



# **Clean Vehicle Rebate Project**

Fiscal Year 2012-2013 Final Report

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California Environmental Protection Agency

# O Air Resources Board

Prepared by



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# Abstract

The Clean Vehicle Rebate Project (CVRP) is one of the California Air Resources Board's voluntary incentive programs authorized under the California Alternative and Renewable Fuel, Vehicle Technology, Clean Air and Carbon Reduction Act of 2007 (Assembly Bill118; Núñez, Chapter 750, Statutes of 2007). Through the Air Quality Improvement Program, the California Air Resources Board invests in clean vehicle and equipment projects that reduce criteria air pollutants and toxic emissions, often with concurrent climate change benefits. Funding for these incentives is provided through a dedicated revenue stream of smog abatement, vehicle and vessel registration and equipment identification plate fees. Assembly Bill 118 funding was recently extended through 2023.

The CVRP is intended to accelerate on-road deployment of zero emission passenger vehicles and plug-in hybrid electric vehicles and encourage clean technology innovation. In addition to providing rebates for the purchase or lease of new, eligible vehicles, the CVRP provides clean vehicle market information for California consumers and stakeholders. The project's scope of work included the creation of a website with program information and online application capabilities, statewide technology outreach and education and various other market facilitation activities.

The CVRP distributed \$34,431,396 in Fiscal Year 2012-2013 rebate funds to owners and lessees of 17,422 eligible vehicles in California. Throughout the first four fiscal years of the project, 27,462 rebates have been issued, totaling \$60,402,098 in rebate funds.



# I. Introduction

On December 1, 2009, the Air Resources Board (ARB) awarded the California Center for Sustainable Energy (CCSE) a grant to administer the Clean Vehicle Rebate Project (CVRP), a statewide clean vehicle market facilitation program. Through a competitive grant process, ARB selected CCSE to administer the program in each following fiscal year, including Fiscal Year (FY) 2012-2013.

At the onset of the program, incentives included rebates of up to \$1,500 for zero-emission motorcycles (ZEMs) and neighborhood electric vehicles (NEVs), \$5,000 for zero-emission vehicles (ZEVs) and up to \$20,000 for commercial zero-emission vehicles (CZEVs). In response to growing demand, in FY 2011-2012, ARB reduced the maximum rebate amounts to \$900 for NEVs and ZEMs and up to \$2,500 for ZEVs. CZEVs were removed from the program and are now included in the ARB's Hybrid and Zero-Emission Truck and Bus Voucher Incentive Project. A new vehicle category, the plug-in hybrid electric vehicle (PHEV), was added in FY 2011-2012 after commercial release of the vehicles. PHEVs now receive a \$1,500 rebate. In this report, ZEVs and PHEVs are collectively referred to as plug-in electric vehicles (PEVs). Rebate-eligible applicants include individuals, businesses, public agencies and nonprofit organizations. Consumer requirements are provided in the online applications documents, and included in the hardcopy application. These requirements and other program guidelines are updated at least annually in the CVRP Implementation Manual. All program documents are available on the CVRP webpage at <u>energycenter.org/cvrp</u>.

The FY 2010-2011 CVRP grant included funding from both the ARB and the California Energy Commission (Energy Commission). The ARB allocated \$4,692,923 toward vehicle rebates and \$307,707 for administrative costs. The Energy Commission funding, \$1,877,000 in vehicle rebates and \$123,000 for administrative costs, was reserved for rebates of light-duty ZEVs capable of freeway operation and certified for four or more passengers. In FY 2011-2012, the ARB allocated \$15 million in total CVRP funding, \$14,507,537 of which was distributed as vehicle rebates with the remainder reserved for program administrative costs.

In FY 2012-2013, the ARB and the Energy Commission again both contributed funding to the program, totaling \$36.5 million, double the previous fiscal year's amount and surpassing the total previous program funding to date. Over 94% of total program funding went to vehicle rebates, with the rest going toward program administrative costs. The initial \$18 million in ARB funding accounted for \$17,186,450 in rebates and \$813,550 for administrative expenses. In response to increasing consumer demand, grant G12-AQIP-01 was amended in April 2013 to include an additional \$8 million from the ARB and \$4.5 million from the Energy Commission. This addition provided a total of \$10.5 million, \$9,765,000 for rebates and \$735,000 for program administration, and brought the total fiscal year funding to \$28.5 million. In June, a second grant amendment resulted in an additional \$8 million contribution from the Energy Commission, \$7,440,000 for rebates and \$560,000 for administrative



costs, bringing the total to \$36.5 million. Including funding from both agencies, the CVRP provided 17,422 rebates with a total value of \$34,431,396 in FY 2012-2013.

This report summarizes FY 2012-2013 CVRP activities and is structured in six sections. First, the report summarizes rebate distribution. The second section describes outreach and education activities. The CVRP's broader role in clean vehicle market facilitation is highlighted in section three, followed by a section covering implementation challenges and associated program improvements. The report then discusses value added to the project through collaboration with other initiatives. Findings from California Department of Motor Vehicles data analysis are described next. The final section contains recommendations for future project development.

# II. Rebate Distribution Summary

In FY 2012-2013, the CVRP provided 17,422 rebates with a total value of \$34,431,396 to California individuals, businesses, public agencies and nonprofit organizations. Individuals received more than 97% of total rebate funds. The proportion of rebate funds distributed to California businesses dropped from 8% in FY 2011-2012 to 2.4% in FY 2012-2013. Rebates for governments and nonprofit organizations were minimal at less than 1% of all rebate applications in both total rebates distributed and percentage of rebate funds allocated. For all vehicles, leases were slightly more prevalent than purchases at 55% and 45% respectively.

PHEVs marginally surpassed ZEVs as the most popular vehicle category for the first time in program history. Overall, PHEVs were responsible for 51% of rebates issued and 39% of the program funds allocated in FY 2012-2013. Comparatively, ZEVs were responsible for 48% of the rebates issued and 61% of program funds allocated. ZEMs and NEVs followed with less than 1% of total program funds issued and less than 1% of total rebates issued. A detailed summary of rebate distribution is located in the Appendix (Exhibit 1). A summary of Energy Commission-funded rebates is also available in the Appendix (Exhibit 2). Energy Commission-funded rebate data includes all FY 2012-2013 funding and \$4.65 million of FY 2013-2014 funding.

## a. Rebate Distribution by Regions

Rebates were distributed to recipients in 32 of the state's 35 air districts. Nearly 90% of rebates were distributed to applicants in three air districts: Bay Area Air Quality Management District, South Coast Air Quality Management District and San Diego County Air Pollution Control District. Figure 1 displays vehicle rebates by air district. A complete list of rebates by air district is located in the Appendix (Exhibit 1).

These three air districts nearly mirror the three major regional auto markets in the state. In addition to having higher populations, these regions experience additional factors leading to higher clean vehicle



adoption rates. Each has been targeted by eligible vehicle original equipment manufacturers (OEMs) for first tier marketing efforts and benefited from the value of PEV access to High-Occupancy Vehicle (HOV) lanes. Table 1 compares FY 2012-2013 rebated vehicles to total California light-duty vehicle sales as reported by the California New Car Dealers Association in the quarterly "California Auto Outlook" reports. Total vehicle sales includes both PEVs and internal combustion engine vehicles.

As a federal nonattainment area for ozone and particulate matter, the San Joaquin Valley region would benefit greatly from reduced transportation emissions through the deployment of clean vehicles. From December 2011 to December 2013, the San Joaquin Valley experienced a 13-fold increase in PEV adoption; however, the region continues to represent a small share of total CVRP rebates relative to its proportional population. Introduced in March 2012, Drive Clean! is a region-specific rebate program for the purchase or lease of eligible clean vehicles in the San Joaquin Valley Air Pollution Control District. This program provides consumers with rebates of \$3,000 for ZEVs and \$2,000 for PHEVs. This rebate can be claimed in addition to the CVRP rebate. The San Joaquin Valley's share of total CVRP rebates has since increased more than 20% from FY 2011-2012 to FY 2012-2013. In total, the San Joaquin Valley region received 283 CVRP rebates in FY 2012-2013, representing a nearly 40% increase over the previous fiscal year's total. The highest adopting cities in the Valley are Bakersfield, Fresno, Tracy, Clovis, and Stockton. Combined, these cities share over 60% of the CVRP rebates in the region over the life of the program.



### Figure 1: Vehicle Rebates by Air District



Table 1: Rebated Vehicles and Total California Light-Duty Vehicle Sales, Q3-Q4 2012 and Q1-Q2 2013

Region	Rebated Vehicles as Percent of Total Sales
San Francisco Bay Area	2.33%
Los Angeles and Orange Counties	1.28%
San Diego County	1.09%
California Total	1.06%



# b. Rebate Distribution by Vehicle Type

Of the 17,422 vehicles rebated in FY 2012-2013, 8,895 were PHEVs. In this category, the Chevy Volt was the most rebated, accounting for 59.7% of total PHEV rebates. The Toyota Prius Plug-In Hybrid was the second most common PHEV with 2,767 rebated vehicles. The Ford C-MAX Energi and Fusion Energi entered the program later in the fiscal year and accounted for 754 rebated vehicles combined. The Honda Accord Plug-In accounted for 61 rebates.

The 16 eligible, light-duty ZEV models accounted for 61% of total funds distributed in FY 2012-2013. The Nissan Leaf continued as the most rebated vehicle, making up 45% of all ZEVs. The Tesla Model S was added to the eligible vehicle list in mid-2012 and accounted for 42% of all rebated ZEVs in FY 2012-2013. The 85-kWh model was the most common of the three battery capacity levels. Several ZEVs became rebate eligible later in the fiscal year. Of these models, the Ford Focus Electric and the Toyota Rav4 EV accounted for the most rebates, capturing 5.7% and 4% of all ZEV rebates respectively.

NEVs and ZEMs represented roughly 0.5% of vehicles rebated in FY 2012-2013. Due to the lower \$900 rebate amount, NEVs and ZEMs represented 0.2% of total rebate funds distributed. The five eligible GEM models were the only NEVs rebated. The Zero DS made up 47% of ZEM rebates, down from 88% in the previous fiscal year.

Rebate distribution maps by vehicle type and air district are located in the Appendix (Exhibits 3-6).

# III. Outreach and Education

The FY 2012-2013 outreach and education plan included an updated, user-friendly website, several print marketing materials, multistakeholder workshops, partner-assisted outreach and a growing emphasis on dealer education and stakeholder partnerships.

## a. Website

The CVRP website was overhauled in August 2013 to increase usability for consumers while maintaining high-quality content for stakeholders and policymakers. The website (http://energycenter.org/clean-vehicle-rebate-project) has become a highly successful, low-cost tool for project visibility and online application submission, as evidenced by a steady increase in unique page visits, averaging 8,000 per month throughout 2013. To date, the page has received 235,447 unique views, including 80,311 in FY 2012-2013. In order to adhere to strict applicant privacy guidelines, the website and all associated applicant data is hosted on a secure, dedicated server. Key website components are described in Table 2.



#### Table 2: Website Components

Key Website Component	Description
Eligible Vehicle List	A list of vehicles eligible for the rebate, including links to the manufacturers' vehicle site.
Available Funding Status	A real-time accounting of expended and remaining rebate funds.
Online Rebate Application	Integral to the application process, this tool uses multiple parameters to prescreen applicants for program eligibility and allows the user to initiate the application process and reserve rebate funds.
Applicant Portal	Provides applicants with easily accessible application status updates for each stage of the process in real time (application received, supporting documentation received, application approved, check sent, etc.) using applicant entered CVRP ID number.
Program Statistics and Mapping Tool	A robust program statistics tool that graphically displays summary information of rebates over time and location. Users may query data by vehicle type, applicant type and a variety of geographic conditions. Program statistics also are presented as a dynamically generated map, which allows users to view rebate totals by air district, postal code, county and utility.
CVRP PEV Driver Survey Results	Displays results from voluntary surveys of CVRP participants. Results are available in infographic and report form. Both formats are displayed on the website and available for download.
Additional Incentives and Related Links	Links to ARB's DriveClean website to ensure applicants have the most up- to-date information regarding additional incentives; leverages current ARB program investments. Provides links to PEV-related websites.

## b. Print Marketing Materials

Print marketing materials, including program brochures and clean vehicle technology education flyers, are fundamental to the CVRP education and outreach plan. In addition to being featured at CVRP workshops and statewide educational events, program marketing materials were also distributed to outreach partners such as auto manufacturers, utilities and air districts to extend the reach of CVRP messaging with minimal administrative cost.

Existing program marketing materials were updated and several new pieces were created in order to more effectively reach the expanding clean vehicle market. The CVRP Flyer with FAQs is available in both English and Spanish language versions, which are included in the Appendix (Exhibits 7-8). New materials included an incentives flyer listing major incentives available for all California PEV drivers with associated web links. This flyer is also available in the Appendix (Exhibit 9). CCSE created a "Meet



the Fleet" poster and binder that display all eligible vehicles with associated rebate amounts and vital model information. Examples of print marketing materials are located in the Appendix (Exhibits 7-10).

### c. Workshops

In FY 2012-2013, the CVRP workshop model continued to serve as a "one-stop shop" for clean vehicle information. By bringing together multiple PEV stakeholders, CCSE provided information to consumers on each aspect of purchasing and owning eligible vehicles. Stakeholders and their contributions are listed in Table 3.

Table 3: Workshop Stakeholders and Roles

Stakeholder	Key Message to Consumers
CCSE	Provide framework for the presentation, description of CVRP and the benefits of PEVs.
Utilities Describe PEV utility rates and impacts on the grid, and regional utility incentives.	
Air Districts	Provide information about local air quality issues for each region and describe additional local incentives if available.
Electric Vehicle Supply Equipment (EVSE) Providers	Describe the technology available and guide consumers through a typical residential EVSE installation process.
Municipalities	Provide consumers with in-depth information on the permitting and inspection processes for EVSE installation and provide updates on local infrastructure efforts and incentives.
OEMs or Local Dealers	Enable consumers to view and test-drive eligible vehicles at the workshop location.

During FY 2012-2013, three CVRP workshops were held in California. Workshop locations in the southern region were selected to target areas not included in previous clean vehicle education efforts. CCSE partnered with stakeholders in the South Coast Air Quality Management District to hold two workshops in San Juan Capistrano and Palm Springs. Strong partnerships in the Bay Area contributed to the largest workshop to date (150 attendees). Half of attendees participated in the test-drive portion of the workshop. In total, 280 attendees participated in CVRP Workshops throughout the fiscal year. Examples of the CVRP workshop agenda and flyers can be found in the Appendix (Exhibits 11-12).



# d. Partner-Assisted Outreach and Education Events

In FY 2012-2013, the CVRP was involved in more than 45 partner-assisted outreach events to contact 75,000 consumers. As the market grows, California is experiencing a significant increase in PEV-related outreach events, creating a wealth of opportunities for increasing sales of advanced clean cars. Event involvement included hosting information sessions about eligible vehicles in partnership with OEMs; staffing outreach booths at auto shows, conferences and trade shows; and providing public presentations at fleet, academic and PEV readiness forums. CCSE also partnered with regional stakeholders to host National Plug-In Day in San Diego. More than 500 test-drives were recorded. At each event, CVRP staff provided information about clean vehicle adoption, technologies and incentives. Table 4 details various outreach efforts and approximate consumer interactions.

Event Type	Outreach Efforts	Consumer Interactions
Consumer Education and Awareness Events	CVRP sponsorship, booth presence and presentations	
OEM Sponsored/Partner	Includes booth presence at OEM-sponsored vehicle outreach events and presentations at CCSE-hosted events with OEM partnerships.	2,400
Trade and Auto Shows	Booth presence at major auto shows and alternative vehicle trade shows.	
Conferences	Presentations on clean vehicle adoption, technologies and incentives at various academic forums and conferences.	
Public Sector PEV Readiness Meetings	Presentations and presence at PEV readiness and planning meetings.	400
	Total Consumer Interactions:	6,500

Table 4: Other Outreach Efforts

## e. Dealer Outreach and Education

Educating and developing relationships with eligible-vehicle dealers is extremely important vital to the CVRP's efforts to accurately inform consumers on available incentives. Partnering with OEMs also is critical to effectively manage program marketing resources. CCSE has forged strong relationships with OEMs and dealers throughout the state. The CVRP has conducted six informational webinars open to



all eligible-vehicle dealers, with an average attendance of more than 30 dealer representatives per webinar. In addition, CCSE has participated in dealer-led webinars providing information on the CVRP and other PEV incentives. Webinars connect CVRP staff with eligible-vehicle dealers and CCSE is regularly contacted by dealerships across the state for CVRP and general clean vehicle market information. Given that dealers represent such a critical source of information to consumers, CCSE also has conducted in-person outreach to enhance dealer understanding. Dealer workshops and a newly created dealership educational brochure (produced by the San Diego Clean Cities Coalition in collaboration with CCSE staff) have allowed the CVRP to connect with dealerships across the state. Table 5 displays attendance numbers for dealer outreach events. An example of the dealership educational brochure can be found in the Appendix (Exhibit 13).

Table 5: Dealer Outreach Efforts

Event Type	Description	Total Attendance
Dealer Webinars	CVRP staff conducted six informational webinars to describe funding levels, applicant eligibility, application processes and general project information.	215
Dealer Workshops	CVRP staff led sales consultant trainings presenting incentives and consumer education strategies to OEMs across California.	350

# IV. Market Facilitation Initiatives

The CVRP is an unbiased source for clean vehicle technology research and education. The program provides easily accessible market data and facilitates research and analysis on clean vehicle adoption. These efforts, in conjunction with reducing vehicle costs through the rebate, are helping to facilitate the growth of the clean vehicle market in California.

## a. Data Sharing

As a central source of clean vehicle rebate adoption data, the CVRP is uniquely positioned to provide easily accessible data to PEV stakeholders. The CVRP provides rebate summary statistics to the public in a free and accessible manner (using variables such as vehicle type, date of rebate approval, rebate amount, ZIP code, etc.). Data is available to the public through the Project Statistics web page (<u>http://www.energycenter.org/projectstatistics</u>) and Interactive Map web page (<u>www.energycenter.org/cvrprebatemap</u>) (Appendix, Exhibits 14 and 15). Users of the website data include utilities, OEMs, dealers, electric vehicle supply equipment manufacturers, municipal planners, regional air quality specialists, nonprofit organizations, government agencies, academic institutions



and a multitude of other stakeholders. The data is used to assist other areas of the clean vehicle market, such as state and regional electric vehicle readiness planning, utility transmission planning and targeted clean vehicle technology outreach and education efforts.

# b. Plug-In Electric Vehicle Driver Survey

Leveraging interested CVRP participants, CCSE conducts the state's largest, most comprehensive survey of PEV owners. As part of a longitudinal, voluntary survey, vehicle purchase and usage data has been collected in three separate surveys administered roughly every six months since March 2012. Throughout the three rounds, data from more than 4,000 PEV drivers has been gathered. The data offers a snapshot of vehicle use, charging behavior, access to public and residential charging infrastructure and household demographics of CVRP participants. In addition to the general survey results (Appendix, Exhibits 16), CCSE prepared corresponding analyses that address three specific topics: (1) access to public charging infrastructure and vehicle owner's "willingness to pay" for public vehicle charging, (2) the link between PEV adoption and residential solar ownership and (3) residential charging of PEVs and the adoption of time-of-use electricity rates.

Survey highlights and accompanying analyses are publicly available through the CVRP website (<u>www.energycenter.org/pevsurvey</u>). The report includes valuable data that helps to inform the state how to best promote and accelerate the market for PEVs, maximize consumer and environmental benefits and support utility efforts to efficiently integrate PEVs into the state's electricity grid.

# V. Implementation Challenges and Improvements

## a. Growth of Market

The CVRP received roughly 73% more rebate applications during FY 2012-2013 than in all previous fiscal years combined. In response to this accelerated growth, CCSE worked with ARB staff to improve the application process to manage the increased volume. Project staff prioritized outreach to dealerships and partner-leveraged outreach in order to convey clear and accurate information on the project to prospective consumers.

# b. Rebate Process Improvements

Processing rebates accurately, efficiently and transparently is central to the success of the program. The significant increase in rebate applications required significant changes to application processing procedures, including:

- Improved quality control and tightened tracking procedures to provide updates to applicants from start to finish, providing greater program accountability and transparency.
- Adding a self-service application status update tool.



- Improvements to the online application that increase process efficiency and provide immediate feedback to applicants regarding eligibility.
- Implementation of an automatic folder/inserter machine to eliminate the need for manual rebate check stuffing.
- The development of a more automated database with a robust suite of tools to increase transparency and efficiency.

Fiscal Year 2012-2013 rebate funding was fully expended in May, 2013, resulting in a funding shortfall before the next fiscal year's funds were available. This shortfall in funding necessitated the expansion of procedures to implement a waiting list for future funding allocations. CCSE established and implemented a process to incorporate the distribution of waitlisted rebates while simultaneously processing current fiscal year applications.

## c. Vehicle Resale Process

Multiple factors led rebate recipients to sell or return their vehicle before the 36-month lease/ownership period was completed. Advancements in clean vehicle technologies and a growing lineup of eligible vehicles are driving early adopters to consider newer, more advanced vehicle models. Many early adopters purchased their vehicle when there were limited commercially available options. In addition, several manufacturers offered lucrative vehicle trade-in deals to capitalize on the early adopters' desire for the latest technology while simultaneously seeding the pre-owned vehicle market. Many manufacturers dropped prices on their model offerings and offered factory and dealership incentives to boost sales of new vehicles. Some rebate recipients were also forced to return their vehicles due to financial hardships. The process for requesting early termination of vehicle ownership is available on the CVRP website and described in the CVRP Implementation Manual. In addition, ARB is monitoring registration data from the California Department of Motor Vehicles (DMV) to track ownership compliance.



# VI. DMV Vehicle Registration Data

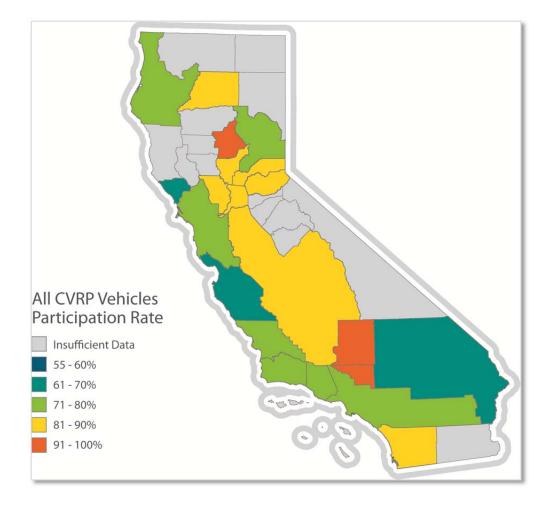
CCSE and ARB collaborated to review DMV vehicle registration data to help analyze three components of the CVRP: (1) CVRP participation rates among drivers of California-registered, rebate-eligible vehicles; (2) ownership compliance rates among rebate recipients; and (3) whether new vehicles purchased and rebated in California remain in-state after the required ownership period. ARB obtained DMV data for PEVs registered in California between January 1, 2010, and March 1, 2013. The rebated vehicle list was analyzed against DMV registration data to determine program participation and compliance rates. Based on the DMV data analysis, over 97% of rebate recipients were found to be in compliance with the ownership and California registration requirement.

Another key point of the analysis was to determine the percentage of eligible applicants participating in the CVRP. Eligible applicants are consumers who purchase an eligible vehicle or lease an eligible vehicle for at least 36 months. By comparing rebate data with DMV registration data, it was found that 76% of drivers of eligible vehicles (14,736 out of 18,438) in the study period obtained a rebate. Through consultation with OEMs, it was estimated that 9% of eligible-vehicle owners leased the vehicle for a period of less than 36 months, making them ineligible to apply for the rebate. Incorporating the entire analysis, roughly 85% of eligible PEV purchase or lease transactions received a CVRP rebate in the study period. It must be noted that this round of DMV data did not include registration data for the Toyota Prius Plug-in Prius model PHEVs

Figure 2 shows CVRP participation as a percent of rebate-eligible PEV drivers by air district; Figure 3 gives information on total rebate participation for each quarter by vehicle category; and Figure 4 displays total participation rates for the major OEMs for the period of January 1, 2010, through March 1, 2013. More data is available in the Appendix (Exhibits 17-18).



### Figure 2: CVRP Participation as a Percent of Rebate-Eligible Vehicles by Air District





#### Figure 3: Rebate Participation by Quarter by Vehicle Category

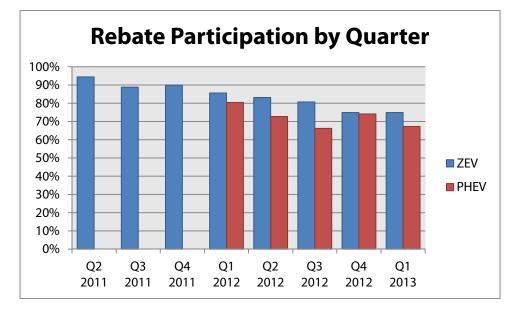
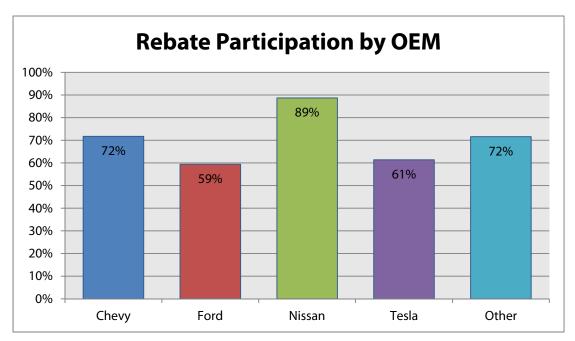


Figure 4: Total Rebate Participation by Manufacturer





# VII. Coordination with Related Programs and Initiatives

The CVRP interacts with a wide range of programs and initiatives at the local and state levels that aim to facilitate the growth of the clean vehicle market in California. This section discusses the broader context of related clean vehicle promotion efforts across the state. While these efforts are not necessarily part of the CVRP scope of work, CCSE staff has developed strong linkages with other clean vehicle initiatives, resulting in a series of beneficial partnerships for clean vehicle promotion.

## a. Utility Customer Education Program

The Utility Customer Education Program connects PEV drivers to their electricity providers, which maximizes the benefits of owning a PEV for the drivers and helps utilities better understand the dynamics of the growing clean vehicle market.

CVRP rebate recipients receive information on local utility procedures and offerings for PEV owners. The program stresses the importance of utility notification upon purchasing a PEV and informs rebate recipients of the available PEV charging rates, metering options and related programs in their area.

CVRP applicants can opt into an email list at the time of applying for the rebate and receive information on their local utility incentives and programs for PEV owners. Applicants also receive an insert with the rebate check that points them to the PEV-related web page of the utility in their area. Between March and October 2013, 15,303 rebate recipients received utility information through this program.

## b. Partnerships with Research Institutions

The PEV Driver Survey has led to partnerships with higher education institutions. The unique data collected through the survey provides an opportunity to leverage university resources for more indepth research.

#### University of California, Davis

Through a partnership with the University of California, Davis Institute of Transportation Studies' Plugin Hybrid & Electric Vehicle Center, research has been conducted to examine consumer behavior, travel behavior, infrastructure planning, environmental impact and other areas related to PEV technology and policy that inform the state, local planning organizations, OEMs and other stakeholders.

#### University of Texas, Austin

The Energy Systems Transformation group at the University of Texas, Austin studies innovation and diffusion of energy technologies through a combination of energy systems modeling and analysis of



the political economy of energy markets. UT Austin has partnered with CCSE to focus on areas of PEV research including the decision-making process, purchasing and financing and driver demographics.

# c. Plug-In Electric Vehicle Planning

CCSE's PEV Planning team prepares California's communities for increased PEV adoption and the spread of PEV charging infrastructure. This effort entails engaging local governments to enact PEV-friendly policies, supporting workplaces in the installation of PEV charging stations for employees and helping consumers navigate the PEV market.

The PEV Planning team authored regional PEV readiness plans for the San Joaquin Valley and the San Diego regions. These documents cover barriers to the deployment of charging stations unique to each region. Publically available CVRP rebate data and staff expertise have proven vital in creating these documents, allowing the PEV Planning team to analyze the geography of PEV ownership, how owners use their vehicles and the characteristics they share. This helps the PEV Planning team chart regional PEV market growth and identifies optimal locations for charging stations in communities. All these efforts prepare utilities and local governments for the growing number of PEVs on California's roads. In return, the market knowledge built through PEV planning has contributed to the CVRP staff's ability to provide high-level information to stakeholders and participants.

## d. Energy Upgrade California

Energy Upgrade California (EUC) is a program that provides incentives and resources to address energy efficiency and home performance issues for homeowners across the state. While EUC is not directly related to the clean vehicle market, data from the PEV Driver Surveys indicate that PEV buyers often share similar environmental values and demographics. Consequently, the CVRP and Building Performance (BP) teams at CCSE have been working to promote PEVs as an important component in making wise household energy decisions.

The BP team is conducting outreach in the San Diego region through two main venues: energy efficiency home yours and homeowner workshops. In a San Diego pilot, CVRP staff participated in 20 energy efficiency home tours between April and November 2013. Participants also received information on PEVs and the CVRP at three homeowner workshops since August 2013. CVRP staff has been present at these events to answer any questions the attendees might have related to owning a PEV, as well as to disseminate information on the benefits of clean vehicles, including the available incentives. All homeowner workshops and half of the energy efficiency home tours showcased CCSE's company PHEV. The BP team has also been trained independently to provide CVRP-related information to event participants. CCSE staff is exploring efficient methods to expand this collaboration statewide.



### e. Future Initiatives

#### Bay Area Metropolitan Transit Commission EV Outreach Campaign

Through a grant recently awarded to CCSE by the Metropolitan Transportation Commission, CCSE staff will organize a series of 25 ride and drive PEV outreach events across the Bay Area in 2014. The grant provides an excellent opportunity to inform Bay Area residents about the CVRP and its role in promoting PEV adoption in the state. CVRP staff will be actively engaged in these events as well as in CVRP outreach throughout the Bay Area alongside this campaign.

#### **Integrating Solar PV Systems and Plug-In Electric Vehicles**

In an effort to further integrate PEV promotional efforts into the broader field of sustainable energy development, the California Solar Initiative (CSI) and CVRP staff at CCSE have joined forces to create a one-stop resource for Californians who are planning to power their PEVs with rooftop solar energy. Plans for the initiative include the design of collateral to be disseminated during outreach events and, most importantly, the creation of a dedicated, interactive EV-solar web page on CCSE's website. The web page will educate consumers on integrating both technologies into one system at the household level, as well as provide details on the related costs, savings, incentives and other important factors to consider when combining an electric vehicle with home solar. According to PEV Driver Survey results, 32% of CVRP rebate recipients own solar photovoltaic systems and 16% intend to add a system to their home. The overlapping demographics of solar and PEV adopters show the need for collaborative efforts.

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# Appendix



### Exhibit 1: FY 2012-2013 Rebate Summary

### Rebates by Applicant Type

Applicant Type	Rebates Issued	Total Rebate Amounts	Percentage of Total Distributed
Private individual or sole proprietor	16,898	\$33,462,835	97.2%
California licensed business	447	\$820,961	2.4%
Local government agency	36	\$75,300	0.2%
State government agency	28	\$49,000	0.1%
Nonprofit organization	13	\$23,300	0.1%
Total	17,422	\$34,431,396	100%

### Rebates by Vehicle Category

Vehicle Type	Rebates Issued	Total Rebate Amounts	Percentage of Total Distributed
Light-duty zero emission (\$2,500)	8,445	\$21,038,437	61.1%
Plug-in hybrid electric (\$1,500)	8,895	\$13,319,159	38.7%
Zero emissions motorcycle (\$900)	55	\$49,500	0.1%
Neighborhood electric (\$900)	27	\$24,300	0.1%
Total	17,422	\$34,431,396	100%



### Exhibit 1: FY 2012-2013 Rebate Summary (Continued)

### **Rebates by Air District**

Air District	Rebates Issued	Total Rebate Amounts	Percentage of Total Distributed
Amador	4	\$8,000	0.0%
Antelope Valley	43	\$76,500	0.2%
Bay Area	6,170	\$12,734,979	37.0%
Butte	18	\$33,400	0.1%
Calaveras	14	\$30,000	0.1%
El Dorado	82	\$159,400	0.5%
Feather River	8	\$16,000	0.0%
Glenn	1	\$1,500	0.0%
Great Basin Unified	3	\$3,900	0.0%
Imperial	7	\$10,900	0.0%
Kern	10	\$16,800	0.0%
Lake	7	\$12,500	0.0%
Mariposa	1	\$1,500	0.0%
Mendocino	12	\$26,000	0.1%
Mojave Desert	30	\$56,000	0.2%
Monterey Bay Unified	290	\$589,700	1.7%
North Coast Unified	22	\$42,000	0.1%
Northern Sierra	18	\$40,000	0.1%
Northern Sonoma	27	\$58,500	0.2%
Placer	155	\$300,500	0.9%
Sacramento Metro	369	\$787,000	2.3%
San Diego	1,402	\$2,853,528	8.3%
San Joaquin Valley Unified	283	\$575,300	1.7%
San Luis Obispo	72	\$151,000	0.4%
Santa Barbara	119	\$250,200	0.7%
Shasta	21	\$43,500	0.1%
Siskiyou	2	\$4,000	0.0%
South Coast	7,723	\$14,569,374	42.3%
Tehama	1	\$2,500	0.0%
Tuolumne	1	\$2,500	0.0%
Ventura	396	\$749,415	2.2%
Yolo-Solano	111	\$225,000	0.7%
Total	17,422	\$34,431,396	100.0%



## Exhibit 1: FY 2012-2013 Rebate Summary (Continued)

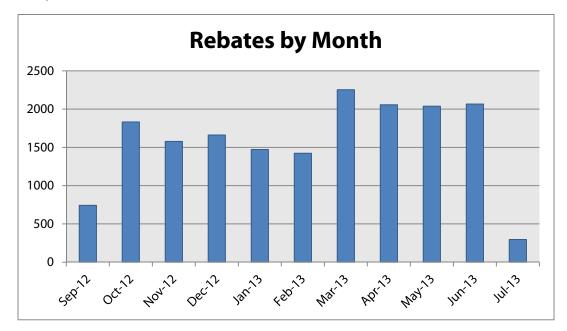
### Rebates by Vehicle Category and Model

Vehicle Type	Rebates Issued	Total Rebate Amounts	Percentage of Total Distributed
Light-Duty Zero Emissions Vehicle	8,445	\$21,038,437	61.1%
Chevrolet Spark EV	20	\$50,000	0.1%
CODA	27	\$67,500	0.2%
Ford Focus Electric	485	\$1,209,401	3.5%
Honda FCX Clarity	1	\$2,500	0.0%
Honda Fit EV	144	\$360,000	1.0%
Mercedes-Benz F-Cell	6	\$15,000	0.0%
Mitsubishi i-MiEV	72	\$142,061	0.4%
Nissan Leaf	3,764	\$9,382,560	27.3%
Smart USA Electric Fortwo Cabriolet or Coupe	25	\$62,500	0.2%
Think City	14	\$32,915	0.1%
Tesla Roadster	8	\$20,000	0.1%
Tesla Model S - 40 kWh battery	199	\$497,500	1.4%
Tesla Model S - 60 kWh battery	860	\$2,150,000	6.2%
Tesla Model S - 85 kWh battery	2,482	\$6,205,000	18.0%
Toyota RAV4 EV	338	\$841,500	2.4%
Plug-In Hybrid Electric Vehicle	8,895	\$13,319,159	38.7%
Chevy Volt Low Emission package	5,313	\$7,965,267	23.1%
Ford C-MAX Energi	490	\$733,950	2.1%
Ford Fusion Energi	264	\$397,000	1.2%
Honda Accord Plug-In	61	\$91,500	0.3%
Toyota Prius Plug-In Hybrid	2,767	\$4,131,442	12.0%
Zero Emissions Motorcycle	55	\$49,500	0.1%
Brammo Empulse	9	\$8,100	0.0%
Brammo Enertia	1	\$900	0.0%
Brammo Enertia Plus	2	\$1,800	0.0%
Zero DS	26	\$23,400	0.1%
Zero FX	4	\$3,600	0.0%
Zero S	11	\$9,900	0.0%
Zero XU	2	\$1,800	0.0%
Neighborhood Electric Vehicle	27	\$24,300	0.1%
GEM e2	14	\$12,600	0.0%



GEM e4	4	\$3,600	0.0%
GEM eL	1	\$900	0.0%
GEM eL XD	7	\$6,300	0.0%
GEM eS	1	\$900	0.0%
Total	17,422	\$34,431,396	100.0%

### Rebates by Month for FY 2012-2013





### Exhibit 2: FY 2012-2013 Energy Commission-Funded Rebate Summary

\*This data includes all Energy Commission-funded rebates from FY 2012-2013 funding and \$4.65 million of FY 2013-2014 funding.

### Rebates by Applicant Type

Applicant Type	Rebates Issued	Total Rebate Amounts	Percentage of Total Distributed
Private individual or sole proprietor	7,749	\$15,866,500	97.5%
California licensed business	170	\$345,200	2.1%
Local government agency	23	\$45,000	0.3%
State government agency	6	\$12,000	0.1%
Nonprofit organization	2	\$4,000	0.0%
Total	7,950	\$16,272,700	100%

### Rebates by Vehicle Category

Vehicle Type	Rebates Issued	Total Rebate Amounts	Percentage of Total Distributed
Light-duty zero emission (\$2,500)	4,394	\$10,937,750	67.2%
Plug-in hybrid electric (\$1,500)	3,556	\$5,334,950	32.8%
Total	7,950	\$16,272,700	100%



### Exhibit 2: FY 2012-2013 Energy Commission-Funded Rebate Summary (Continued)

### **Rebates by Air District**

Air District	Rebates Issued	Total Rebate Amounts	Percentage of Total Distributed
Amador	1	\$1,500	0.0%
Antelope Valley	19	\$39,500	0.2%
Bay Area	2,650	\$5,575,500	34.3%
Butte	7	\$12,500	0.1%
Calaveras	5	\$11,500	0.1%
El Dorado	33	\$65,500	0.4%
Feather River	4	\$10,000	0.1%
Great Basin Unified	1	\$1,500	0.0%
Imperial	2	\$5,000	0.0%
Lake	3	\$4,500	0.0%
Mendocino	6	\$13,000	0.1%
Mojave Desert	17	\$35,500	0.2%
Monterey Bay Unified	115	\$244,500	1.5%
North Coast Unified	6	\$10,000	0.1%
Northern Sierra	8	\$16,000	0.1%
Northern Sonoma	12	\$25,000	0.2%
Placer	78	\$153,000	0.9%
Sacramento Metro	165	\$358,500	2.2%
San Diego	675	\$1,452,000	8.9%
San Joaquin Valley Unified	135	\$288,000	1.8%
San Luis Obispo	34	\$73,000	0.4%
Santa Barbara	55	\$119,500	0.7%
Shasta	13	\$24,500	0.2%
South Coast	3,657	\$7,230,700	44.4%
Tuolumne	1	\$2,500	0.0%
Ventura	195	\$391,000	2.4%
Yolo-Solano	53	\$109,000	0.7%
Total	7,950	\$16,272,700	100.0%



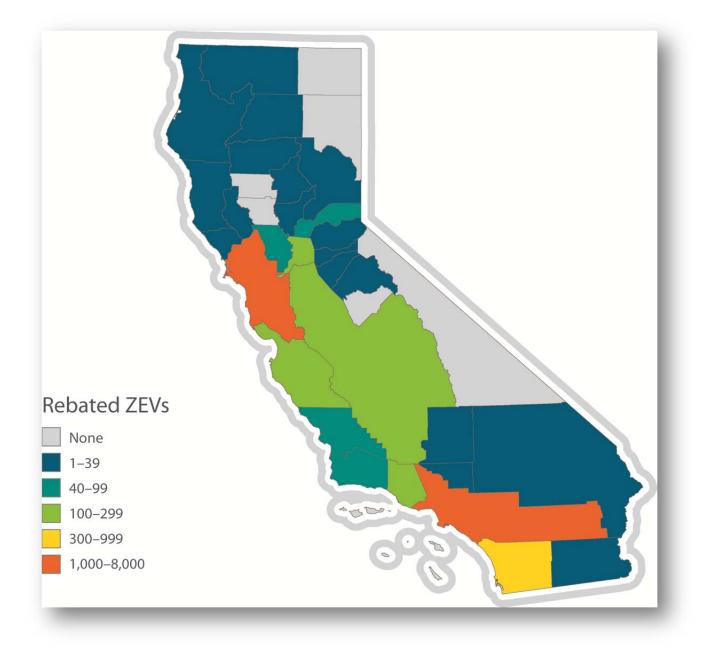
### Exhibit 2: FY 2012-2013 Energy Commission-Funded Rebate Summary (Continued)

### Rebates by Vehicle Category and Model

Vehicle Type	Rebates Issued	Total Rebate Amounts	Percentage of Total Distributed
Light-Duty Zero Emissions Vehicle	4,394	\$10,937,750	67.2%
Chevrolet Spark EV	97	\$242,500	1.5%
CODA	2	\$5 <i>,</i> 000	0.0%
FIAT 500e	108	\$270,000	1.7%
Ford Focus Electric	197	\$492,500	3.0%
Honda Fit EV	113	\$282,500	1.7%
Mercedes-Benz 2011/12 F-Cell	5	\$12,500	0.1%
Mitsubishi i-MiEV 2012	39	\$81,000	0.5%
Nissan Leaf	1649	\$4,096,250	25.2%
Tesla 2009-2011 Roadster	0	\$0	0.0%
Tesla Model S - 40 kWh battery	216	\$540,000	3.3%
Tesla Model S - 60 kWh battery	541	\$1,352,500	8.3%
Tesla Model S - 85 kWh battery	1206	\$3,012,250	18.5%
Toyota RAV4 EV	221	\$550,750	3.4%
Plug-In Hybrid Electric Vehicle	3,556	\$5,334,950	32.8%
Chevy Volt Low Emission package	2379	\$3,569,500	21.9%
Ford C-MAX Energi	263	\$393,450	2.4%
Ford Fusion Energi	277	\$416,500	2.6%
Honda Accord Plug-In	61	\$91,500	0.6%
Toyota Prius Plug-In Hybrid	576	\$864,000	5.3%
Total	7,950	\$16,272,700	100.0%

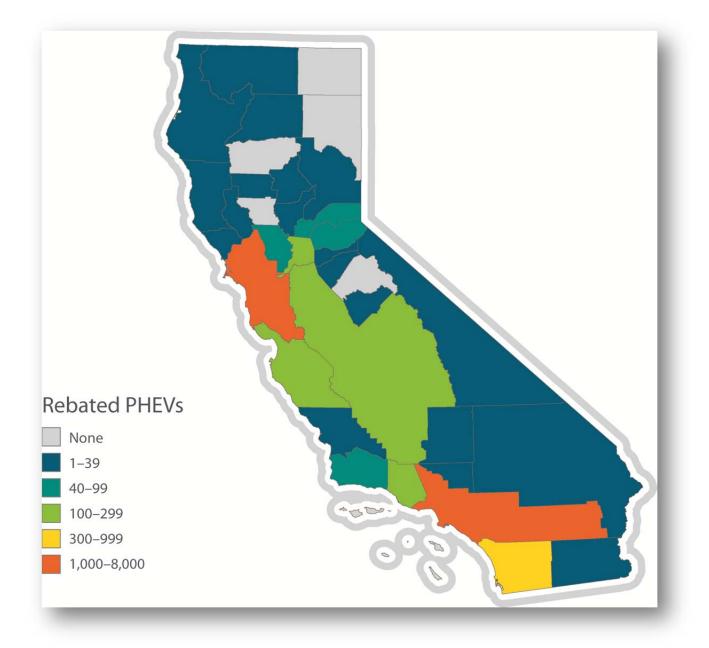


### Exhibit 3: FY 2012-2013 Rebated ZEVs by Air District



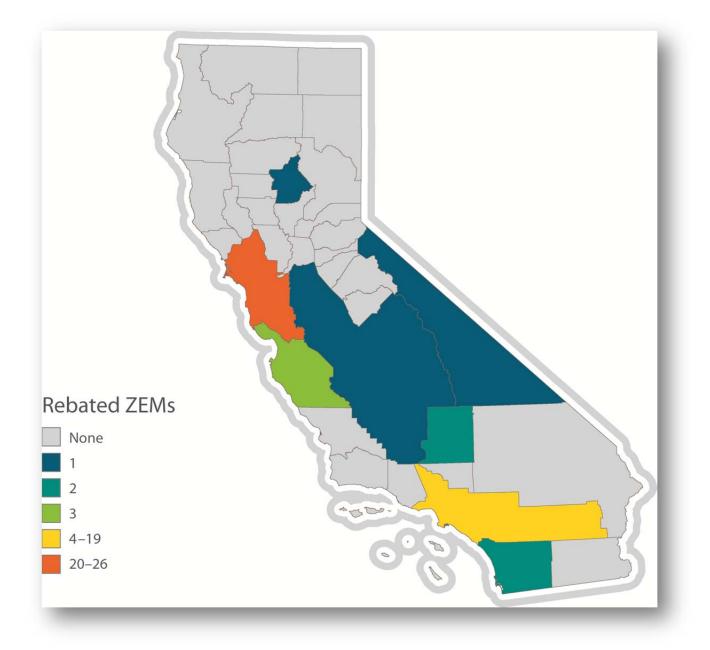


### Exhibit 4: FY 2012-2013 Rebated PHEVs by Air District



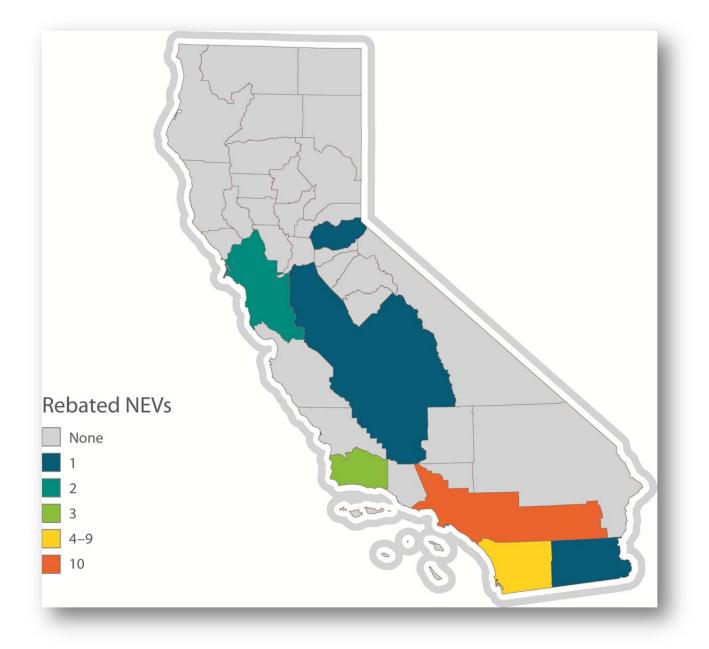


### Exhibit 5: FY 2012-2013 Rebated ZEMs by Air District





### Exhibit 6: FY 2012-2013 Rebated NEVs by Air District





#### Exhibit 7: CVRP Flyer with FAQ





### Exhibit 7: CVRP Flyer with FAQ (Continued)





### Exhibit 8: CVRP Flyer with FAQ – Spanish





### Exhibit 8: CVRP Flyer with FAQ – Spanish (Continued)





### Exhibit 9: Examples of Incentives Flyers (Front Sides)





## Exhibit 9: Examples of Incentives Flyers Continued (Back Sides)





# Exhibit 10: Meet the Fleet Flyer

r.	Vehicle	1.100	Electric Range*	Rebate
	BYD e6		122 miles	\$2,500
	Chevrolet Spark EV		82 miles	\$2,500
	Fiat 500e		87 miles	\$2,500
	Ford Focus Electric		76 miles	\$2,500
	Honda Fit EV		82 miles	\$2,500
	Mitsubishi i-MiEV		62 miles	\$2,500
	Nissan LEAF		75 miles	\$2,500
	smart ED and Electric Fortwo		68 miles	\$2,500
	Tesla Model S (40 kWh, 60 kWh and 85 kWh battery)	RO	265 miles	\$2,500
	Tesla Roadster and Roadster Sport		244 miles	\$2,500
	TH!NK City		100 miles	\$2,500
	Toyota RAV4 EV	=	103 miles	\$2,500
	Wheego LiFe		100 miles	\$2,500
	Chevrolet Volt (Low Emission Package)		38 EV miles	\$1,500
	Ford CMAX Energi		21 EV miles	\$1,500
8	Ford Fusion Energi		21 EV miles	\$1,500
	Honda Accord Plug-in		13 EV miles	\$1,500
	Toyota Prius Plug-in Hybrid	<b>\$</b> .	11 EV miles	\$1,500
	Honda FCX Clarity (fuel cell)		240 miles	\$2,500
	Mercedes-Benz F-Cell (fuel cell)		240 miles	\$2,500
	Neighborhood Electric Vehicles (several models)		varies by model	\$900



# Exhibit 11: San Francisco Workshop Agenda

	ure is Electric: Plug In une 8, 2013   10:30 a.m. – 2:3		
	Introduction	Colin Santulli, California Center for Sustainable Energy d describe the format of the workshop	
10:35 a.m. – 10:40 a.m.	Opening Remarks	Melanie Nutter, Director, San Francisco Department of the Environment	
10:40 a.m. – 11:00 a.m.	PEV 101 & Incentives Environmental, public health and	Colin Santulli, California Center for Sustainable Energy economic benefits of PEVs & an overview of available incentives	
11:00 a.m. – 11:15 a.m.	PEV Planning & Infrastructure Updates on regional public chargi	Karen Schkolnick, Bay Area Air Quality Management District ing infrastructure	
11:15 a.m. – 11:30 a.m.	<b>PEV Impact to Grid and Utility Bills</b> Paul Carreon, Pacific Gas & Electric (PG&E) PEV programs including grid reliability, rate programs and how PG&E can help customers prepare their homes for PEV fueling		
11:30 a.m. – 11:45 a.m.	Question and Answer Session	Presenters	
11:45 a.m. – 12:15 p.m.	PEV Drivers PanelLocal San Francisco ResidentsHear from your neighbors about the PEV experience including motivations to purchase a PEV, home charger installation process and utility rates		
12:15 p.m. – 2:30 p.m.	<ul> <li>Lunch and PEV Experience!</li> <li>Interactive Drivers Panel — Continue your conversations from the Drivers Panel one-on-one</li> <li>PEV Experience — Enjoy vehicles available for test drives and on static display</li> <li>Car Share Services — Learn about PEVs in local car share fleets</li> </ul>		
B	SFEnvironment Our home. Our city. Our planet. A Department of the City and County of San Francisco	BAY AREA ARQUALITY MANAGUSTER DISTRICT BISTRICT	



#### Exhibit 12: San Francisco Workshop Flyer





#### **Exhibit 13: Dealership Outreach Brochure**

# **Plug-in Electric** Vehicle Benefits Incentives available Fun driving experience Low fuel and maintenance costs Minimal environmental impacts Reduced dependence on oil Different sizes and ranges to meet your needs Learn more about the advantages of driving electric: sdcleancities.org/ev SAN DIEGO REGIONA CLEAN CITIES COALITION PLUG-IN. SAVE MONEY. DRIVE ELECTRIC.

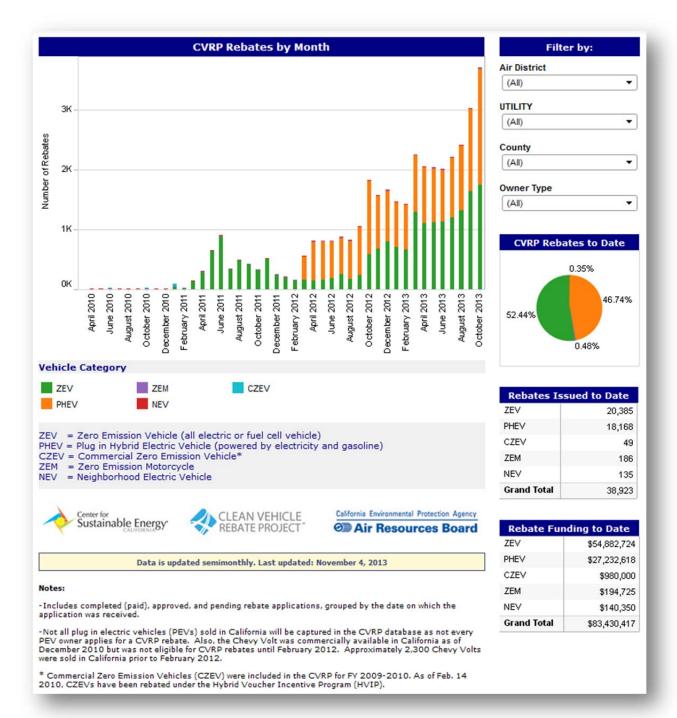


## Exhibit 13: Dealership Outreach Brochure (Continued)



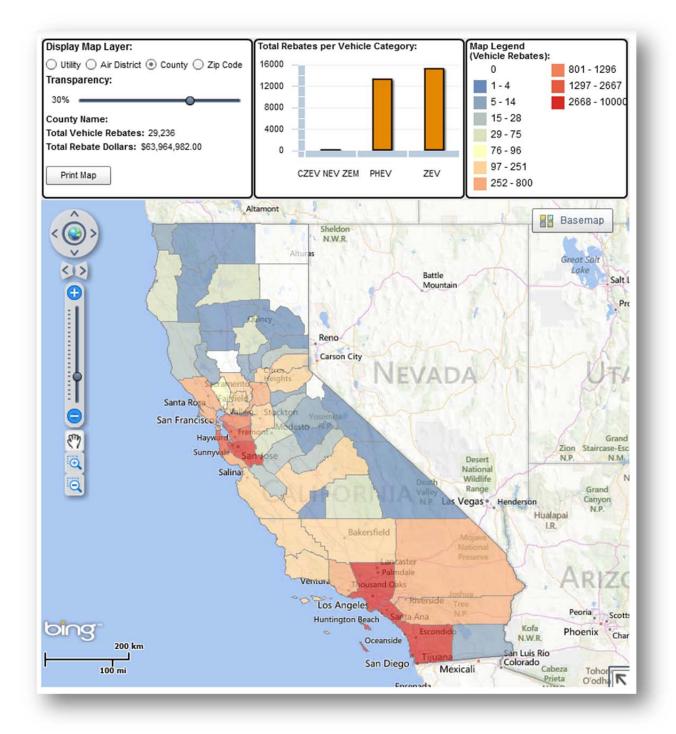


### Exhibit 14: Project Statistics Web Page – www.energycenter.org/projectstatistics



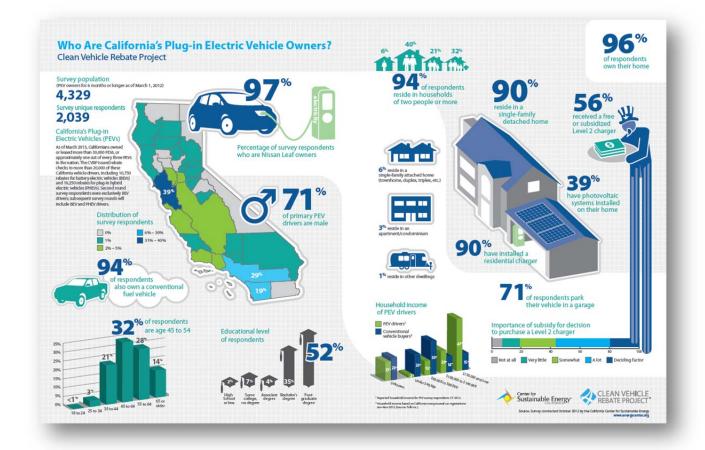


### Exhibit 15: Interactive Rebate Map Web Page – www.energycenter.org/cvrprebatemap





## Exhibit 16: PEV Driver Survey Infographic – May 2013 Report





## Exhibit 16: PEV Driver Survey Infographic – May 2013 Report (Continued)

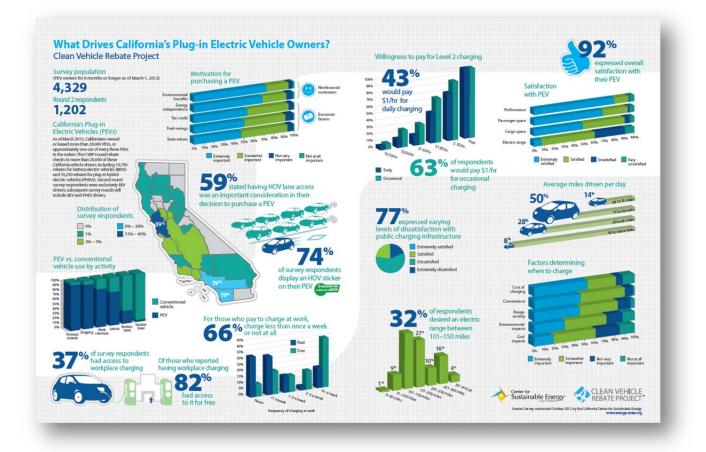
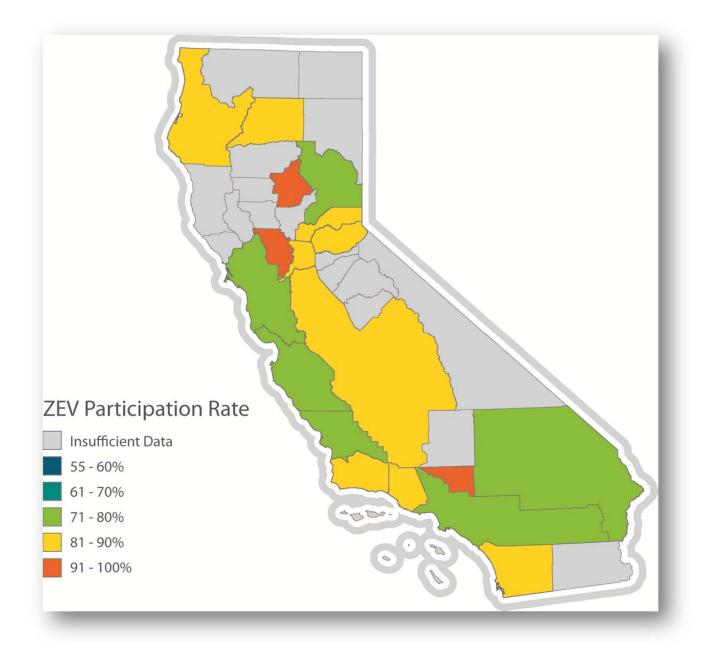




Exhibit 17: CVRP Participation as a Percent of Rebate-Eligible ZEV Drivers by Air District in FY 2012-2013





# Exhibit 18: CVRP Participation as a Percent of Rebate-Eligible PHEV Drivers by Air District in FY 2012-2013

