

SAN DIEGO REGIONAL ELECTRIC VEHICLE INFRASTRUCTURE WORKING GROUP

MEETING NOTICE AND AGENDA

Date: Thursday, August 15, 2013

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

Location: San Diego Gas & Electric Energy Innovation Center
4760 Clairemont Mesa Blvd.
San Diego, CA 92117

Staff Contact: Tyler Petersen
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AGENDA HIGHLIGHTS

- PERMITTING/INSPECTION FOR COMMERCIAL INSTALLATIONS
- EVSE AT MULTI-UNIT DWELLINGS FACT SHEET
- REGIONAL PLANNING FOR PUBLIC EVSE SITING FACT SHEET
- DRAFT READINESS PLAN OUTLINE

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.



www.energycenter.org/pluginready

SAN DIEGO REVI

Thursday, August 15, 2013

ITEM #	RECOMMENDATION
1. WELCOME AND INTRODUCTIONS	
2. ANNOUNCEMENTS	
<p>Members of the public shall have the opportunity to address San Diego Regional Electric Vehicle Infrastructure Working Group (REVI) on any plug-in electric vehicle (PEV) 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.</p>	
+3. MEETING SUMMARY	APPROVE
<p>The REVI is asked to review and approve the July 18, 2013 meeting summary.</p>	
CONSENT ITEM	
+4. REGIONAL PEV BARRIERS PROGRESS REPORT	INFORMATION
<p>The REVI barriers table is attached.</p>	
REPORT ITEMS	
5. BARRIER 1.B: PERMITTING/INSPECTION FOR COMMERCIAL INSTALLATIONS	DISCUSSION
<p>REVI members have discussed EVSE permitting and installation challenges for residential installations. Commercial EVSE permitting and installations can encounter additional challenges. The REVI is asked to discuss the issues facing permitting and inspection for commercial installations. This discussion will inform the fact sheet to be presented at next months meeting.</p>	
+6. BARRIER 6: EVSE AT MULTI UNIT DWELLINGS	DISCUSSION AND ACCEPT
<p>Multi-unit dwellings (MUD) offer unique challenges and has been identified as a key barrier to EVSE installations. Staff has developed a simple fact sheet for REVI members and other interested parties to distribute to the public about what residents can do and steps they can take to address the unique MUD installation circumstances and challenges. The REVI is asked to discuss and accept the MUD fact sheet as a primary and universal resource for public distribution and information.</p>	

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|------------|---|------------------------------|
| +7. | BARRIER 7: REGIONAL PLANNING FOR PUBLIC EVSE SITING | DISCUSSION AND ACCEPT |
| | Regional EVSE infrastructure planning and implementation has evolved as the number of PEV drivers grows. Previous planning efforts and EVSE installations are being assessed and modified as new and changing charging needs emerge. Understanding historic efforts will help support and accommodate the expanding demand for public infrastructure. The REVI is asked to discuss and accept the regional planning for public EVSE siting fact sheet as a primary and universal resource for public distribution and information. | |
| +8. | BARRIER 11: PEVS IN GOVERNMENT FLEETS | DISCUSSION AND ACCEPT |
| | Integration of PEVs into local government fleets has presented unique challenges. Staff has developed a fact sheet for REVI members and other interested parties to distribute to fleet managers about what local agencies have adopted into fleet vehicle policies to include PEVs, what incentives and rebates are available, considerations for selecting the right PEVs for their fleet needs, and how to charge them. The REVI is asked to discuss and accept the government fleet solutions highlighted within the fact sheet as useful and consistent best practices and resources for the region. | |
| +9. | REVISED DRAFT PEV READINESS PLAN OUTLINE | INFORMATION |
| | A draft outline of the PEV Readiness Plan has been presented to REVI. Comments were provided and incorporated into a revised draft Outline. The draft outline is attached and will be the primary construct for the Readiness Plan. A draft Readiness Plan will be presented to REVI for review and comment over the course of the remaining meetings. | |
| 10. | MATTERS FROM MEMBERS | INFORMATION |
| | Time permitting; REVI members are encouraged to discuss additional topics of general interest. | |
| 11. | NEXT MEETING | INFORMATION |
| | The next REVI meeting is scheduled for Thursday, September 19, 2013 , at the SDG&E Energy Innovation Center, 4760 Clairemont Mesa Blvd., San Diego, CA 92117. | |
| 12. | ADJOURNMENT | |

+ next to an item indicates an attachment

July 18, 2013 MEETING SUMMARY

ITEM #1: WELCOME AND INTRODUCTIONS

Vice Chair Mike Ferry, California Center for Sustainable Energy (CCSE), called the meeting to order at 1:07 p.m. and welcomed everyone to the San Diego Regional Electric Vehicle Infrastructure Working Group (REVI).

ITEM #2: ANNOUNCEMENTS

Brendan Reed, City of Chula Vista, announced that Car2Go services have expanded to include the City of Chula Vista.

Chris Schmidt, Caltrans District 11, announced that Caltrans, in association with ECotality and SDG&E, have installed DC fast chargers at the Del Lago Park and Ride. Mr. Schmidt said that the fast chargers are scheduled to be operational by August 31, 2013.

Randy Shimka, San Diego Gas and Electric (SDG&E), said that Del Lago Park and Ride will also have solar panels installed on-site.

Molly Ash, Cuyamaca Community College, said that Cuyamaca Community College in conjunction with Ecotality, will be breaking ground for six DC fast chargers on campus.

Mo Lahsaie, City of Oceanside, said that they, in conjunction with Ecotality, will be breaking ground soon on four Level 2 and two DC fast chargers at the Oceanside Harbor very close to Interstate 5.

ITEM #3: SUMMARY OF THE MAY 16, 2013 MEETING

There were no changes requested to the May 16, 2013 meeting summary.

Mr. Schmidt motioned to approve the minutes. Mr. Reed seconded the motion. Motion carried without opposition.

CONSENT ITEM

ITEM #4: REGIONAL PEV BARRIERS PROGRESS REPORT

Mr. Ferry noted that the attached PEV barriers table contains updated information on REVI's progress.

REPORT ITEMS

ITEM #5: BARRIER 4: TRAINING AND EDUCATION FOR MUNICIPAL STAFF AND ELECTRICAL CONTRACTORS

Anna Lowe, San Diego Association of Governments (SANDAG), reviewed the attached fact sheet developed for municipal staff. Ms. Lowe commented that the document contained resources and technical training information to assist local public agencies become PEV ready.

REVI members provided the following comments:

- Mr. Reed suggested that there should be a linkage between this fact sheet and regional Climate Action Plans.

- Mr. Schmidt said that there should be a statement added that stresses the importance of infrastructure before having services such as car2go provided for a particular city. Mr. Schmidt further added that there are publicly available subsidies at the municipal level for such infrastructure.
- Mr. Reed commented that he likes how the fact sheet is presented.
- Mr. Schmidt clarified whether or not this will be a clickable information sheet online.
- Ms. Lowe responded that most links are called out so that people can also have the opportunity to print it out and take it with them and figure out where the information is located.
- Ms. Lowe requested that REVI members inform either SANDAG or CCSE about new, relevant resources so that it can be easily incorporated into the readiness plan.
- Mr. Schmidt commented that if these documents are to be published sooner rather than later, perhaps the group won't have to approve one document after the other.
- Mr. Lahsaie commented that the Oceanside Fire Department was pleased to see PEV safety training for first responders included in the fact sheet.
- Tony Williams, Quick Charge Power, noted that Tesla has a video on its website specifically for first responders.

Ms. Lowe then guided the group to the next fact sheet for electrical contractors. Ms. Lowe noted that this resource displays EVSE trainings available for regional electrical contractors, and EVSE equipment installation and maintenance best practices.

REVI members provided the following comments:

- Ms. Ash commented that Cuyamaca College will be offering an updated Electric Vehicle Infrastructure Training Program (EVITP) 3.0 training program with 32 hours of instruction. Ms. Ash said that the EVITP instructors attended training three weeks ago and they are ready to begin offering the course in September. Ms. Ash said more information will come later.
- Mr. Schmidt expressed concern that the committee remains objective and that a disclaimer be added to the fact sheet clarifying it is for informational purposes only and that REVI is not endorsing one particular program or product over another.
- Mr. Reed asked if these documents are stand-alone handouts.
- Ms. Lowe said that what information is compiled through the REVI meetings will be incorporated in a more narrative format in the readiness plan.
- Mr. Schmidt suggested that other agencies could review the information.

ITEM #6: BARRIER 5: LACK OF PUBLIC KNOWLEDGE OF PEV AND EVSE

Allison King, SANDAG, reviewed the attached fact sheet developed to address PEV outreach and education for the general public. Ms. King commented that the information covers what a plug-in electric vehicle is, how it works and how it's charged.

REVI members provided the following comments:

- Ms. King noted that the San Diego Clean Cities Coalition and SDG&E are working on informational material for dealerships.
- Mr. Schmidt suggested there be a video made of testimonials for why people buy PEVs.
- Ms. Lowe noted that SANDAG would not be able to create these videos, but another group might want to take it on.

- Michelle White, Port of San Diego, suggested the Clean Cities Coalition create the videos.
- Mr. Shimka said that National Plug-in Day may be a good opportunity to get people willing to provide testimonials in a video.
- The group agreed and suggested that the video be hosted on the Clean Cities website.
- Dennis Mello, San Diego Regional Clean Cities Coalition (SDRCCC), noted that the Clean Cities website does not receive a high volume of traffic and may require other organizations lead visitors to the website for viewing.
- Tyler Petersen, CCSE, briefly updated the REVI members about the dealership project. Mr. Petersen said that the project is a collaborative effort between SDG&E, SDRCCC, SANDAG, CCSE, and the CVRP; the goal is to create a one-page information sheet for dealers to place in a newly purchased PEV. Mr. Petersen commented that a final product will be ready for REVI review in the next couple of months.
- A member of the public asked whether or not the government is still giving out HOV access stickers for PEVs, because it is a great incentive to highlight and should be clarified in the fact sheet.
- Mr. Ferry described the differences between the two HOV access stickers: white HOV stickers are available to battery electric vehicles and green HOV stickers are available to plug-in hybrid electric vehicles.
- Mr. Petersen stated only 40,000 green HOV access stickers will be available. Approximately 15,000 have been distributed to-date.

ITEM #7: BARRIER 10: COMMERCIAL AND WORKPLACE CHARGING

Mr. Petersen reviewed the one page fact sheet for workplace charging.

REVI members provided the following comments:

- Mr. Shimka described SDG&E's experience with workplace charging and lessons learned.
- Mr. Schmidt expressed concern about charging employees for workplace charging. Mr. Schmidt said Caltrans is trying to figure out how to make chargers available to the public and provide free service for employees.
- The group discussed the topic of making employees pay for workplace charging.
- Mr. Shimka provided an example of SDG&E's workplace charging scenario, in which there is a kiosk used to keep track of the electricity consumed by each vehicle.
- The group agreed that a resource describing successful models for workplace charging would be helpful and should be developed..

Mr. Schmidt motioned to adopt and approve the fact sheets that had been presented in the meeting. Mr. Reed seconded the motion. Motion carried without opposition.

ITEM #8: DRAFT PEV READINESS PLAN OUTLINE

Ms. Lowe presented to the group the key components of the draft readiness plan outline.

REVI members provided the following comments:

- Mr. Reed said that the Governor's executive order should be added to the introduction so that decision makers feel the demand to support EVs.
- Mr. Schmidt commented that it would be interesting to see what is motivating people to adopt PEVs.

- Mr. Petersen noted that the readiness plan will include demographics on regional PEV owners, but lacks testimonials from drivers.
- The group engaged in a discussion about the overall tone of the readiness plan. Mr. Schmidt believed that the plan should more represent the public interest rather than just what agencies should do; the plan should be more relatable.
- Mr. Schmidt described a disconnect he sees between the barriers table and the flowchart.
- Ms. Lowe noted that the flowchart clusters the barriers table to be more understandable.
- Susan Freed, County of San Diego, said that perhaps the recommendations should be targeted to the segment of the community that is adopting PEVs.
- Mr. Schmidt asked how the group will address problems people will meet, such as range anxiety.
- Mr. Reed asked if CVRP data would be used in the plan to help answer characteristics about PEV drivers; Mr. Ferry responded that they are not yet sure how to use CVRP data in the plan.
- Ms. Lowe said that the remaining fact sheet will be reviewed during the August meeting, a draft readiness plan will be presented in September and the public workshop is slated for early October.
- The group discussed timing issues for the public workshop in relation to National Plug-in Day.

ITEM #9: MATTERS FROM MEMBERS

There were no matters from members.

ITEM #10: NEXT MEETING

The next REVI meeting is scheduled for Thursday, August 15, 2013 at the SDG&E Energy Innovation Center, 4760 Clairemont Mesa Blvd, San Diego, CA 92117.

ITEM #11: ADJOURNMENT

The meeting was adjourned at 2:32PM.

REVI Member Attendance July 18, 2013

REPRESENTATION		NAME	MEMBER / ALTERNATE	ATTENDING
South County Subregion	City of Chula Vista	Brendan Reed	Member	YES
	City of Imperial Beach	Chris Helmer	Alternate	NO
North County Coastal Subregion	City of Del Mar	Ramsey Helson	Member	NO
	City of Carlsbad	Mike Grim	Alternate	NO
North County Inland Subregion	City of Escondido	Kathy Winn	Member	NO
	Vacant	Vacant	Alternate	-
East County Subregion	City of Santee	Kathy Valverde	Member	NO
	City of La Mesa	Scott Munzenmaier	Alternate	NO
City of San Diego		Jacques Chirazi	Member	NO
		Vacant	Alternate	-
County of San Diego		Peter Livingston	Member	NO
		Susan Freed	Alternate	YES
San Diego Association of Governments		Susan Freedman, Chair	Member	NO
		Allison King	Alternate	YES
San Diego Regional Airport Authority		Paul Manasjan	Member	NO
		Brett Caldwell	Alternate	NO
Caltrans, District 11		Chris Schmidt	Member	YES
		Vacant	Alternate	-
Unified Port District of San Diego		Michelle White	Member	YES
		Jenny Lybeck	Alternate	NO
San Diego Gas & Electric		Joel Pointon	Member	NO
		Randy Shimka	Alternate	YES
California Center for Sustainable Energy		Mike Ferry, Vice Chair	Member	YES
		Colin Santulli	Alternate	NO
University of California, San Diego		Dave Weil	Member	NO
		Jim Ruby	Alternate	NO
Miramar College, Advanced Transportation Technology and Energy Program		Greg Newhouse	Member	NO
		Vacant	Alternate	-
San Diego Electric Vehicle Network		Randy Walsh	Member	NO
		Vacant	Alternate	-
National Electrical Contractors Association		Karen Prescott	Member	NO
		Tim Dudek	Alternate	NO
International Brotherhood of Electrical Workers Local 569		Micah Mitrosky	Member	NO
		Vacant	Alternate	-
ADVISORY MEMBERS				
Department of Defense		Chris Parry		NO

REPRESENTATION	NAME	MEMBER / ALTERNATE	ATTENDING
San Diego Air Pollution Control District	Mike Watt		NO
	Nick Cormier		YES
Metropolitan Transit System	Claire Spielberg		NO
City of Coronado	Bill Cecil		YES
City of Encinitas	Diane Langager		NO
City of National City	Ray Pe		NO
City of Solana Beach	Dan King		NO
City of Vista	Lyn Dedmon		NO
Ecotality	Andy Hoskinson		NO
Car2go	Mike Cully		NO
Aerovironment	Charlie Botsford		NO
Coulomb Technologies	Colleen Quinn		NO
General Electric	David Wang		NO

Others in Attendance

Anna Lowe, SANDAG

Tyler Petersen, CCSE

Jessica Jinn, CCSE

Mo Lahsaie, City of Oceanside

Tony Williams, Quick Charge Power

Molly Ash, Cuyamaca Community College

Four members of the public

Progress on Regional Plug-in Electric Vehicle (PEV) Barriers

Barrier	Progress on Solutions – Preparation of Guidance Materials	Action Items
<p>1. Permitting/Inspection Lack of streamlined permitting and inspection processes and inconsistent (high) costs across jurisdictions.</p>	<ul style="list-style-type: none"> • Residential permit and inspection guidelines accepted by REVI on 3/21/13. • Residential guidelines distributed to REVI and jurisdictions in 3/2013, and posted online at www.energycenter.org/pluginready. • City of San Diego and Oceanside permitting guidelines served as examples. • OPR draft permitting documents provided at 5/16/13 meeting. 	<ul style="list-style-type: none"> • State information addresses SF residential; MUD; workplace; retail and public sector; and fast charging. • Share input from San Diego region with OPR and utilize elements of the State PEV guidebook in the Readiness Plan • REVI to discuss and approve permitting and inspection guide for commercial installations fact sheet at 8/15/13 meeting
<p>2. Building Codes Lack of standard building codes that accommodate charging infrastructure or dedicate circuits for charging infrastructure in new construction and major renovations.</p>	<ul style="list-style-type: none"> • REVI feedback on codes incorporated into CCSE’s regional readiness assessment (DOE project), Nov-Dec. 2012. • REVI topic at 5/16/13 meeting with presentation on Title 24. • REVI identified building codes as a barrier to work closely with the state on in order to develop regional and statewide consistency. 	<ul style="list-style-type: none"> • REVI will document the barriers and gaps, and ways to coordinate with the state on building codes in the Readiness Plan.
<p>3. Zoning and Parking Rules Lack of standard regional ordinances that facilitate the installation and access to publicly available charging infrastructure.</p>	<ul style="list-style-type: none"> • REVI topic at 4/18/13 and 5/16/13 meetings. • REVI feedback on parking incorporated into CCSE’s regional readiness assessment (DOE project), Nov-Dec. 2012. • City of San Diego Technical Policy on addressing accessibility to EV charging stations presented/ distributed at May 2012 REVI. • Comments submitted to OPR on behalf of REVI 6/6/13 in response to draft EV charging station accessibility guidance. 	<ul style="list-style-type: none"> • In the Readiness Plan, REVI will document the progress made in addressing accessibility, and describe the barriers and gaps encountered during the EV Project and other local installations that require coordination at the state level.
<p>4. Training and Education for Municipal Staff and Electrical Contractors Lack of knowledge about PEVs and EVSE</p>	<ul style="list-style-type: none"> • Training provided for municipal staff on PEV infrastructure on 1/29/13 at SDG&E EIC. • REVI feedback on training incorporated into CCSE’s regional readiness assessment (DOE project), Nov-Dec. 2012. • Greg Newhouse (Miramar College ATTE) administered EV and AFV training for SANDAG’s Freeway Service Patrol (tow-truck drivers) and CHP 6/8/13. • The California Manual on Uniform Traffic Control Devices released a policy directive on 3/14/13 including zero emission vehicle signs and markings for consistent statewide use • REVI approve fact sheet at 7/18/13 meeting 	<ul style="list-style-type: none"> • Use California PEV Collaborative’s Toolkit to further address this item. • The information included in the approved fact will inform the Readiness Plan.
<p>5. Lack of Public Knowledge of PEV and EVSE Municipal outreach to Local Residents and Businesses</p>	<ul style="list-style-type: none"> • Discussed locally at PEV Workshop at CCSE on 6/14/12. • CVRP PEV owner survey conducted. Results at 9/20/12 REVI. • REVI feedback on public outreach incorporated into CCSE’s regional readiness assessment (DOE project). • REVI approve fact sheet at 7/18/13 meeting 	<ul style="list-style-type: none"> • The information included in the approved fact will inform the Readiness Plan.

Barrier	Progress on Solutions – Preparation of Guidance Materials	Action Items
<p>6. EVSE at Multi Unit Dwellings Consumer lack of knowledge regarding EVSE installation in these buildings. Need to educate and work with HOAs to identify and find solutions to unique building challenges.</p>	<p><i>Region is recognized leader on this issue.</i></p> <ul style="list-style-type: none"> • REVI topic at 4/18/13 meeting. • SDG&E published case study in March 2013. • SDG&E published fact sheet on EVSE install process for MUDs. • SDG&E holds quarterly MUD workshops at EIC. • REVI discussed MUD issues at May and July 2012 meetings. 	<ul style="list-style-type: none"> • Showcase SDG&E MUD activities and barrier busting in Readiness Plan. • Develop complementary materials (if needed) for MUD owners/ occupants that fill information gaps in what SDG&E can provide under CPUC rules. • REVI to discuss and approve MUD fact sheet at 8/15/13 meeting
<p>7. Regional Planning for Public EVSE Siting Regional land use and transportation plans served as a basis to identify optimal public EVSE sites. In rollout of EV Project, experience was different from planning. Alternate approaches have been taken to increase public EVSE hosts and sites.</p>	<p><i>Region is recognized innovator on this issue.</i></p> <ul style="list-style-type: none"> • REVI topic at 3/21/13 meeting. • SANDAG produced report on The EV Project’s approach to identifying optimal sites for public EVSE based on local land uses and transportation network. • CCSE presented initials findings of CVRP survey and interviews with EVSE commercial/agency hosts. To release report at some point. 	<ul style="list-style-type: none"> • SANDAG (1) producing fact sheet on regional EVSE planning from EV Project, (2) preparing maps of optimal Level 2 and DCFC EVSE sites for each local jurisdiction, and (3) preparing public agency guidelines for including EVSE in new construction. • CCSE (1) producing fact sheet on value proposition to host EVSE and (2) to release full report on same topic. • REVI to discuss and approve regional planning for public EVSE siting fact sheet at 8/15/13 meeting
<p>8. On Peak Charging – TOU Utility Rates A. Need to discourage charging when electricity supplies are in high demand and cost more. Support of time of use (TOU) pricing. B. High demand charges that impact EVSE host utility bills. Expensive metering options to access TOU rates.</p>	<p><i>Region is recognized leader on TOU PEV rates.</i></p> <ul style="list-style-type: none"> • Local standout area for solution/ use of TOU rates that encourage off-peak charging. SDG&E holds regular workshops on EVSE hosting and PEV Rates. 	<ul style="list-style-type: none"> • Obtain findings from SDG&E and EV Project to include (and showcase) in Readiness Plan.
<p>9. Public Agency EVSE Installations Contracting issues have stalled many public agencies from taking part in The EV Project. Need to identify common project barriers and find solutions.</p>	<ul style="list-style-type: none"> • RFP template for public agencies (and commercial entities) accepted by REVI at 3/21/13 meeting. • RFP template distributed to REVI stakeholders and uploaded to REVI website at www.energycenter.org/pluginready. 	<ul style="list-style-type: none"> • Track progress of agencies/ institutions to site and install EVSE.
<p>10. Commercial and Workplace Charging Lack of understanding regarding benefits and approaches to understanding workplace charging.</p>	<ul style="list-style-type: none"> • REVI topic at 3/21/13 meeting and focus of CCSE analysis of value proposition of hosting EVSE. (see barrier 7) • Ecotality shared initial EV Project findings on public and workplace charging. • REVI approve fact sheet at 7/18/13 meeting 	<ul style="list-style-type: none"> • The information included in the approved fact will inform the Readiness Plan.
<p>11. PEVs in Government Fleets Procurement justification needed for local public fleets. Need to describe PEV benefits, including role in reducing municipal GHGs for Climate Action Plans.</p>	<ul style="list-style-type: none"> • CCSE reviewing local government CAPs for policies to support fleet purchases for local governments (spring 2013). 	<ul style="list-style-type: none"> • REVI to discuss and approve PEVs in government fleets fact sheet at 8/15/13 meeting

Plug-in Electric Vehicles

Charging at Condos, Apartments, and Community Living Areas

By 2050, half of the San Diego Region's population is expected to be living in multi-unit dwellings (MUD). When it comes to accommodating EV chargers, each MUD has its own unique set of circumstances and challenges to address. Below are some of the most common challenges and ways that local apartment buildings, homeowner associations (HOAs), and condos have addressed them. This document was designed to be used in conjunction with SDG&E's fact sheet on installing PEV charging stations in multi-unit dwellings titled, *Prepping Multi-Units for Plug-in Vehicles*.

Reaching Out to Building Management or HOA

Since EV chargers will likely be installed in common areas, it is important to engage the building management or HOA early in the process. Identify any existing rules in the covenants, conditions and restrictions ("CC&Rs") that could affect the installation of charging stations. It is best to be prepared and aware of any potential hurdles or opportunities by doing the research before approaching building management.

Determining Demand for EV Charger Installations

Survey residents to gauge their interest in purchasing a plug-in electric vehicle (PEV). This survey will help determine the number of charging units and/or conduit to install and in what layout(s). Identify demand for Level 1 versus Level 2 charging. Planning ahead by installing extra capacity for future charging units can save on costs down the road.

The PEV Collaborative has developed a sample survey for MUD residents.

www.driveclean.ca.gov/pev/Charging/Home_Charging/Multi-unit_Dwellings.php#survey

Allocating Costs

It is important to establish how EV charger installation, operations, maintenance, insurance, and electricity bills will be paid. How costs are allocated will depend on how the chargers are installed. Potential options include:

- **Chargers in assigned spots:** Individual meters installed for each charging station and resident covers the actual charger cost, billing, insurance, and maintenance of the unit. Installation costs for the meters, panel upgrades, and conduit can either be covered by management, the resident, or shared.
- **Common area chargers for residents only:** Building management installs EVSE in common area and recoups costs from residents through a billing system in the charger.
- **Common area chargers for residents and general public:** Building management installs EVSE in public common area and recoups costs from residents and public through a billing system in the charger.

Tips for approaching building management about EV Charging

- Talk to other residents about their interest in EV charging and build a coalition of support
- Look for incentives for chargers available in your area:
<http://www.driveclean.ca.gov/pev/Incentives.php>
- Review the parking layout in relation to electrical supply and propose possible arrangements
- Contact SDG&E to help determine necessary panel and/or meter upgrades

Siting EV Chargers

Identify the location and type of electric metering and wiring in the parking area. Determine if existing supply is adequate or if a meter/panel upgrade is needed. If an upgrade is required, consider the capacity needed to accommodate additional PEV chargers in the future.

Power supply for EV chargers

- The closer the EVSE is to the power supply, the lower the installation costs will be.
- Installation costs will increase if a panel upgrade or meter installation is necessary. The power supply needs for Level 1 and Level 2 EVSE are as follows:
 - **Level 1:** Dedicated branch circuit with NEMA 5-15R or 5-20R Receptacle
 - **Level 2:** Dedicated branch circuit hardwired to a permanently –mounted EVSE with the following specifications: 240VAC/Single Phase, 4-wire, 40 Amp Breaker.

Assigned vs. unassigned parking spaces

Consider which assigned and unassigned parking spaces could accommodate PEV charging equipment. Key factors include:

- Proximity to electric meter; trenching through concrete is costly. Soft landscapes or locations near the electric meter are preferred.
- Location for charging stations and bollards (short vertical post) to ensure EVSE cord does not present a tripping hazard

Accessibility to EV Chargers

See the City of San Diego EVSE accessibility guidelines for sample EVSE configurations:

www.sandiego.gov/development-services/industry/pdf/tpolicy11b1.pdf

Policy Considerations

Legislation has been adopted in California to reduce barriers to the installation of EVSE in multi-unit dwellings. SB 880 prohibits common interest developments (e.g. Condo/apartments) from restricting the installation of an EVSE in a deeded/contracted parking space. If the charging unit is installed in a common area, the law does state that certain conditions can be imposed, including a \$1 million home owner liability policy that names the HOA as an additional insured.

Resources for MUDs

San Diego Gas & Electric

www.sdge.com/clean-energy/residential/apartments-and-condos

SDG&E Quarterly MUD Vehicle Charging Workshops - www.seminars.sdge.com

Plug-in Electric Vehicle Resources Center

http://www.driveclean.ca.gov/pev/Charging/Home_Charging/Multi-unit_Dwellings.php

eVgo for Multi-Family Buildings

www.evgonetwork.com/own-or-manage-multi-family-communities/

Regional Planning for Public Charging in San Diego

Regional and local government and public agencies develop land use and transportation plans that serve as the regulatory framework for current and future development. As new plans are prepared and existing plans are updated, electric vehicle supply equipment (EVSE) can be integrated to create an optimal infrastructure network which would facilitate more rapid deployment of plug-in electric vehicles (PEVs) in the San Diego region. Expansion of the EVSE infrastructure network and the number of PEV drivers on local roads reduces greenhouse gas (GHG) emissions and helps advance local government and public agency efforts toward achieving their GHG emissions reduction goals and reduce petroleum costs.

Why plan at all?

Regional EVSE planning began as a component of the EV Project to address:

- Near-term needs
 - Identify method to best site PEV chargers
 - Use visual tools through GIS mapping
 - Plan for 1,500 publically accessible chargers
- Long-term goals
 - Select [public] sites with the most regional benefit
 - Reduce driver “range anxiety”
 - Develop interregional network
 - Enhance future siting capabilities

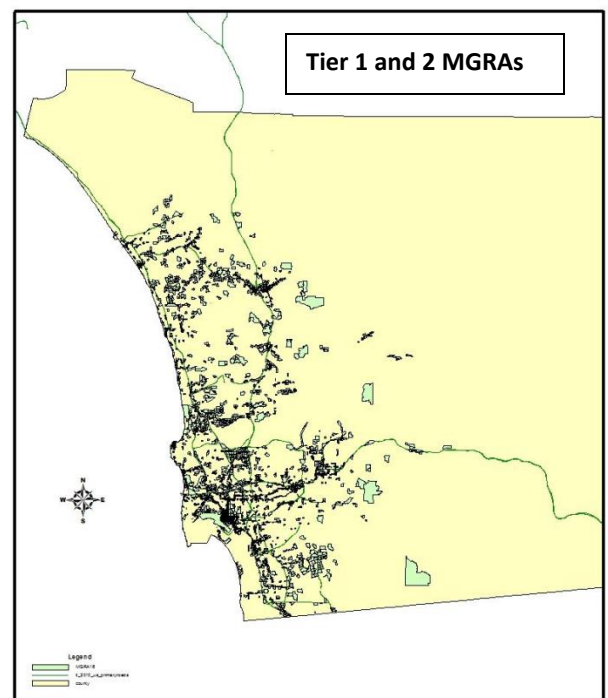
What has been done?

San Diego EV Project Stakeholder Advisory Committee (ESAC)

- Participants: Local governments and public agencies, nonprofits, universities, utilities, and private businesses.
- Purpose: Provide input to ECOTality on the local context, history, and motivation for EV adoption in the San Diego region. Determine and rate the factors to be using in siting EVSE.
 1. Optimal Level 2 EVSE locations in the San Diego region were defined as those with:
 - High number of users
 - High frequency of vehicle turnover (vehicle stay times of 45 minutes to 3 hours)
 - Significant availability (maximize hours of operation per day and days per week)
 2. All locations assessed against the land use suitability factor.
 3. Weighted factors were applied to the master geographic reference areas (MGRAs) in the San Diego region and normalized to provide a score for each MGRA.
 4. MGRAs were mapped and focus was placed on the highest scoring areas to identify potential locations for Level 2 EVSE. 3,333 MGRAs were targeted.¹

What is the EV Project?

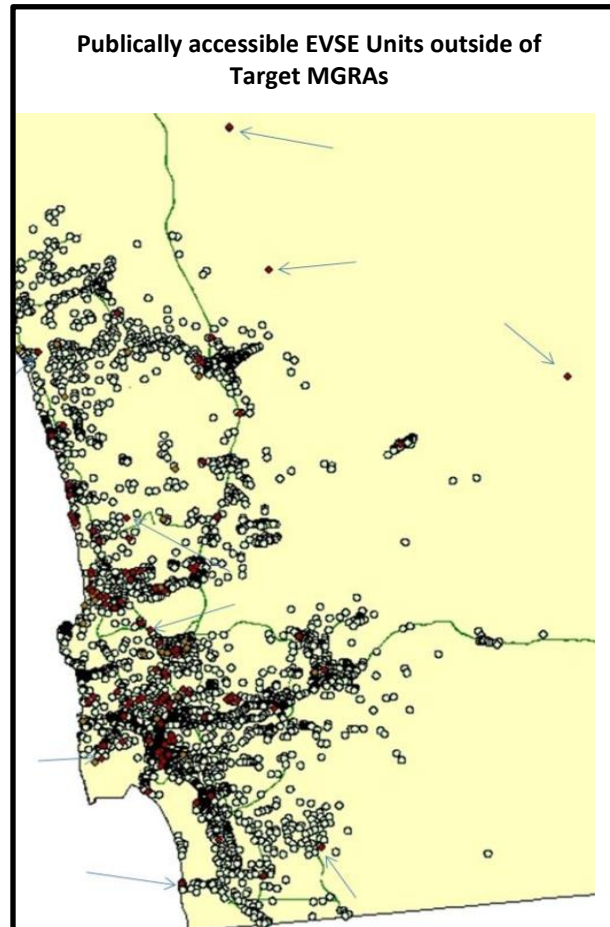
- ECOTality received funding from: US Dept. of Energy and partner matches = \$230m
- Deploy chargers in major cities and metropolitan areas across the US.
- EV Project collects and analyzes data to evaluate EVSE infrastructure.
- Identify lessons learned and establish streamlined deployment.



Plug-in Electric Vehicles Regional Planning for Public Charging in San Diego

EV Project Installations

- Installations¹
 - Began in April 2011
 - By May 2013: 435 non-residential AC Level 2 EVSE units in the San Diego region
Including 321 publicly accessible units at 121 sites and 114 workplace/fleet EVSE units at 39 sites
- Installations vs Plan¹
 - Analysis done for number of units within ¼ mile (walking) of the highest scoring MGRAs.
 - 3,333 targeted MGRAs
 - Several charging units were placed within ¼ mile of more than one MGRA.
 - 1,138 (34%) MGRAs were served by a deployed publicly accessible EVSE.
 - 10 units were installed in areas outside of a targeted MGRA (most close to a MGRA but not within the ¼ mile buffer).
 - 3 units were installed far from the nearest MGRA and served as a means to continue/extend trips to more remote parts of the county.



EV Project Conclusions to Date²

- Public charge events per public EVSE continue to increase
- 74% of all charging events are residential
- 27% of all public charging events are from Car2Go
- 19% of all electricity consumed is from publically accessible Level 2 and DC Fast charge events

¹The EV Project: *Lessons Learned – The EV MICRO-CLIMATE Deployment Process in San Diego*
<http://www.theevproject.com/cms-assets/documents/112390-451046.mcproc-sd.pdf>

²The EV Project: *Q2 2013 Quarterly Report*
<http://www.theevproject.com/cms-assets/documents/127233-901153.q2-2013-rpt.pdf>

Resources for Fleet Managers in San Diego

Government fleet managers have many reasons for integrating plug-in electric vehicles (PEVs) into their fleets. Rising petroleum costs and increased operating costs are straining local government budgets. Several local, state, and federal policies require government agencies and their fleets to reduce greenhouse gas (GHG) emissions. PEVs allow fleet managers to dramatically cut petroleum use and support the public agency’s GHG emissions reduction goals, while lowering the total cost of ownership compared to similar gasoline-fueled vehicles.

PEVs in Local Public Agency Fleets

Cleaner fleets can play a sizeable role in meeting local and state GHG emissions reductions goals. Local agency fleets that have successfully adopted PEVs include:

- Port of San Diego:
<http://www.portofsandiego.org/environment/1520-nissan-electric-car-debuts-in-san-diego.html>.
- University of California, San Diego:
<http://sustainability.ucsd.edu/initiatives/transportation-alternatives.html>.

Benefits of PEVs
Reduced petroleum use, GHG emissions, and operating costs
Government incentives
Reduced dependence on imported oil

Vehicle Incentives and Rebates

- Local governments and public agencies can take advantage of PEV rebates offered by the Clean Vehicle Rebate Project for up to 20 vehicles per year.¹
- The California Hybrid Truck and Bus Voucher Incentive Program (HVIP) is available to public entities purchasing a hybrid or electric truck or bus. Find out more at:<http://www.californiahvip.org/>.

Choosing the Right PEV

Choosing the right PEV for your fleet requires a thorough understanding of current vehicle use.

- Fleet data logs can help determine which fleet vehicles can be replaced by PEVs.
- Fleet vehicles that travel less than 100 miles per day can be replaced with battery electric vehicles (BEVs; 100% electric).
- Fleet vehicles that need extended range can be replaced with plug-in hybrid electric vehicles (PHEVs).
- The US Department of Energy maintains a website of currently available PEVs, found at http://www.afdc.energy.gov/vehicles/electric_availability.html.

Charging PEVs at a Fleet Facility

An important consideration when planning for PEVs is the need for charging equipment, known as electric vehicle supply equipment (EVSE). San Diego Gas & Electric (SDG&E) can help plan for fleet charging. Learn more at: <http://www.sdge.com/clean-energy/business/fleet>.

- SDG&E will help fleet managers understand their historic electricity use (demand and timing) to determine the most cost effective plan for charging. Commercial customers will receive information on their facility’s electrical capacity for charging.
- Fleet managers must determine the number, location, and types of EVSEs for their PEVs. The different levels of charging (Level 1:120-volt, Level 2: 240-volt) offer different charging speeds and have different upfront and operating costs.
- Placing charging infrastructure near electrical utility equipment can reduce installation costs.

¹ <https://energycenter.org/programs/clean-vehicle-rebate-project>

Resources for Fleet Managers in San Diego

Considerations for Fleet Managers

- Collect drive cycle data to understand fleet needs and which PEV would best meet those needs.
- Determine which fleet vehicles are optimal for replacement by PEVs.
- Consider future PEV fleet size and EVSE siting/needs when installing charging infrastructure.
- Inform drivers on ways to maximize fuel efficiency/battery life (reduce speeding, use of GPS route planning).

Resources

California Energy Commission: Resources for fleet managers interested in upgrading to a clean vehicle fleet can be found at: <http://www.energy.ca.gov/drive/upgrade/fleets.html>.

California Air Resources Board: Resources for incentives, grants, and funding for fleet managers interested in greening their fleet can be found at: http://www.driveclean.ca.gov/pev/Resources_For_Fleets.php

US Department of Energy Clean Cities: A Plug-In Electric Vehicle Handbook for Fleet Managers is available online at: http://www.afdc.energy.gov/pdfs/pev_handbook.pdf.

Idaho National Laboratory Report: A brief report comparing energy costs per mile for electric and gasoline-fueled vehicles by the Idaho National Laboratory is found at: <http://avt.inel.gov/pdf/fsev/costs.pdf>.

US Department of Energy: The DOE's tool, eGallon, calculates fuel savings by using electricity instead of gasoline. Try it out at: <http://energy.gov/articles/egallon-how-much-cheaper-it-drive-electricity>.

San Diego Regional Electric Vehicle and Infrastructure Readiness Plan

Preparing the San Diego Region for Plug-in Electric Vehicles (PEVs)

Adopted January 2014

Compiled by the San Diego Association of Governments and the California Center for Sustainable Energy (CCSE)

DRAFT

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Introduction

Accounting for about a quarter of all plug-electric vehicle (PEVs) sales in the nation, California has been regarded as a leader in the deployment of PEVs. San Diego is no exception; the region represents about 20% of the California PEV owners. As more San Diegans purchase PEVs, a robust infrastructure network will be needed to support local drivers. To support a growing PEV market, barriers must be removed that inhibit the purchase of PEVs and the installation of electric vehicle supply equipment (EVSE).

<Insert actions that will enable local government to understand PEV barriers and PEV planning topics. Also address lessons learned from the EV Project and reasons for the plan>

Background

Provide a background on previous PEV planning efforts and key stakeholders. Describe the establishment and funding for REVI. **Add illustration of EV activity to date (insert this information into the timeline illustration later)

State and Regional PEV trends

Describe the PEV market challenges in the early 1990s and the reemergence of PEVs in 2010. Display pictures of popular EVs from the 1990s and today.

Why use this Plan

This section will describe the role of local government in EVSE deployment. This document is intended to help planners address infrastructure needs and policy changes to support the greater adoption of PEVs in the San Diego region.

The San Diego Regional PEV Readiness Plan provides the following best practices and tools:

<Insert a table highlighting appropriate best practices and tools by chapter (with corresponding links) and brief description>

The San Diego Regional Electric Vehicle Infrastructure (REVI) Working Group

Purpose

The Regional Electric Vehicle Infrastructure working group (REVI) was formed as a collaboration of local governments, public agencies, utilities, industry and the nonprofit sector. This group was made possible through a grant funded by the California Energy Commission (CEC), which was awarded to SANDAG with a subcontract with CCSE. The purpose of REVI was to identify, reduce and resolve barriers to the widespread deployment of private and public PEV charging stations in the region.

<Insert barriers table>

Stakeholder Engagement Process

The REVI held meetings from March 2012 to December 2013. During each meeting, REVI members discussed market barriers, which were then classified into three key topic areas: permitting, regional planning for public EVSE siting and utility solutions. REVI members provided coordination and outreach to communicate best practices to jurisdictions and multiple stakeholders in the region.

PEV Adoption in Region

This section will highlight the changes in EVSE and PEV deployment in the region from pre-REVI to the conclusion of REVI. Maps will display EVSE adoption changes during the three periods below.

January 2012 (Pre-EV Project)

January 2013

January 2014 <insert a visual chronology here>

Plug-in & Get Ready

A website has been developed as a component of the CEC grant, to facilitate and coordinate the rapid adoption of electric vehicles and associated charging equipment.

The website features PEV resources for consumers, local governments, electrical contractors, and businesses. Best practice fact sheets are currently available on the website. *Plug-in & Get Ready* also includes past REVI meeting summaries and agendas.

The Basics of PEVs and Charging Infrastructure

Overview

<Provide an introduction on PEVs and charging infrastructure>

Vehicle Types

Battery electric vehicles

Plug-in hybrid electric vehicles

<Insert a table of PEV models: current and planned for U.S. release in 2013 – source: www.driveclean.ca.gov>

Charging Stations

Level 1

Level 2

DC fast charging

Regional PEV driver charging behavior statistics

<Insert an infographic of San Diego regional PEV owner demographics that include primary charging locations and a table displaying typical dwell times for charging environments, courtesy of the UCLA Luskin Center. Other resources will leverage ECOTality quarterly report on San Diego infrastructure and AFDC electric vehicle station locator map. >

The PEV Landscape

Overview

<Provide an introduction describe the key stakeholders in the PEV-industry. Describe the major players involved in supporting the deployment of PEVs in the region.>

Purchasing a PEV

<Describe the factors consumers consider when purchasing a PEV. Describe the importance of OEM coordination with local planners, policy makers and utilities in order to support infrastructure planning.>

Government role

<Describe how the following entities can provide PEV planning guidance and how their permitting, regulations, etc. affect the level of PEVs and EVSE are in the region. Local governments also influence the marketplace and serve as a resource local residents and businesses interested in PEVs and EVSE>

<Insert a table displaying stakeholders responsible for shaping PEVs policies and providing PEV and EVSE incentives>
<Insert a link to the Lack of Public Knowledge PEV Fact Sheet>

Utility role

<Describe the SDG&E's role in the regional PEV ecosystem, from PEV drivers to business owners, and, most importantly, local governments>

Charging at single-family homes

<Describe the single-family EVSE installation experience for PEV chargers. Describe the key stakeholders and their role (e.g. SDG&E and the importance of time-of-use rates to mitigate on-peak charging)>

<Insert a link to the CCSE "Your Guide to Plug-in and Get Ready" residential EVSE installation guideline>

Charging at multi-unit dwellings

<Describe the challenges and opportunities to expand EVSE adoption at MUDs. Describe SDG&E MUD workshop and case study>
<Insert a link to the MUD chapter and SDG&E collateral>

Charging at workplaces, retail and public locations

<Describe the opportunities for greater workplace charging in the region and how charging at retail and public locations enhance the PEV driver experience>

<Insert a link to the chapter on workplace charging and public agency installations>

Locations of public charging stations in the San Diego region

<Insert map of existing publicly-accessible charging stations that planners can use to compare with the locations of employment centers, retail centers and trip attractors for daytime PEV drivers>

<Insert a list of "find a charging station" resources. A brief description and link will be provided for the U.S. Department of Energy's Alternative Fuels Data Center, Blink, ChargePoint, and user-generated sites, such as Recargo and PlugShare>

Regional Barriers to EVSE Deployment & Key Recommendations

<Describe the selection process of San Diego REVI barriers. Insert the REVI Barriers flow chart>
<Provide an overview of subsequent barriers and challenges that will be covered within this section>

Regional Planning for Public EVSE

Overview

<Provide an introduction on regional planning efforts, where things are to date, and opportunities to expand EVSE network in the San Diego region. Provide information about challenges that had existed in the 1990s. Discuss lessons learned from the EV Project planning.>

<Insert and describe the pyramid of PEV charging priorities (sources: Dr. Mary Beth Stanek, Director, Environment and Energy Policy and Commercialization, General Motors Company, 2001 and EPRI Charging Triangle)>

Classifying local land use statistics for PEVs

<Provide a bulleted list of priorities used to maximize and develop charging opportunities for PEV drivers. This would include a description of the land uses associated with preferred PEV parking destinations>

<Adopt and insert the BAAQMD's table on "Example of Charging Type based on Purpose" which displays typical venues for charging, available charging times and the primary and secondary charging method, combining it with elements of SANDAG's table on typical user profiles. New table should have columns: Charging Equipment, Typical User Profile, Typical Venue, Available Charging Time.>

<Discuss workplace charging and describe the fact that it is the second most visited site outside of the home where people have potential to charge for longer periods of time>

Land use/parking analysis for EVSE

<Adopt the Luskin Center's steps in "PEV land use assessment" and describe the assumptions used in identifying potential parking availability. For example, assumptions may include counting MUDs in terms of individual units, not individual buildings; assume there is a parking space for every employee at a workplace.>

PEVs in government fleets

<Describe the opportunities and process to expand PEVs in local government fleets>

<Insert the PEVs in government fleets fact sheet>

Support for existing strategies

<Describe integrating PEV readiness may further local agency and government climate planning and sustainability goals.>

Public electric vehicle charging stations

<Provide information on the challenges surrounding public EVSE installations. ID need for acceptable procurement language and the importance of consistent language for RFPs to get EVSE installed.>

<Describe the issues of what happens without proper RFP language. Discuss problems vendors and agencies have in terms of liability and insurance requirements, etc.>

<Insert the RFP outline accepted by REVI>

Estimating the future demand for EVSE in the region

Level 1 and Level 2 EVSE

DC fast charging

Permitting for EVSE

Overview

<Provide an introduction on streamlining the permitting process in the San Diego region. From a planning perspective, describe why addressing permitting first is critical and how this prepares jurisdictions to better address other issues, e.g. zoning & parking, commercial/MUD installations, and building code changes>

Permitting EVSE installations at single-family residences

<Describe the issues of SFR permitting (e.g. high permitting costs across the region; use ECOTality presentation for reference)>

Recommendations

<Insert the residential permit and inspection guidelines accepted by REVI>

Charging at multi-unit dwellings

<Describe the importance of MUD planning generally and note specific ways in which the region is a recognized leader in MUD planning>

Planning metrics for MUD charging

<Describe which types of MUDs (e.g. higher density multifamily) could offer the most PEV charging opportunities>

MUD charging opportunities within San Diego jurisdictions

<Describe the potential for MUD charging opportunities by comparing the housing stock of MUD and single-family residential housing units in the region; compare San Diego County jurisdictions by MUD units, single-family units, and employees. Housing units and the number of employees by jurisdiction will be accessed by California Department of Finance statistics>

MUD Installation Process

<Describe complementary materials for MUD owners/occupants that fill information gaps in what SDG&E can't provide under CPUC rules>

<Insert EVSE at MUD fact sheet>

Pricing policies and models for MUD charging

<Describe state-level policies for MUDs and display Senate Bill 880. Display pricing models for cost recovery and financial viability scenarios created by the UCLA Luskin Center>

Recommendations

<Insert recommendations for property managers and building owners that reduce hard and soft costs of MUD installation>

Commercial and public sector charging

<Provide an introduction on the factors involved with public charging, associated costs and the challenges with pricing>

<Describe who is responsible for providing the charging, the costs involved, how to recoup costs>

Benchmarks public-sector and retail charging sites

<Suggest that planners consider evaluation criteria when prioritizing a site (e.g. frequency of visits per week, time cars are parked, cost of electricity (i.e. demand charges), and the opportunity cost of non-PEV parking spaces to the host)>

Cost-effective public locations

<Describe sites that offer the lowest possible costs of charging and maximize locations with longer dwell times (higher chance for Level 1 usage) and the value of regular parking to the site host (opportunity cost of a non-PEV parking space)>

Publicly-owned and retail sites

<Provide examples of public sites which generally have parking longer than two hours (e.g. government offices, transit lot stations locations [i.e. trolley, airport], recreation centers and facilities, faith centers, and clubs); examples of retail sites with more than two hours of parking (e.g. big box retailers, sporting facilities, shopping malls, fitness centers). Source: "How People Use Their Vehicles: Statistics" from the 2009 National Household Travel Survey, Krumm 2009>

Charging at the workplace Overview

<Provide an introduction on the opportunities to expand and support workplace charging in the region>

<Describe stakeholder engagement and factors involved with workplace charging installations>

<Insert recommendations for facilitating commercial and public sector charging>

Workplace charging opportunity

<Describe the importance of encouraging charging opportunities to develop in the workplace.>

<Provide planners and SDG&E with the following tools: absolute number of employees and workplace by jurisdiction; share of employees, largest regional employers and where they are located; number high-tech workplaces by jurisdiction. These numbers

can be sourced from the U.S. Census, Bureau of Labor Statistics, California Employment Development Department, and SANDAG employment information>

San Diego regional non-residential charging study

<Describe and insert the summary of the CCSE non-res EVSE report, value proposition of hosting public charging>

Workplace charging station installation process

<Describe the stakeholder engagement and factors involved with workplace charging installations.>

<Insert the California Plug-in Electric Vehicle Collaborative Workplace Charging Communication Guide, 2012>

<Insert the workplace charging fact sheet>

Recommendations

<Insert recommendations for local planners to facilitating workplace charging for regional employers>

Zoning and parking policies for PEVs

Overview

<Describe how zoning codes can shape certain types of development, including the adoption of EVSE. Describe REVI efforts for addressing accessibility for PEV parking>

Accessibility for PEV parking

<Describe the REVI comments to the OPR accessibility guidelines and the City of San Diego Technical Policy 11-B>

<Insert City of San Diego Technical Policy 11-B>

<Potentially add information about REVI's help by sending a letter to OPR>

Zoning ordinances resources

<Describe and insert zoning ordinances examples of EVSE-friendly language (e.g. City of LA, City of Lancaster)>

<Insert relevant OPR Guidebook info>

PEV Signage

<Describe the California Manual on Uniform Traffic Control Device PEV signage policy. Include high resolution pictures of the adopted regulatory and general directional PEV signs>

Recommendations

<Insert recommendations for facilitating PEV charging through zoning and parking policies.>

Building code changes

Overview

<Describe how building code updates for EVSE are a long-term regional goal and will likely be supplanted by statewide updates to Title 24 and the CALGreen building code>

CALGreen

<Describe the CALGreen voluntary measures that local jurisdictions can adopt for EVSE>

<Insert CALGreen EVSE code language and Title 24 updating process per Ed Pike's presentation>

Building code resources

<Describe and insert EVSE-friendly building code examples (e.g. City of LA, Temecula, Boulder County, Colorado)>

Recommendations

<Insert recommendations for facilitating PEV charging through updating local building codes with EVSE requirements>

Utility Solutions

Overview

<Provide an introduction on minimizing grid impacts due to PEV charging (e.g. PEV neighborhood clustering and support of time-of-use rate adoption among local PEV drivers)><Describe the long-term challenges with high levels of PEV adoption such as clustering, congestion and capacity expansion>

Utility notification protocol

<Describe the benefits of utility documentation of EVSE locations within SDG&E territory>
<Discuss the need for local government to work with utilities in order to ensure that their constituents receive reliable service>

SDG&E Time-of-use rates

<Describe the financial benefits of TOU rates and how to support SDG&E outreach efforts>
<Describe commercial TOU rates and CPUC policies for commercial rates>

<Describe the costs and experience of installing a second meter (i.e. sometimes more than \$2,000 according to the SCAG PEV readiness plan, compiling SDGE territory figures to compare). Within SDG&E territory, the installation of a second meter is at the customer's expense>

Minimizing grid impacts

<Describe the opportunities for smart grid technologies, such as battery storage and other technologies that monitor and control charge events. Also provide information on renewable energy options for PEV owners>

PEV Training, Education & Outreach

Overview

<Provide an introduction on the training and education opportunities for PEV-related stakeholders in the San Diego region>

PEV training for local government staff

<Describe the PEV readiness workshop in San Diego (June 2012) and the PEV Community Readiness training session (January 2013), include EVTIP training and other training resources>

<Insert training for municipal staff and fact sheet>

Training opportunities for local contractors

<Describe the EVITP training for local EVSE installers and provide a list of the current educational resources available, which include NECA in San Diego, and ATTE Miramar>

<Insert the training for electrical contractor's fact sheet>

First responders

<Describe the regional training programs for first responders and emergency and safety officials, which include online courses by National Alternative Fuels Training Consortium and National Fire Protection Association, and ATTE Miramar.>

Local PEV dealer outreach

<Describe the local efforts to increase training and education opportunities for local PEV dealers>
<Insert San Diego Regional Clean Cities PEV dealership outreach flier>

The Road Ahead

Overview

<Describe the importance to provide continued planning support for regional stakeholders by addressing outstanding gaps and emerging trends and future needs>

Increased PEV presence

<Describe a plan to attract PEV manufacturing, production, infrastructure, and services of PEV development in the region.>

Anticipating future PEV needs

<Develop a 1-2 year, 3-5 year, and 5-10 year plan for future PEV needs>

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