

# *San Joaquin Valley Plug-in Electric Vehicle Coordinating Council*

*Meeting #4  
May 2, 2013*



# San Joaquin Valley Plug-in Electric Vehicle Coordinating Council

*Meeting #4 May 2, 2013 | 10:00 a.m. – 12:00 p.m.*

Announcements and Public Comments

All

Summary of April 4, 2013 Meeting

Tyler Petersen, CCSE

- ✓ Climate Action Plan, Sustainability Action Plan & Adaptation Plan follow up
- ✓ Lack of Public Knowledge of PEV and EVSE

Commercial Permitting

SJV PEVCC Members & Tyler Petersen, CCSE

- ✓ Review ZEV Readiness Guidebook: “Retail and Public Sector Charging” document

Regional PEV Readiness Plan Development

SJV PEVCC Members & Tyler Petersen, CCSE

- ✓ Workplace Charging
- ✓ Updating Building Codes for EVSE

Barrier topics for June 6, 2013 Meeting

SJV PEVCC Members

# Announcements & Public Comments

# SJV PEVCC Meeting Summaries

✓ Download PDF at [www.energycenter.org/pluginready](http://www.energycenter.org/pluginready)

## Includes:

- ✓ Detailed meeting notes
- ✓ Attendee list
- ✓ Links to resources

# Climate Action Plan, Sustainability Action Plan & Adaption Plan

## PLUG-IN ELECTRIC VEHICLE (PEV) BEST PRACTICES

### San Joaquin Valley Local Government Action Plans: PEV Policies & Language

Compiled by the California Center for Sustainable Energy (CCSE)

#### Climate Action Plans

*City of Oakdale* (<http://www.ci.oakdale.ca.us/gp/Links/pdfs/oakdale-cap-20120720.pdf>)

**Climate Action Plan (2011)** is committed to developing a fuel-efficient vehicle replacement policy by 2020.

- *Strategy TLU.3.1: Reduce Traffic Speeds and Increase Safety in Sensitive Areas.*
  - This includes lowering the speed limit to 35mph in many streets to allow for the expanded use of Neighborhood Electric Vehicles. (p. 5-21)
- *Strategy TLU.4.1: Implement Preferred Parking Policy.*
  - The City wants to use parking policy to discourage driving and/or encourage the use of more fuel-efficient vehicles. (p. 5-22)
- *General Plan Policy EV-2.8*
  - Reduce emissions associated with transport of goods and services to municipal operations.

*City of Merced*

**Climate Action Plan (2011)** "Build a Green Fleet" program which supports converting city fleet with cleaner vehicles

*Tulare County*

**Climate Action Plan (2010, draft)** is establishing targets for transportation-related greenhouse gas emissions for regions throughout California and pursuing such policies in conjunction with SB 375.

- Convert fleet vehicles by replacing diesel engines with electric motors. (p. 52)
- Building Energy Efficiency/Green Building Design strategy. (p. 11) [could include EVSE "pre-wiring" language]
- Under "Needing Additional Information", provide the necessary facilities and infrastructure to encourage the use of low or zero-emission vehicles. (p. 260)





# Lack of Public Knowledge of PEV and EVSE

- ✓ Education and outreach presentation update



# Permitting for Commercial EVSE

## ZEV Readiness Guidebook: “Retail and Public Sector Charging” document

- ✓ Recommendations
- ✓ Goal: add or modify recommendations with regional perspective

### **Retail and Public Sector Charging**

**Introduction:** Most PEV charging occurs at home, followed by charging at the workplace. However, the proliferation of plug-in hybrid electric vehicles (PHEVs) has increased the demand for more sporadic charging outside of home or work. To maximize their electric miles driven, many PHEV drivers find it valuable to charge when visiting retail and government-owned destinations. Public charging is available in several locations, including: public parking lots, retail chains such as Kohl’s and Walgreens, tourist destinations, entertainment venues, and airports.

**Background:** The cost to install EV charging infrastructure for retail or public sector charging varies widely, depending on a multitude of factors. These factors include: charging level, type of charger, facility characteristics, desired location of charging stalls at the property, and installation cost. Charger hardware cost will largely be dictated by choices of features and preference for design or brand, similar to the range of pricing for automobiles and other consumer technology.

A much wider range of cost will be attributable to the cost of installing the hardware. Charging stations that can be installed near to an electrical panel with existing space and capacity will cost the least. Those that require long conduit runs, trenching, and panel upgrades will cost much more.

All commercial electric vehicle charging station installations will require a permit. In general, only a building or electrical permit will be required. However, if extensive landscape, parking lot, electrical or structural alterations are involved, the services of an engineer and/or architect, as well as electrical design consultant, may be necessary. In these cases, additional permits may be required covering the appropriate project elements.

#### **Recommended Actions:**

- **Permitting agencies should be available to answer questions about retail and public sector charging early in the planning process** to help ensure the timely installation of chargers.
- **Permitting agencies should create a similar or duplicate permitting applicant for workplace and retail charging installations** since both types of charging impacts have overlapping similarities.
- **Local Governments can provide information about payment and financing options for retail charging.** Some of these options include:
  - **Free, or Free with Restrictions:** This system may be beneficial for short-term

# Recommendations for Permitting Commercial EVSE Sites

- ✓ Permitting agencies should create similar or duplicate permitting applications for workplace and retail charging installations
- ✓ Local Governments can provide information about payment and financing options for retail charging



# Recommendations for Permitting Commercial EVSE Sites

## ✓ Some of these options include:

- ✓ Free, or Free with Restrictions
- ✓ Advertising Supported
- ✓ Adopt a Charger
- ✓ Point of Sale Billing
- ✓ Membership or Subscription Plan
- ✓ Fee Bundling
- ✓ Valet Charging
- ✓ EV Car Sharing

# Regional PEV Readiness Plan Development



# Workplace Charging

## ZEV Readiness Guidebook: “Workplace Charging” document

- ✓ Recommendations
- ✓ Goal: add or modify recommendations with regional perspective

### **Workplace Charging**

**Introduction:** Workplaces present a significant, and largely untapped, opportunity for PEV charging. After residences, they are the single most important environment for electric refueling. Vehicles are generally parked at workplaces for several hours every weekday, making it possible for them to completely recharge before the commute home and dramatically increasing electric miles traveled for PHEVs. The ability to charge at work may also encourage PEV adoption by those for whom residential charging is cost-prohibitive or logistically difficult, particularly residents of multi-unit dwellings.

**Background:** Implementing EV workplace charging is easiest where a business/organization is in complete control of their entire campus. With singular control of the key pieces of real estate parking area, building, and electrical service it is a straightforward process to establish an EV charging opportunity for employees. The situation can easily become much more complicated, especially in dense urban situations. For employers or employees at companies with a more complex building ownership/parking arrangement at their site, a modified approach will be needed.

The vehicles' lengthy stays in parking lots allow them to recharge using slower, lower-voltage, less expensive Level 1 charging from common, often available outlets. But the ability to charge several cars at once using multiple cords on Level 2 equipment would also make faster charging a potentially feasible option.

The permitting process for workplace charging is one of many variables that employers may have to consider when installing workplace charging. Some of the other considerations include:

- Cost (installation, maintenance, operation, etc.)
- Developing an internal policy regarding charging vehicles (i.e., determining protocol for plug-sharing among employees)
- Liability issues
- Choosing the appropriate EVSE, vendor, and electrical contractor

**Case Study:** At Google's Mountain View, CA, headquarters you'll find perhaps the world's largest workplace charging program. Google's parking lot features Level 2 charging stations managed by the [ChargePoint Network](#) as well as Level 1 charging spots. The charging stations are used by employees and by the company's growing car sharing program for their employees called [GFleet](#). Google has a goal to make 5 percent of its campus parking EV-ready. Google does not charge its employees or guests to use these charging stations. [Learn more.](#)

# Workplace Charging Recommendations

- ✓ **Contact pertinent permitting agencies and obtain all pertinent building and use permits**
  - ✓ Identify special local fire, construction, environmental, or building requirements
  - ✓ Obtain all applications
  - ✓ Determine additional permitting costs
  - ✓ Determine site plan requirements
  - ✓ Hire the prime contractor and verify contractor subcontractor credentials.

# Workplace Charging Recommendations

- ✓ Review traffic, pedestrian flow, parking requirements, and applicable ADA compliance issues
- ✓ Local governments should provide an easy-to-fill out application for workplace permitting



# Updating Building Codes for EVSE

- ✓ Title 24 updates for EVSE
- ✓ San Joaquin Valley PEV Readiness Assessment  
Recommendations

# Building Code Recommendations

- ✓ **Modify Existing Use/Discretionary Permitting Processes to Include EVSE**
  - ✓ Near-term goal
  - ✓ Identified as a greenhouse gas mitigation strategy per CEQA
  - ✓ Leverage existing major use and discretionary permitting processes with following language:

# Building Code Recommendations

- ✓ For NONRESIDENTIAL AND RESIDENTIAL PROJECTS, include a space dedicated in the electrical panel for a circuit for plug-in electric vehicle charging; and a label stating “PEV CAPABLE” shall be posted in a conspicuous place at the service panel or subpanel and next to the raceway termination point



# Building Code Recommendations

- ✓ For NONRESIDENTIAL PROJECTS, ensure each parking space required in the table below, provide panel capacity and dedicated conduit for one 208/240 V 40 amp circuit terminating within 5 feet of the midline of each parking space.

Total Number of Parking Spaces	Number of Required PEV Spaces
1 – 50	1
51 – 200	2
201 and over	4



# Building Code Recommendations

- ✓ For RESIDENTIAL PROJECTS (e.g. planned subdivisions), provide a minimum number of 208/240 V 40 amp, grounded AC outlet(s), in both single-family and multifamily unit dwellings. The outlet(s) shall be located in the parking area and have a minimum of the following:
  - ✓ **Single-Family Dwellings:** 1 per unit
  - ✓ **Multifamily Unit Dwellings:** 5% of parking capacity



# Building Code Recommendations

## ✓ **Modify Existing Use/Discretionary Permitting Processes to Include EVSE**

### ✓ Benefits:

- ✓ Allows jurisdictions to promote EVSE through existing methods.
- ✓ Provides another option for developers to meet the additional requirements such as under the CEQA.
- ✓ Prewiring during the construction of a building significantly reduces the cost of EVSE installation

# Building Code Recommendations

- ✓ **Adopt/Update Prewiring for EVSE in Residential and Nonresidential New Construction**
  - ✓ Long-term goal
  - ✓ San Joaquin Valley jurisdictions adopt currently voluntary CALGreen building code language (A5.106.5.3.1) as mandatory in ALL new nonresidential and residential construction
  - ✓ Same language as the previous recommendation but would update the AHJ building code

# Barrier Topics for June 6th Meeting

- ✓ EVSE at Multi Unit Dwellings (MUDs)
- ✓ EVSE Installations
  - ✓ Residential
  - ✓ Commercial
  - ✓ MUDs
  - ✓ Workplaces
- ✓ EVSE Inspection Checklists

Agenda Item XX

Progress on Regional PEV Barriers		
Barriers/Solutions Being Addressed by Statewide Department of Energy PEV Project and SJVPEVCC		
Barrier	Progress on Solutions – Preparation of Guidance Materials	Priority/Action Items
<b>1. Permitting/Inspection</b> Lack of streamlined permitting and inspection processes and inconsistent (high) costs across jurisdictions.	<ul style="list-style-type: none"> <li>• Barrier identified in San Joaquin Valley Plug-In Electric Vehicle (SJVPEV) Readiness Plan (pg. 25 - 32)</li> <li>• To be updated as project develops</li> </ul>	<ul style="list-style-type: none"> <li>• N/A</li> </ul>
<b>2. Building Codes</b> Lack of standard building codes that accommodate charging infrastructure or dedicate circuits for charging infrastructure in new construction and major renovations.	<ul style="list-style-type: none"> <li>• Barrier identified in SJVPEV Readiness Plan (pg. 33 – 38)</li> <li>• To be updated as project develops</li> </ul>	<ul style="list-style-type: none"> <li>• N/A</li> </ul>
<b>3. Zoning and Parking Rules</b> Lack of standard regional ordinances that facilitate the installation and access to publicly available charging infrastructure.	<ul style="list-style-type: none"> <li>• Barrier identified in SJVPEV Readiness Plan (pg. 19 – 24)</li> <li>• To be updated as project develops</li> </ul>	<ul style="list-style-type: none"> <li>• N/A</li> </ul>
<b>4. Training and Education for Municipal Staff and Electrical Contractors</b> Lack of knowledge about PEVs and EVSE	<ul style="list-style-type: none"> <li>• Barrier identified in SJVPEV Readiness Plan (pg. 39 – 42)</li> <li>• To be updated as project develops</li> </ul>	<ul style="list-style-type: none"> <li>• N/A</li> </ul>
<b>5. Lack of Public Knowledge of PEV and EVSE</b> Municipal outreach to Local Residents and Businesses	<ul style="list-style-type: none"> <li>• Barrier identified in SJVPEV Readiness Plan (pg. 43 – 47)</li> <li>• To be updated as project develops</li> </ul>	<ul style="list-style-type: none"> <li>• N/A</li> </ul>

# SJV PEV Readiness Plan Key Deliverables

Task Name & Product	Due Date
Draft PEV Readiness Plan	11/8/2013
Draft Public Workshop Materials	12/13/2013
Final PEV Readiness Plan	2/3/2014
Final Public Workshop Materials	3/3/2014

# Thank You!

## Contact Information:

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