

San Diego Gas & Electric Electric Vehicle-Grid Integration Pilot Program

San Diego Gas & Electric (SDG&E) is seeking authorization from the California Public Utilities Commission (CPUC) to launch a pilot program investigating the benefits to its customers of efficiently integrating plug-in electric vehicle (PEV) charging load. The pilot will explore PEV drivers' response to an innovative dynamic rate that reflects conditions on both the California Independent System Operator's system and the local distribution grid. This pilot program builds upon SDG&E's PEV Pricing and Technology Study, which found that PEV owners were responsive to time-of-use price signals and primarily charged during the discounted super-off-peak period (12 a.m. to 5 a.m.) when system demand was lowest. The proposed pilot will explore how flexible PEV charging can support cost-effective integration of available renewable energy resources.

Key Features

- Over a period of 5 years, a total of 5,500 chargers will be installed at multi-unit dwellings and workplaces, settings where there is parking with long durations. SDG&E will own the charging facilities and plans to contract with third parties to build, install, operate and maintain the grid-integrated systems.
- The pilot will assess flexibility of PEV charging loads, shedding light on the degree to which efficient integration of PEV charging loads can yield cost savings to all customers by avoiding future utility infrastructure additions.
- Notably, the program will gauge the extent to which PEVs can help to cost-effectively integrate renewable energy resources available from California's grid. As the share of renewable energy grows, California is increasingly experiencing episodes when the grid cannot absorb all of the electricity being produced. PEVs may be able to absorb some of this energy, lowering the cost of fuel to PEV drivers.
- SDG&E plans to use an innovative rate design that reflects system-wide commodity energy and capacity costs, as well as system and localized grid conditions.
- Plans include making use of a smart-phone application that will communicate localized, hourly prices to PEV owners on a day-ahead basis. Customers can use the app to set charging parameters (e.g., maximum price, time when vehicle must be fully charged) and track how much they pay for charging. Charging costs will appear as a line item on participating customers' monthly utility bills.
- Data collection and analysis from this pilot program will help inform CPUC PEV policy

- SDG&E has requested authorization for \$59M in capital costs and \$44M in O&M expense over the life of the project.

Benefits

- Encourage PEV adoption by expanding the availability of charging facilities available to residents of multi-family housing.
- Enable PEV owners to drive more all-electric miles by providing the opportunity to charge at work.
- Expand the market for third party suppliers of chargers and related equipment and services.
- Exert downward pressure on rates for all customers through more efficient utilization of the distribution grid and yield cost savings to all customers by avoiding future utility infrastructure additions.

Status

SDG&E submitted its application to the CPUC in April 2014. The current schedule calls for testimony, evidentiary hearings and briefing, with a proposed decision to be issued by October 2015 and a vote shortly thereafter.

Link to SDG&E's Application to the CPUC: http://bit.ly/SDGE_EV_App