification/incentives for higher costs to build stations.</p> <p>-Need partners to justify investment.</p>	 <p>The image shows a 2x3 grid of fuel nozzles. The top row contains a green nozzle labeled 'Biodiesel' and a red nozzle labeled 'Electricity'. The middle row contains a yellow nozzle labeled 'Ethanol' and a grey nozzle labeled 'Hydrogen'. The bottom row contains a blue nozzle labeled 'Natural Gas' and a gold nozzle labeled 'Propane'.</p>	<p>Create forum for stakeholders to discuss and form partnerships.</p> <p>Promote Clean Cities tools, such as natural gas Vehicle and Infrastructure Cash-Flow Evaluation (VICE) Model which address payback period for natural gas vehicles and infrastructure.</p> <p>Past success from regions to apply for infrastructure funding from the California Energy Commission.</p>	<p>Recommendation: Provide public agencies and fleets with tools for evaluating and overcoming infrastructure costs. Includes:</p> <ul style="list-style-type: none"> • Evaluating and promoting existing tools • Providing a forum for coordination • Best practices of CEC infrastructure grant recipients so other jurisdictions may have similar success • Developing a guide that allows jurisdictions to better navigate and understand CEC infrastructure grants
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Regional Alternative Fuel Vehicle and Infrastructure Barriers Table

Barrier: Vehicles	Barrier Pertains To	Guidance Materials	Action Items
<p>11. Selecting Appropriate AFVs -Advise municipal staff and businesses on choosing alternative fuels that will meet fleet needs.</p>		<p>Clean Cities tools such as the Vehicle Cost Calculator and Vehicle Search.</p>	<p>Recommendation: Help fleet staff and businesses choose most appropriate AFVs for their needs. Includes:</p> <ul style="list-style-type: none"> Promoting Clean Cities tools Developing guidance on determining most appropriate AFVs
<p>12. Procuring and Financing AFVs -Initial higher costs of AFVs barrier to adoption. -Need further outreach to fleets and public about incentives for procuring AFVs.</p>		<p>Connect municipal staff, businesses and local residents to dealers and vehicle manufactures. Provide guidance on leasing vs. purchasing an EV.</p> <p>Educate public on available incentives.</p> <p>A Public Fleet Pilot Project allows for cities with disadvantaged communities to apply for extra funding to buy new PEVs</p> <p>The CalEnviroScreen, a state-developed tool that identifies “disadvantaged communities” in the state, helps determine who can benefit from additional funding and pilot projects, such as the Public Fleet Pilot Project.¹</p>	<p>Recommendation: Assist fleets to understand the costs of AFVs and provide guidance on procurement and financing AFVs. Includes:</p> <ul style="list-style-type: none"> Identifying & promoting best resources on financing and procurement Reaching out to cities with disadvantaged communities to take advantage of extra funding to buy PEVs Costs associated with each type of AFV (provide a cost analysis) Developing models for financing vehicle acquisition

¹ The lack of San Diego regional communities labeled as “disadvantaged communities” limits the extra funding coming to the region. SANDAG believes this tool is not representative of the underserved communities existing in the region; that is, there are far more than are actually labeled in the tool.

Regional Alternative Fuel Vehicle and Infrastructure Barriers Table

<p>13. Converting Conventional Vehicles to an Alternative Fuel - Lack of understanding on the regulations, conversion kits available or companies that provide retrofit services.</p>	<p>Natural Gas Propane</p> 	<p>Information on CARB acceptable conversion kits and manufacturers.</p>	<p>Recommendation: Provide guidance on how to safely and lawfully convert conventional vehicles to use alternative fuels.</p> <ul style="list-style-type: none"> • Provide guidance on CARB approved conversion kits
<p>14. AFV Technology -AFV lifespan and range (especially for PEVs) in some cases is not competitive with conventional vehicles.</p> <p>-People not making the investment until they feel confident of the technology’s reliability.</p> <p>-People are wary of emerging AFV technology, unsure of its reliability.</p>	<p>Biodiesel Electricity</p>  <p>Ethanol Hydrogen</p>  <p>Natural Gas Propane</p> 	<p>Meeting summaries from Refuel subcommittee meetings serve as background for fuels and new technology.</p> <p>Alternative fuel vehicle industry websites also serve as background for new technology.</p>	<p>Recommendation: Provide insight into the up-and-coming technology and emerging fuels. Includes:</p> <ul style="list-style-type: none"> • Guidance on fuel and technology developments: dimethyl ether (DME), hydrogen, algae, renewable natural gas, drop-in fuels in general • Alternative fuel life cycle analysis, including second-life batteries • Discussion on vehicle technology “maturity” – how long have certain fuels been used, by who, and with what kind of results

Refuel:		Refuel	Subcommittee Meetings					Readiness Plan
Meeting Schedule		Q - Mtgs	Electricity	Natural Gas	Propane	Biofuel	Hydrogen	Public Workshop
2014	October	10/16/2014						
	November		11/19/2014					
	December							
2015	January	1/15/2015			1/8/2015		1/12/2015	
	February					2/26/15		
	March		3/12/15					
	April	4/16/2015		4/22/15			4/2/15*	
	May		May-15					
	June			Jun-15**				
	July	7/16/2015				Jul-15		
	August		Aug-15				15-Aug	
	September							
	October	10/15/2015						
	November							
	December							
2016	January							Jan-16
	February							
	March							

*Refuel as a collaborator

**Joint meeting of Natural Gas and Propane

Bolded meeting dates indicate toolkit outline presentation and discussion