

REGIONAL PLUG-IN ELECTRIC VEHICLE (PEV) READINESS GRANT

Refuel: San Diego Regional Alternative Fuel Coordinating Council
July 15, 2015

■ California State Goals for Zero-Emission Vehicles (ZEV)

By 2025, 15 percent of new car sales will be ZEVs

- Currently, 5 percent of new car sales are ZEVs

By 2025, 1.5 million ZEVs will be operating in CA

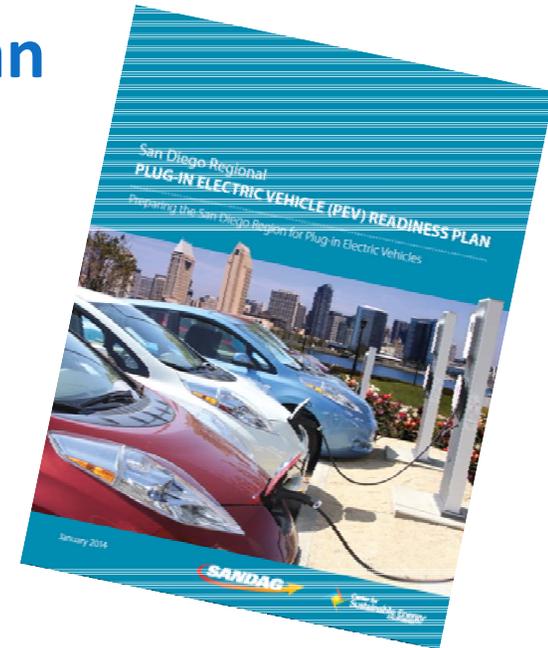
- Currently, California has more than 130,000 ZEVs, which accounts for 45 percent of national sales



■ Past/Current Planning Efforts

San Diego Regional PEV Readiness Plan

- San Diego Regional Electric Vehicle Infrastructure Working Group
- Regional best practices and resources for reducing barriers



Refuel: Alternative Fuel Coordinating Council

- Readiness plan and toolkits for all alternative fuel types:
 - Electricity
 - Natural gas
 - Propane
 - Biofuels
 - Hydrogen



Other Alternative Fuel Efforts

Southern California Advanced Transportation Center

- CA Energy Commission funded
- CSE serves as San Diego location
- Industry resource for Southern California
- Support for grant collaboration, hosting events, workforce development programs, and technical assistance



San Diego Regional Clean Cities Coalition

- US Department of Energy program
- Public and private sector stakeholders
- Planning, education and outreach to support petroleum reduction



■ New PEV Readiness Implementation Grant

- Partnership with Center for Sustainable Energy
- Goals:
 - Implement PEV Readiness Plan recommendations
 - Streamline permitting
 - Improve installation process
 - Assist in siting Electric Vehicle Charging Stations (EVCS)
 - Increase PEV awareness
- 2-year, \$300,000 grant



■ Permitting and Installation

- Resources:
 - Permitting and Installation Best Practices Reports
 - Permitting Correction List
 - Installation Checklist
 - Language for city websites
- Subregional workshops
- Late 2015-early 2016

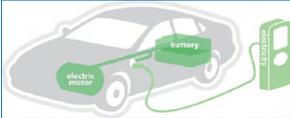
Plug-in Electric Vehicles

Plug-in Electric Vehicles & Charging: Getting Started

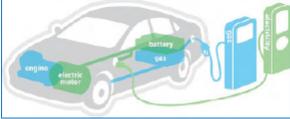
California is leading the nation in plug-in electric vehicle (PEV) adoption, and about 20% of PEVs in California are in the San Diego region. Interested in learning more about these new vehicles on our roads and highways? Here are some answers to your questions about the basics of PEVs, benefits of PEVs, charging options, and available incentives.

What is a plug-in electric vehicle?
A plug-in electric vehicle (PEV) is the generic term for cars that operate, fully or partially, on battery power and that are charged from the electricity grid. There are two main types of PEVs: battery electric vehicles and plug-in hybrid electric vehicles.

Battery Electric Vehicle (BEV) - Runs on electricity stored in batteries and has an electric motor rather than an internal combustion engine.



Plug-in Hybrid Electric Vehicle (PHEV) - Plugs into the grid and operates on electricity as well as an internal combustion engine.



What are all the options?
There are currently more than 16 different PEV models on the market, offered by a variety of manufacturers. Check out an EV buying guide at <http://www.driveclean.ca.gov>.

How far can I drive?
Battery electric vehicles can generally go 60 – 120 miles on a full charge, which is plenty of range for most people (the average Californian travels less than 30 miles a day). If more range flexibility is needed, a plug-in hybrid might be a better choice. They can generally run on battery alone for 10 – 40 miles, and then continue for up to 400 miles as a gasoline-electric hybrid.

Why should I drive a PEV?

- Help to reduce emissions and improve air quality
- Lower fueling costs
- Save money and charge your vehicle overnight with SDG&E's time-of-use rates. Learn more at <http://www.sdge.com/evrates>.
- Lower maintenance costs
- No more oil changes, fewer tune-ups

How do I charge?
Most PEV drivers will do the majority of their charging at home, but the availability of public charging stations is growing. Public stations offer drivers more charging options. A list of public charging locations can be found at <http://www.afdc.energy.gov/afdc/locator/stations>.

How long does it take to charge?
Charging times depend on three primary factors: the size of the battery, the onboard vehicle charger, and the type of charging equipment. The onboard charger is located in the vehicle and determines the amount of power that can enter the vehicle from the grid. Generally, BEVs have a larger battery compared to PHEVs. Three types of charging equipment are described in the table below:

Type of Charger	Miles of Range for 1 hour of charge	Where to charge?
Level 1 (120 volt)	3 to 4	Standard three-pronged outlet
Level 2 (240 volt)	8 to 20	At-home or public charging station
DC Fast Charger	50 to 60	Few public DC Fast Chargers

Are there incentives for buying or leasing a PEV?
For a limited time, rebates and tax breaks are available for PEV purchasers and lessees. Incentives include a state rebate of up to \$2,500, a federal tax credit of up to \$7,500, and HOV lane access.

- Find incentives available in your area at <http://driveclean.ca.gov/pev/incentives.php>.

Tax credits are also available for charging stations and allow consumers to claim up to 30% of the cost of hardware and installation, find out more at <http://www.afdc.energy.gov/laws/law/US/10513>.



■ Technical Assistance: EV Expert

- “EV Expert” available to:
 - Local government staff
 - Contractors
 - Potential EVCS hosts
- Get questions answered:
 - How to evaluate sites for EV charging installation?
 - What resources to provide to the public about the EV charging permitting process?
- Remote and in-person consultations



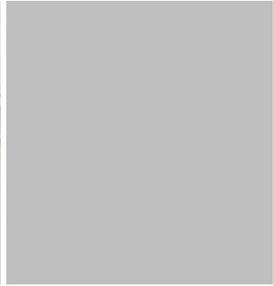
■ PEV Awareness Activities

- Promote resources for multi-family installations
- Presentations to workplaces on benefits of providing charging
- Dealership outreach and education



■ Next Steps/Discussion

- Reviewing experiences since REVI and PEV Readiness Plan
 - Common permitting/inspection issues
 - Typical installation barriers
- Identifying new examples of best practices
 - In the San Diego region
 - Outside the San Diego region
- Engaging Refuel members/process



■ THANK YOU!

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