



News Release

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PG&E and Tesla Motors Co-Pilot Vehicle-to-Grid Research Partnership to Explore Remote Charging Technology, Ancillary Grid Benefits

SAN FRANCISCO –Pacific Gas and Electric Company today announced it has partnered with Tesla Motors to further evolve vehicle-to-grid (V2G) technology by researching smart charging – a form of V2G designed to allow remote control charging of electric vehicles connected to the power grid. The project partnership will combine Tesla Motors’ leading electric vehicle expertise with PG&E’s electric infrastructure experience to explore the ancillary grid benefits of remote charging.

“V2G technology is one of the most promising solutions to help meet our growing energy needs while reducing the transportation sector’s impact on the environment”, said Brad Whitcomb, vice president of customer products and services for PG&E. “By teaming up with Tesla, we are taking another key step to bring V2G’s benefits to our customers.”

“We are focusing our initial V2G implementation on smart charging,” said JB Straubel, Chief Technology Officer, Tesla Motors. “Smart charging is a form of V2G in which the vehicle does not provide power back to the grid. Instead, the vehicle charging rate is controlled remotely in order to support the operation of the grid or to best match load to the availability of intermittent renewable energy resources such as wind and solar. Tesla Motors’ goal in developing V2G is to eventually provide our customers with an option that could reduce their cost of electricity for vehicle charging while supporting greater penetration of renewable energy on the grid.”

Using the all-electric Tesla Roadster, PG&E will demonstrate smart charging, which allows remote access to the electric vehicle’s charging power level through communication with the utility. Tesla Motors will work with PG&E to equip a demonstration Roadster with the communications technology that enables intelligent charging. PG&E will also install monitoring equipment at the auto manufacturer’s San Carlos location for testing purposes.

About V2G & Smart Charging

V2G technology allows for the bi-directional transfer of electricity between Electric Vehicles (EVs) and Plug-in Electric Hybrid Vehicles (PHEVs) and the electric power grid. The technology turns each vehicle into a remotely-controllable energy storage system. If deployed on a wide scale, V2G has the potential to provide a large remotely-controllable energy storage resource that can support a greater share of electricity generation from intermittent renewable resources.

V2G is conventionally considered as the delivery of power from a vehicle back to the power grid. However, vehicles can also provide useful services to the grid even without delivering power back

to the grid. For example, by allowing the vehicle charging rate to be ramped up and down remotely through smart metering a vehicle can perform a grid ancillary service called regulation. Regulation is currently performed 24/7 by power plants in order to fine tune the balance between generation and load.

If this demonstration project is successful, and smart charging is deployed on a wider scale, it is expected to be interfaced with PG&E's SmartMeter technology, which continually reads circuits and electric meter usage and has the ability to provide financial incentives to customers who voluntarily shift electricity usage away from critical peaks.

Additional

In addition to partnering with Tesla on V2G research, PG&E is working with the auto manufacturer to support the installation of Tesla Motors' charging stations into their customers' homes or businesses. PG&E is working with Tesla Motors to ensure proper connection in its customers' homes within the utility's northern and central California service territory and advising the auto manufacturer on its collaboration with utilities nationwide.

PG&E became the first utility in the nation to publicly demonstrate the possibility of electric vehicles to supply homes and business with electricity at a Silicon Valley Leadership Group event in April 2007. More recently, PG&E shared this technical expertise with Google in June 2007 to upgrade a number of company-owned Toyota Prius PHEVs to be V2G capable for a demonstration at the search leader's Mountain View campus.

PG&E's PHEV/EV and V2G program is part of its broader strategy to develop innovative energy solutions that deliver the cleanest and most reliable power to its customers. In addition to its PHEV and dedicated electric vehicles, PG&E owns and operates a clean fuel fleet of fuel cell vehicles and more than 1,300 natural gas vehicles – the largest of its kind in the United States. PG&E's clean fuel fleet consists of service and crew trucks, meter reader vehicles and pool cars that run either entirely on compressed natural gas or have bi-fuel capabilities. Over the last 15 years, PG&E's clean fuel fleet has displaced over 3.4 million gallons of gasoline and diesel, and helped to avoid 6,000 tons of carbon dioxide from entering the atmosphere.

For more information about Tesla Motors, please visit the company's web site at www.teslamotors.com.

For more information about Pacific Gas and Electric Company, please visit the company's web site at www.pge.com.