# SAN DIEGO REGIONAL ELECTRIC VEHICLE INFRASTRUCTURE WORKING GROUP

## **MEETING NOTICE AND AGENDA**

Date: Thursday, September 20, 2012

Time: 1:00 p.m. to 2:30 p.m.

**Location: California Center for Sustainable Energy** 

8690 Balboa Ave, Suite 100 San Diego, CA 92123-1502

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## **AGENDA HIGHLIGHTS**

- PLUG-IN ELECTRIC VEHICLE OWNER SURVEY RESULTS
- UPCOMING PUBLIC INSTALLATION PROJECTS

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







## SAN DIEGO REVI

Thursday, September 20, 2012

ITEM # RECOMMENDATION

#### 1. WELCOME AND INTRODUCTIONS

#### +2. SUMMARY OF THE JULY 19, 2012 MEETING

APPROVE

The San Diego Regional Electric Vehicle Infrastructure Working Group (REVI) is asked to review and approve the July 19, 2012 meeting summary.

#### 3. ANNOUNCEMENTS AND PUBLIC COMMENTS

**INFORMATION** 

Members of the public shall have the opportunity to address San Diego REVI on any issue that is not on this agenda. Public speakers are limited to three minutes or less per person. REVI members may provide information and announcements under this item.

#### REPORTS

#### +4. PEV READINESS REGIONAL UPDATE - SEPTEMBER 2012

**INFORMATION** 

Staff will provide a brief status report on PEV-related developments since the July REVI meeting. The regional update is attached to this agenda and addresses: The EV Project installations, Airport charging stations, Car2Go fleet expansion, and National Plug-in Day.

#### +5. PLUG-IN ELECTRIC VEHICLE OWNER SURVEY

**INFORMATION** 

Staff will provide an overview of the the Clean Vehicle Rebate Project survey conducted by CCSE and the California Air Resources Board. The survey provides information on vehicle use, charging behaviors, access to charging, fueling costs, and household demographics. A survey results infographic is attached and the full report is available online here.

# +6. CALIFORNIA ENERGY COMMISSION PEV INFRASTRUCTURE AWARDS FOR SAN DIEGO

**DISCUSSION** 

The California Energy Commission recently named awardees for this year's second round of alternative fuel infrastructure grants, which supports the installation of EV charging stations. The San Diego region will receive approximately \$1.3 million. Representatives from awardees will briefly describe their projects.

#### 7. REVI CASE STUDY AND GUIDELINES

**INFORMATION** 

Staff continues to develop case studies and guidelines for on-street parking, DC Fast Charging Station installation in Santa Ysabel, and the Office of Planning and Research Guidelines for EV Deployment.

#### 8. NEXT MEETING

**DISCUSSION** 

The next REVI meeting is scheduled for Thursday, November 15, 2012. However, REVI members are asked to consider an alternate meeting date due to scheduling conflicts.

#### 9. MATTERS FROM MEMBERS

**INFORMATION** 

REVI members are encouraged to discuss additional topics of general interest.

#### 10. ADJOURNMENT

+ next to an item indicates an attachment

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#### **JULY 19, 2012 MEETING SUMMARY**

#### **ITEM #1: WELCOME AND INTRODUCTIONS**

Acting Chair Joel Pointon, San Diego Gas and Electric (SDG&E), called the meeting to order at 1:00 p.m. Chair Susan Freedman, San Diego Association of Governments (SANDAG) and Vice Chair Mike Ferry, California Center for Sustainable Energy (CCSE), were both committed to other obligations. Mr. Pointon welcomed everyone to the third meeting of the San Diego Regional Electric Vehicle Infrastructure Working Group (REVI) and notified everyone that he would be acting as chair during the meeting.

#### ITEM #2: SUMMARY OF THE MAY 17, 2012 MEETING

Greg Newhouse, Miramar College Advanced Transportation Technology and Energy Program, motioned to approve the meeting summary from May 17, 2012, Randy Walsh, Meissner Jacquét Investment Management Services, seconded the motion. Motion carried without opposition.

#### **ITEM #3: ANNOUNCEMENTS AND PUBLIC COMMENTS**

Mr. Pointon announced that Plug-in 2013 will be held in San Diego from June 3rd to June 6th. The conference is still searching for a venue and Mr. Pointon suggested that REVI could recommend ideas for participation in the conference. He also mentioned that SDG&E will be holding a multi-unit dwelling (MUD) workshop at the SDG&E Energy Innovation Center on July 31st.

Karen Prescott, National Electrical Contractors Association, thanked the group for their support in promoting the Electric Vehicle Inspection and Code Seminar earlier in the week. The seminar had roughly 50 inspectors participate.

Mr. Newhouse announced that Miramar College is offering a one-day technician course focused on battery technology for electric vehicle (EV) technician fleets. An alternative, two-day first responder course will be offered in mid-August that covers training for personnel responding to gases/fuels and hybrid/EVs vehicles. The course is free of charge.

Mr. Walsh announced that his firm will be installing electric vehicle supply equipment (EVSE) at the following company properties in the San Diego region: four Level 2 240 Volt (V) EV charging stations in La Mesa Springs, three Level 2 240V EV charging stations in Ramona, and a direct current (DC) Fast Charging station in Santa Ysabel.

Mr. Pointon stated that the Society of Automotive Engineers (SAE) has finished the approval process and will publish a US standard for a DC Fast Charge combo connector. Mr. Pointon went on to mention that this standard will be adopted by all US and German automobile manufacturers.

#### ITEM #4: PEV READINESS REGIONAL UPDATE - JULY 2012

David Almeida, CCSE, briefly described the status report on PEV-related developments in the San Diego region since the May REVI meeting. Mr. Almeida discussed the EV Project's progress, the installation of EV charging stations at the San Diego International Airport, the Tesla Model S sedan unveiling to the San

Diego market, regional Clean Vehicle Rebate Program statistics, and highlights from the San Diego PEV Readiness Workshop held on June 14, 2012.

Andy Hoskinson, ECOtality, gave a detailed update on the EV Project in San Diego. According to Mr. Hoskinson, approximately 200 Level 2 240V EV charging stations are being permitted. ECOtality, which controls the Blink EV charging network, will begin charging users money for use of public charging infrastructure. Currently, charging costs are underwritten by The EV Project and charging hosts. Next week the interface for payment will appear on each EV charging station, but users will not be charged. This process will happen for 3 weeks, giving users the option to sign up for a charging plan with the Blink network. Mr. Hoskinson described that by mid-August pricing will be as follows: \$1 per hour for Blink Plus, \$1.50 for Blink Basic (pay as you charge, no membership fees)) and \$2 for guest access. Mr. Hoskinson stressed that the business model is largely built on a cost-recovery pricing structure. In other words, users are charged for plug-time, not necessarily dynamic pricing. These rates are also set nationally, as more analysis is needed before setting regional prices. Currently, there is no cost for Blink Plus membership level in 2012 (normally \$30 annual membership).

Following the presentation, Chris Schmidt, Caltrans District 11, asked Mr. Hoskinson if he could describe the differences between hard costs and operational costs with regards to EV infrastructure. Mr. Hoskinson said that a high percentage of every installation is capital cost compared to operational costs. James Tillman, NRG Energy, stated that the cost of electricity is relatively high in San Diego and stressed that ECOtality includes charging by fractional hour. Mr. Hoskinson said that ECOtality is still determining the dynamic between charge time and plug time with respect to pricing.

Mr. Pointon announced that two new workgroups within the Plug-in Electric Vehicle Collaborative (PEVC) have been formed to address workplace charging and installation in multi-unit dwelling. The PEVC is assembling a template to capture case studies.

# ITEM #5: WORKING DRAFT REVI DOCUMENT - BREAKING DOWN BARRIERS: EVSE INSTALLATION IN MULTI-UNIT DWELLINGS

Mr. Almeida introduced the working document assembled by staff and explained that it is meant to complement existing SDG&E activities by focusing on "customer side of the meter" challenges, issues the utility cannot directly address. Mr. Almeida commented that this document is targeted mostly for property managers and is designed to answer some of the common challenges for MUDs.

Comments, questions, and discussion were as follows:

- Mr. Pointon stated that he has given his MUD presentation to the San Diego Apartment Association and the California Association of Community Managers. Mr. Pointon said that it is critical for REVI to stay in close parallel with PEVC statewide work. Mr. Pointon mentioned that the PEVC will be publishing a 20-page document and a brief one-page guideline regarding MUD issues.
- Mr. Walsh asked if this document addresses key issues from members of the group. Mr. Pointon said the goal is to provide information and tools for property managers to work through the EVSE installation process internally each setup will have to be unique to each situation. Further, Mr. Pointon expressed that each solution needs to be customized to meet the needs of the community.
- Mr. Walsh said it would be helpful for property managers to have a clear idea of what technology is available. He also stated that he could connect the PEVC workgroup to property managers with the Institute of Real Estate Management. Mr. Walsh did mention, however, that rental communities

have more ability for rapid development and PEV charging stations can be advertised as an amenity to renters.

- Mr. Schmidt commented that Homeowner Associations (HOAs) would be very resistant to EVSE installations. He explained that board approval is difficult and any MUD installation document would need to provide very easy installation options and highlight incentives for them. Mr. Schmidt suggested that the group use lessons from earlier resistance to photovoltaics.
- Mr. Hoskinson said that case studies should be an addendum, housed digitally continually growing and site-specific. Mr. Hoskinson suggested that REVI produce a survey/decision tree that will provide a best fit for property managers to find a specific case study that best matches the installation issues with their site.
- David Wang, General Electric, stressed that it is important to assist PEV owners by providing the questions they should be asking their property managers. Mr. Wang also emphasized the importance for REVI to be vendor-neutral.
- Mike Grim, City of Carlsbad, suggested including permitting information in the MUD document.
- Michelle White, San Diego Unified Port District, recommended keeping the MUD material in context and highlighting the benefits for EVSE installations for property managers.
- Ms. Prescott suggested that the document include information relating to resale price and LEED points for EV charging.
- Mr. Almeida commented that data exists for showing increased resale value with PV systems, but he was unaware of any for EVSEs.
- Anna Lowe, County of San Diego, commented that permitting is critical, and companies that are
  involved in property assessments and energy efficiency retrofits could hold valuable information
  about MUD issues. Large renovation projects in the future will be required to meet new EVSE
  standards. Ms. Lowe stressed that EVSE standards be included in Title 24.

#### ITEM #6: ROUNDTABLE ON COMMERCIAL INSTALLATION ISSUES

REVI members and industry representatives directly involved with the installation process for PEV charging stations at commercial sites discussed the challenges and successes experienced in the field and what actions the REVI could undertake to encourage and/or simplify commercial installations.

Comments, questions, and discussion were as follows:

- Mr. Hoskinson commented that on-street charging is important, especially in older urban neighborhoods that might have good demographics for higher PEV adoption but limited available on- and off-street parking. Mr. Hoskinson said that businesses are reluctant to allow a parking space to be "taken away" from an internal combustion engine (ICE) vehicle. Mr. Hoskinson stressed the importance to have a programmatic approach to planning for on-street charging; this should be promulgated on jurisdictional level. Mr. Hoskinson continued that jurisdictions and business should begin with public parking spaces in parking-constrained districts and take a look at regulations and physical constraints. In other words, businesses will have to find a reasonable balance of how many to EV chargers install in one location.
- Jacques Chirazi, City of San Diego, commented that in the City of San Diego on-street charging is not
  a straight forward process. The City requires a neighborhood development permit that includes a 30
  inch height restriction. There is a process to petition this permit, but it is costly and there is no
  certainty that the petition will be accepted. However, Mr. Chirazi mentioned that the City is working
  with the EV Project to find a way around this permit process and is close to a finding a solution.

Further, this is a sensitive topic because it would take away valuable parking space. Mr. Chirazi emphasized that if on-street PEV chargers are seen as a public good, then PEV infrastructure is actually considered an on-street public infrastructure improvement. In this case, Mr. Chirazi said that a public infrastructure permit is not as cumbersome as a neighborhood development permit. However, the cost and risk of the permit is a huge impediment for private business wanting to an install EV charger, especially if the permit is denied and the permitting costs are not recouped.

- Mr. Chirazi commented that beach communities, such as Pacific Beach, have an additional permit process through the Coastal Commission called the Coastal Development Permit. With regards to installing public charging stations, the City is looking at downtown first. Businesses, however, do not want charging stations installed in front of their properties, according to Mr. Chirazi. With that, the City will have to change the municipal parking code. Mr. Pointon suggested that capturing this process and recording the lessons learned will be very valuable to other communities, and REVI can contribute in this way.
- Mr. Schmidt commented that FlexCar had similar challenges with using public space and found solutions to these problems. SANDAG has documentation related to this. Mr. Grim suggested that curb pop outs for traffic calming could be a site for on-street EVSE installations.
- Taylor Hedges, Hedges Electric, also asked the group if revenue sharing between a third-party
  provider with HOAs or commercial host is a viable solution. Mr. Pointon responded to the questions
  by commenting that there are no limitations for HOAs concerning third party negotiations. Mr.
  Pointon also commented that the practical problem is how costly the installations become and if a
  cost-sharing model will pay off.
- Mr. Almeida suggested REVI table the REVI MUD document and align efforts with the PEVC MUD Working Group.
- Mr. Almeida commented that he will reach out to Mr. Walsh to connect PEVC with Institute of Real Estate Managers and will set up a meeting to discuss on-street charging with Mr. Hoskinson and Mr. Chirazi.

#### **ITEM #7: REVI GOALS ADOPTED**

Following the REVI meeting on May 17, 2012, staff distributed a REVI Goals Survey to voting members. The majority of voting members selected Goal 4 to read as follows: "To identify funding opportunities, tax benefits, and other potential incentives that promote PEV and EVSE deployment and support economic development in the region."

#### **ITEM #8: NEXT MEETING**

Mr. Almeida announced that the next meeting is scheduled for Thursday, September 20, 2012 at CCSE from 1:00pm-2:30pm. Topics will include a discussion of the on-street parking best practice guide and follow-up from the commercial installation discussion.

#### **ITEM #9: MATTERS FROM MEMBERS**

No members had any matters to share.

#### **ITEM #10: ADJOURNMENT**

The meeting was adjourned at 2:30 p.m.

### PEV READINESS REGIONAL UPDATE - July-September 2012

A regional update will be included in each REVI Agenda.

#### The EV Project - regional update of EV charging station installations

- Blink Network Map: www.blinknetwork.com/locator.html
- 276 functional Level 2 Blink stations
- 226 publicly accessible Level 2 Blink stations (includes workplace and fleet chargers)
- 110 in permitting/installation phase
- Charging stations are located in 75 different locations

#### • San Diego Airport Charging Stations

According to the San Diego Airport Authority, the installation of charging stations has not been finalized. There are plans to install 10 charging stations at three different locations within the San Diego International Airport (two sites in the Commuter Terminal and one site in Terminal 1). The Terminal 2 "Green Build" expansion project will include 40 charging stations, but will not be publically available until August 2013.

#### Car2Go

Car2Go will soon deploy 87 more Smart EVs in the San Diego area. In addition, after working with both the City of San Diego's inspection office and SDG&E, Car2Go has submitted a power service request to SDG&E and will begin the permitting phase for approximately 40 in-house charging stations. The "charging barn" is located adjacent to the Car2Go office. Baker Electric is the licensed electrician contracted on the project.

#### National Plug-In Day

National Plug-In Day is Sunday, September 23, 2012. See the attached flyer for information on the San Diego event hosted at the California Center for Sustainable Energy.







Date: Sunday, **Setpember 23, 2012** 

Time:

10:00 a.m. – 2 p.m.

Location:

**California Center for Sustainable Energy** 8690 Balboa Ave., Ste. 100 San Diego, CA 92123

Register online at:

http://tinyurl.com/968bh5y

# National Plug In Day is September 23

## Join us in celebrating National Plug In Day in San Diego!

Bring your electric vehicle (EV), the family, or just your curiosity to learn more about these truly amazing vehicles. National Plug In Day is the nation's largest grassroots EV event celebrated in over 60 cities.

## Come learn about the following:

- Public Charging Infrastructure Update—ECOtality will share the latest information and locations of public chargers
- Special utility rates for EV drivers—San Diego Gas & Electric EV experts will answer questions about special EV rates that can help drivers pay the lowest price for their EV fuel, when charging from midnight to 5 a.m.
- New Vehicles—local dealers will have the newest plug-in vehicles on display
- Life as a EV owner—hear from your neighbors who have already made the switch to a plug-in vehicle!

Lunch is sponsored by San Diego Gas & Electric and will be provided for all who register.

Last year's celebration marked the largest gathering of electric vehicles in San Diego history so mark your calendars and come to San Diego's National Plug In Day celebration at CCSE!

www.pluginday.org

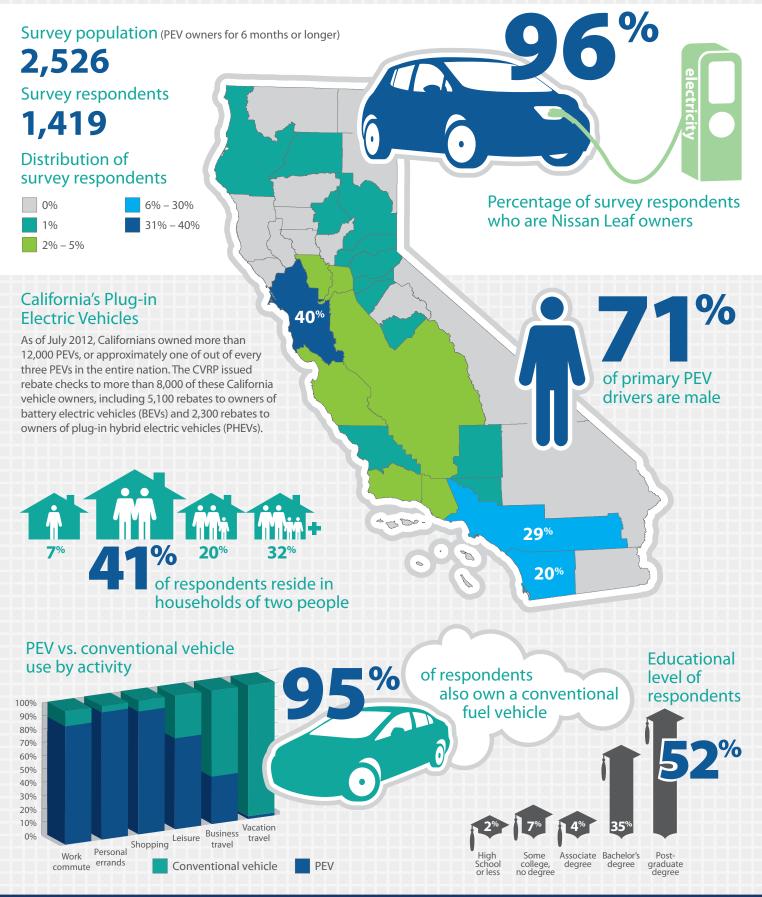


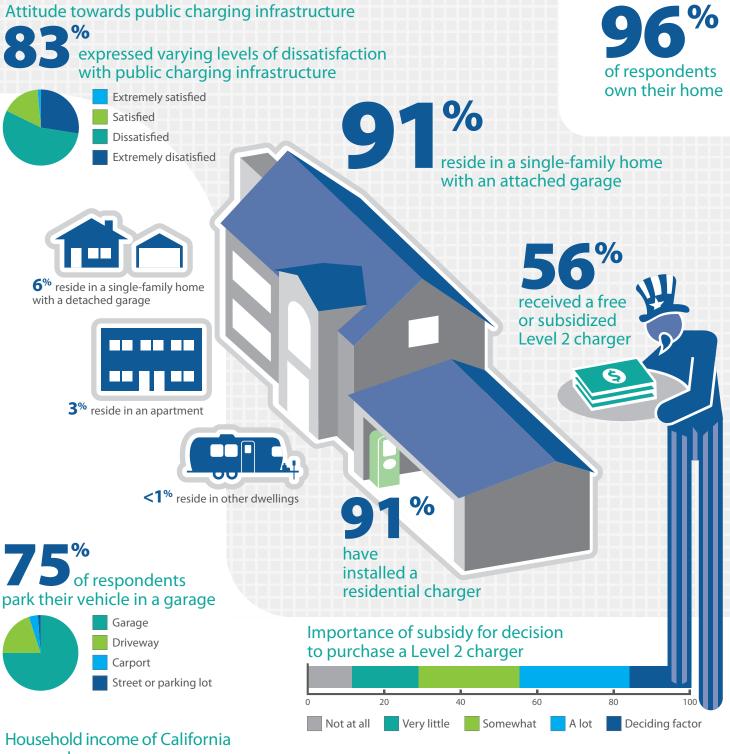


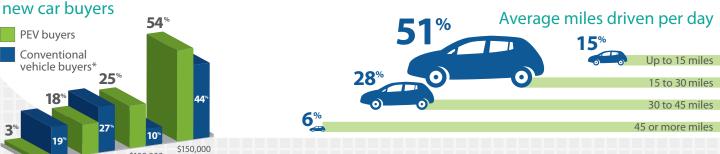


# **CLEAN VEHICLE REBATE PROJECT**

Plug-in Electric Vehicle (PEV) Owner Survey Summary Statistics







<sup>\$100,000</sup> \*Source: Gil Tal, UC Davis, Plug-in 2012 Conference, July 2012

\$50,000

\$100,000

\$150,000

or more

than \$50,000

#### California Energy Commission PEV Infrastructure Awards for San Diego

In mid-August, the California Energy Commission (CEC) announced the recipients for this year's second round of alternative fuel infrastructure grants, which includes support for the installation of EV charging stations. The San Diego region received approximately \$1.35 million of the \$4.65 million awarded statewide to fund EVSE installations. This funding was sourced from the Alternative and Renewable Fuel and Vehicle Technology Program (AB 118).

Below is a list of the funding highlights for the San Diego region:

#### Coulomb Technologies: ~\$500,000 to fund the MultiCharge San Diego Project

- The MultiCharge San Diego Project partners include Coulomb Technologies, Inc., San Diego Gas and Electric (SDG&E) and the City of San Diego. The project partners will collaborate to identify owners of apartment buildings, condominium associations, and mixed-use projects which have a need for EVSE charging stations. The overall goals of the project include:
  - Installing 137 EVSE Level 2 charging stations (or 206 ChargePoints) that are networked to include billing, maintenance, and authentication software.
  - Deployment of a multi-unit dwelling (MUD) metering pilot. SDG&E will provide load research metering on up to 40 EVSE installations in MultiCharge San Diego to help the utility expand its very limited load information on EV charging in the MUD environment. This pilot will help California and Coulomb to guide development of sub-metering protocols in the California Public Utilities Commission (CPUC) Alternative-Fueled Vehicle Order Instituting Rulemaking, currently under development.
  - Collaboration with the City of San Diego and SDG&E streamlining the permitting and installation process for EVSE infrastructure at MUD locations.
  - Partnering with car sharing services to integrate EVSE infrastructure with PEV deployment at MUD locations
- According to the CEC, the scope of work is currently being developed by the CEC and Coulomb personnel.

#### AeroVironment: ~ \$315,000 San Diego EVSE deployment and Car2Go projects

- AeroVironment provides customers with a broad selection of charging solutions for the home, workplace, retail environment, fleet, and highway. In San Diego County, AeroVironment will install a number of residential charging stations through the Cal Electric Residential EVSE Deployment program.
- AeroVironment is also partnering with Car2Go's fleet EVSE program, which will include installations
  of charging stations at local apartment venues and YMCAs.

#### RWE and University of California, San Diego (UCSD): \$290,000 Smart Charging Project

- RWE (the 2nd largest German utility) and it industrial partner ABB will rollout 26 Level 2 and three
  public DC fast charging stations on the UCSD campus. Each of the charging stations included in the
  project are equipped with cutting edge technology designed to enable bi-directional communication
  between the EVSE, vehicle and utility grid.
- This technology allows the utility the ability to communicate in real-time with each unit as well as the following functionality:
  - Roaming (automatic payment between EVSP networks)
  - Price-based charging
  - o Fleet management demand response
  - o Autonomous power control of each unit
- When combined with the UCSD's existing contracts for 22 Blink charging stations and 3 Coulomb stations, these three new awards will make UCSD the largest, most diversified portfolio of EV charging stations at any university in the world.
- RWE bid exclusively with UCSD while also providing a significant amount of private funding in order to test this pilot project with UCSD's microgrid.
- The three DC fast chargers will be the first installations and is scheduled to begin in the first quarter of 2013.

# <u>Green Charge Networks: ~\$250,000 Installation of 4 Smart Grid Enabled DC Fast Chargers in San Diego</u> region

- Green Charge Networks was formed four years ago and is headquartered in New York City with a
  West Coast office in Huntington Beach, California. Green Charge's involvement in EV infrastructure
  began with work as a sub-contractor for Con Edison developing smart grid technologies that connect
  to distributed energy storage systems.
- Green Charge's proposal includes battery storage technology with Smart Grid enabled DC fast charging stations. Four DC fast chargers will be installed in the Cities of San Diego (two stations), Del Mar and Carlsbad.
- Green Charge has partnered with the corporate management of 7-Eleven, and will include an opensource system for PEV drivers. Pricing has not been established. However, both 7-Eleven and Green Charge Networks are negotiating the specific billing structure.
- Engineering and site visits are scheduled to begin in spring 2013, with installation of the DC fast chargers expected in summer 2013.

CEC Award: PON-11-602

Alternative Fuels Infrastructure: Electric, Natural Gas, Propane, E85, and Diesel Substitutes Terminals

**EVSE Awards In San Diego Region** 

Awardee	Award Category/Project		Funding Requested		Proposed Award	
	Residential (Single-unit and Multi-unit Dwelling)					
Coulomb Technologies	MultiCharge San Diego	\$	499,512	\$	499,512	
AeroVironment, Inc	Cal Electric: Residential EVSE Deployment San Diego County	\$	500,000	\$	166,667	
	Workplace Charging					
Alternative Energy Systems Consulting, Inc	Forty-One Workplace Charging Outlets @ UC San Diego	\$	75,000	\$	75,000	
Alternative Energy Systems Consulting, Inc	Ten RWE Level II Fleet Charging Outlets @ UC San Diego	\$	69,446	\$	69,446	
AeroVironment, Inc	Car2Go Fleet EVSE Program - Apartment Venues	\$	75,000	\$	75,000	
AeroVironment, Inc	Car2Go Fleet EVSE Program - YMCAs	\$	75,000	\$	75,000	
	DC Fast Charging					
Alternative Energy Systems Consulting, Inc	Three ABB/RWE DC Fast Chargers @ UC San Diego	\$	145,554	\$	145,554	
*Green Charge Networks, LLC	Smart Grid Enabled DC Fast Charging -With Energy Storage 2805 Garnet Avenue, San Diego	\$	127,983	\$	62,500	
(*All locations are 7-Elevens)	Smart Grid Enabled DC Fast Charging -With Energy Storage 4080 Convoy Street, San Diego	\$	127,983	\$	62,500	
	Smart Grid Enabled DC Fast Charging -With Energy Storage 13801 Mango Drive, Del Mar	\$	130,183	\$	62,500	
	Smart Grid Enabled DC Fast Charging -With Energy Storage 901 Palomar Airport Road, Carlsbad, ca	\$	130,183	\$	62,500	
	Total San Diego EVSE Funding	\$	1,955,844	\$	1,356,179	
	Total Statewide EVSE Funding	\$	18,694,339	\$	4,656,468	