August 1, 2013 MEETING SUMMARY

ATTENDEES:

Video Teleconference (VTC): Fresno (Central), Modesto (North), and Bakersfield (South)

Central Office Attendees:			
CCSE	**CCSE**	**City of Fresno**	**Kings Canyon Unified**
Tyler Petersen	Jessica Jinn	Joseph Oldham	John Clements
Fresno COG	**City of Visalia**	**Merced County**	**PG&E**
Lauren Dawson	Betsy McGovern-Garcia	Jeff Fugelsang	Bob Riding
SJVAPCD	**SJVAPCD**	**SJVAPCD**	
Nhia Vu	Colette Kincaid	Juan Cano	

South Office Attendees:
SJV Clean Cities/Kern COG
Linda Urata

Conference Call Attendees:		
EVI	**UC Irvine**	**Turlock Irrigation District**
Ricky Hanna	Dr. Tim Brown	Chris Poley
City of Lodi	**City of Tracy**	**Stanislaus COG**
Rob Lechner	Kimberly Matlock	Arthur Chen
Employment Training Panel	**Kings County**	
Robert Meyer	Bruce Abanathie	

ITEM #1: WELCOME AND INTRODUCTIONS

Nhia Vu, San Joaquin Valley Air Pollution Control District (SJVAPCD), welcomed the group to the fifth San Joaquin Valley Plug-in Electric Vehicle Coordinating Council (SJVPEVCC) meeting. Ms. Vu opened up the meeting for introductions for all attendees on the phone, as well as those at the Fresno, Modesto and Bakersfield District offices.

ITEM #2: ANNOUNCEMENTS AND PUBLIC COMMENTS

- John Clements, Kings Canyon Unified School District, announced that the City of Reedley is opening bidding for the construction of Level 2 and DC fast chargers at the Central Valley Transportation Center.
- Robert Meyer, Employment Training Panel (ETP), announced that he will share the contract that UPS had developed when they were deploying their electric fleet.
- Betsy McGovern-Garcia, City of Visalia, noted that she would like a word document version of the RFP template shared.
- Nhia Vu, San Joaquin Valley Air Pollution Control District (SJVAPCD), noted that this will be the last meeting for the coordinating council and thanked the group for their time and continued feedback.

AGENDA ITEM#3: SUMMARY OF JULY 11, 2013 MEETING

Jessica Jinn, California Center for Sustainable Energy (CCSE), stated that there have been no changes made in the presentation from the July 11, 2013 meeting summary and a copy of the presentation can be found online at www.energycenter.org/pluginready. Additionally, she noted that the CCSE website has been revamped.

A. Plans to Attract PEV Manufacturing, Production, Infrastructure, and Services of PEV Development in the Region

Mark Britt, UPS, gave a thorough overview of UPS' history with alternative fuel vehicles as well as how they came to deploy the largest electric vehicle fleet in the industry. He shared his best practices for the group.

The group recommended that his case study be shared with regional stakeholders.

B. Public Agency EVSE Installations

Rob Lechner, City of Lodi, presented the City's experience with installing and expanding electric vehicle supply equipment (EVSE) around the city. It began with just a free upgrade from the first generation EVSE to new chargers and led to a work partnership with Clipper Creek, in which the city increased EVSE to better align with their Climate Action Plan (CAP).

Tyler Petersen, CCSE, and Ms. Jinn presented the group with a sample request for proposals (RFP) template for public agencies interested to have EVSE installed, operated, and maintained on their property.

The group recommended that RFPs fully include all liabilities and request ample references and examples of past work to act as a qualifier for potential partners. Additionally, the group recommended that installing EVSE aligns well with public agencies' CAPs.

C. Regional Planning for Public EVSE Siting

Mr. Petersen and Ms. Jinn presented the group with an overview of Dr. Tim Brown's EVSE siting model.

The group recommended that speaking with the utility be an important part of the siting process.

ITEM #4: REGIONAL PLANNING FOR PUBLIC EVSE SITING

Mr. Petersen introduced Dr. Tim Brown, University of California – Irvine (UCI), to the group. Dr. Brown proceeded to lead the group through a power point presentation about his EVSE siting model that was developed under a California Energy Commission project. A summary of his points are as follows:

- 81% of miles traveled by vehicles come from a detached house with a garage.
- Using a time strategy for charging habits is an important way to reduce a driver's cost function.
- Ideally, "optimal charging" works best because it is a similar idea to smart charging, except instead of online charging at night during off-peak hours, optimal charging allows a PEV to charge at off-peak throughout the day. However, this may not be achievable in the near-term future due to lack of infrastructure.
- PHEVs can depend only on Level 1 chargers and perform well.
- Level 1 (120 Volt) chargers are sufficient for only 70% of BEV (battery electric vehicle) drivers. Level 2 (240 Volt) is a necessity for BEV drivers at home.
- DC fast charging acts as a safety net for BEV drivers. With an optimized fast charging network, 98% of BEV drivers could be satisfied with just a 70-mile range vehicle.
- There need to be DC fast charging available at 290 locations across California to appease most 70-mile range vehicle drivers.
- Summary for PEV infrastructure
    - Level 1 is all that is needed for PHEVs at home.
    - Level 2 is critical to enable BEVs.
    - Level 3 is a safety net for BEV drivers.

The group provided the following questions and comments:

- Joseph Oldham, City of Fresno, said that when he charges his Chevy Volt, he notices that it charges most heavily when it is first connected, and slower after time. He asks if this was taken into account when the siting model was created.
- Dr. Brown responded that because he largely used Toyota vehicles, which did not charge in the same fashion, he did not take that into account. However, it is a parameter that is easily changed.
- Mr. Petersen asked Dr. Brown to share a version of Slide 13 [a zoomed in map of the Los Angeles region with potential DC fast charging locations] made for the San Joaquin Valley.
- Dr. Brown affirmed. He added that most travel distances in the Valley are generally longer than in LA or the Bay Area.
- Mr. Oldham noted that on the map showing DC fast charger locations, there is a blank spot around Kern County.

- Dr. Brown responded that he and his team plotted for 20,000 records of where people are driving and did not take into account people who drive less than 60 miles because they may not need charging infrastructure.
- Collette Kincaid remarked that Tesla superchargers can provide 80% of the vehicle's charge in the first 30 minutes but the last 20% takes an additional 30 minutes, which may be helpful for reducing the amount of time people sit at the stations.
- Dr. Brown responded that in terms of DC fast chargers, he assumed that people can be plugged in for 30 minutes maximum. The next step is to look at the same issue for Level 2 and how to better manage vehicles that are plugged in to chargers for unnecessarily extended times.
- The group agreed that they wanted to use Dr. Brown's presentation for personal use.
- Mr. Petersen asked how Dr. Brown found out that an optimized Level 3 network can satisfy 98% of the drivers.
- Dr. Brown said that it is based on a record of drivers, assuming that everyone has Level 2 charging at home. There are a small percentage of drivers that need more than 70 miles of range, so optimizing this network of chargers means that they can do so.
- Dr. Brown added that the map is comprehensive of already-existing, future, and hypothetical DC fast chargers. He added that the current population of DC fast chargers is about 184.
- Jeff Fugelsang, Merced County, began a discussion about uphill driving and how it uses more electricity; therefore more stations should be installed upon hills.
- Dr. Brown said that elevation change was not considered in the model, but suggested that he will include that scenario in future modeling.
- Linda Urata, Clean Cities San Joaquin Valley, asked about charging technicalities.
- Dr. Brown and Bob Riding, PG&E, explained that the on-board system of the EV will protect the battery and accept as much current from the charger as it can handle.

ITEM #5: PROMOTION OF PEVs IN FLEETS

Last month, Mr. Petersen briefly spoke about the EV manufacturer, Electric Vehicle International (EVI). Today, Mr. Petersen presented EVI's CEO, Ricky Hanna, to discuss EVI:

- EVI is a 20 year old company, headquartered in Stockton, CA. It has invested over $40 million in research and design and has 50 employees. The company has shipped over 1,000 alternative fuel vehicles worldwide.
- EVI specializes in commercialized fleets with clean and reliable alternative fuels.
- The company began in Mexico, but moved its operations to Stockton, CA in 2009. Mr. Hanna realized that the U.S. could provide a strong engineering team for his products and he knew that California would be the biggest market for his industry in the United States. Therefore, he not only wanted to be closer to his potential customer base, but also wanted a strong team for product development, and to be closer to decision makers in Sacramento.
- Mr. Hanna said that EVI is different from his competition because they have had experience in the battery industry. EVI produces software in-house which provides the company with a strong

advantage. For example, when UPS was testing its electric fleet (which was manufactured by EVI), EVI was able to make quick changes to flaws without delay.

- EVI also is in partnership with the company Freightliner Trucks from whom they can get special components and gliders.
- Mr. Hanna continued to describe the products that EVI offers and how various incentives and grant money has helped him create more advanced products. However, Mr. Hanna also lamented about the lack of incentives for EVSE and noted that there is a significant difference between EVSE (e.g. the charging station unit) and EVSE infrastructure (e.g. ancillary installation costs, trenching, secondary meters, etc.) and the costs associated with both.

The group provided the following questions and comments:

- Ms. McGovern-Garcia asked if there is a way for local jurisdictions to see how many fleets are using EVs to gauge what the market potential will be in the next five years.
- Mr. Hanna said that the first order from UPS was 100 electric vehicles and he fully expects that number to increase in the future. Mr. Hanna added that the increase in electric vehicles also reflects California's own deployment of EV fleets thanks to aggressive incentives that are available.
- Ms. McGovern-Garcia asked if there is information on where the fleets are located.
- Mr. Hanna responded that he keeps a database on that information and targets large customers like UPS and Frito-Lay.
- Ms. Kincaid commented that [in regards to SJVAPCD incentive programs] the SJVAPCD can say what they have funded and who has applied, but that number does not represent the fleets or vehicle out there who did not qualify. Further, Ms. Kincaid noted that the DMV has this data but have been unwilling to share it with public agencies.
- Robert Meyer, Employment Training Panel (ETP), asked about EVI's number of employees.
- Mr. Hanna responded that there are 50.
- Ms. McGovern-Garcia asked if EVI has any desire to partner with solar companies.
- Mr. Hanna currently does not because he doesn't wish to make his business too complex at this moment.
- Mr. Oldham said that since solar companies are already trenching and installing conduit when installing solar panels, it may be easier simultaneously install conduit for EVSE infrastructure to make future EVSE installs easier.
- The group discussed ways in which they could work together with Mr. Hanna.
- Mr. Hanna provided his final suggestions for the future of PEV planning. He said that incentives for EVSE infrastructure is very important and must be on-demand basis rather than provided through grants. Further, it would be ideal if those who apply for HVIP or CVRP could automatically be qualified for charging structure incentives.

Mr. Petersen thanked Mr. Hanna for his participation. Then, Mr. Petersen presented the changes added to a flowchart guide for adopting PEVs in local fleets, which the group commented on during the June meeting.

ITEM #6: RENEWABLE ENERGY AND PEV CHARGING

Ms. Jinn presented on regional solar adoption rates and PEV adoption rates, which were calculated using California Solar Initiative (CSI) and CVRP data. It generally showed that high solar-adopting areas are also high-PEV adopting areas. Further, regional CVRP survey results show that nearly 50% of PEV-owners with solar panels have sized their solar panels to charge their vehicles.

Next, Ms. Jinn presented a case study based in Lyons, Colorado in which Lyons High School seeks to create a microgrid island project. A solar panel atop the school's roof would provide energy to a central battery in the school. The battery would not only provide a day's worth of electricity to the school, but also charge an all-electric school bus, and the local utility would be able to buy the power to use in the town during peak-hours.

The following comments were given:

- Mr. Riding said that Santa Rita Jail, located in Dublin, CA, is a fully functional micro-grid island.
- Ms. McGovern-Garcia suggested that it might be useful to track Proposition 39 to see how many energy efficiency projects are actually completed in schools. There may be an increase in solar installations.

Mr. Petersen gave a short description of the Tesla supercharger stations which are typically powered by a solar and energy storage system. There are a few stations in the San Joaquin Valley.

- The group discussed the innovation and brilliance of the superchargers. They further remarked about their own visits to the superchargers.
- Ms. Urata confirmed that every Tesla driver she has spoken to appreciates and enjoy the superchargers.
- Ms. Kincaid noted that depending on your Tesla purchase, you can have free charging for life. Additionally, Tesla is looking to install even more chargers in the Valley because of the incentives, which have caused an increase in Tesla purchases in the area.

Ms. Jinn then showed the group the EPA's tool for finding a utility's renewable energy portfolio.

- Mr. Riding said that PG&E's emissions factor [a representative value that attempts to relate the quantity of a pollutant released to the atmosphere with an activity associated with the release of that pollutant] has been dropping yearly.
- Mr. Petersen noted that it is difficult to find localized information; it is one thing to get a utility's renewable energy mix, but it may be different on a city-level.
- Mr. Riding agreed and stated that it will not be possible to find that type of information on a city-level because every day the city-level power mix is changing.
- Mr. Petersen asked how we can encourage residents and local businesses to adopt renewable energy.
- Mr. Oldham said that it is important to encourage the private sector to install Level 2 chargers in conjunction with renewable energy. Not only does the public sector not have enough money to

pursue such projects, but people are not visiting municipal facilities for long enough time to make such investments worthwhile. Furthermore, Mr. Oldham noted, when energy audits are performed, little attention is paid to renewable energy used.

- Mr. Riding noted that truck stop electrification efforts are seeing that renewable energy sources can be useful, but face issues because of timing.
- The group further discussed electricity peak time versus solar peak time.
- Mr. Riding said that if you look at actual renewables used in each area, it is actually much higher than what is believed by the general public.
- Ms. Kincaid suggested that it may be important for the plan to address how incentives can push certain types of renewable energy infrastructure by, for example, promoting and encouraging certain renewable energy storage and generation be a complement to a PEV purchased.
- The group agreed.
- Mr. Oldham said that an incentive to jumpstart advanced battery storage is good and once there are more case studies about it, people will realize that it is a good business/financial decision to invest in such a technology.
- Mr. Fugelsang noted that the group must remember that the Valley is plentiful with wind energy too.

ITEM #7: TRAINING AND EDUCATION FOR CAR DEALERSHIPS

The group did not have enough time to cover this topic. However, Mr. Petersen assured everyone that the topic will be addressed in the readiness plan.

ITEM #8: PROJECT NEXT STEPS

Mr. Petersen thanked everyone for having been part of the group and commended all participants on excellent recommendations for the plan. He assured everyone that the plan will be something very useful and tangible. The timeline for the plan will be as follows:

- *Late August* – Draft outline is due
- *Mid-September* – Comments about outline are due
- *Early October* – Draft plan is due
- One month to review the draft plan
- *5 December* – Public workshop (which is already a planned PEVCC meeting date)
- The plan will open for public review for 30 days
- Comments are compiled
- *February* – Final plan presented to the district's governing board