



BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CAL

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Application of San Diego Gas & Electric
(U902E) for Approval of its Electric Vehicle-
Grid Integration Pilot Program.

Application 14-04-014
(Filed April 11, 2014)

PREHEARING CONFERENCE STATEMENT OF
ENVIRONMENTAL DEFENSE FUND

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I. INTRODUCTION

Pursuant to Rule 1.9 and 1.10 of the California Public Utilities Commission’s (“Commission”) Rules of Practice and Procedure and in accordance with the “E-mail Ruling Requesting Prehearing Conference Statements,” dated August 1, 2014, Environmental Defense Fund (“EDF”)¹ respectfully submits its Prehearing Conference Statement for San Diego Gas & Electric’s (“SDG&E”) Vehicle-Grid Integration (“VGI”) pilot application. As advocates for reducing greenhouse gases through smart EV charging and clean energy policies, as well as by increasing the number of low- and zero-emission miles driven in California, EDF believes it to be of high importance that maximum benefits are achieved through SDG&E’s pilot.

California’s transportation sector is the state’s largest single source of greenhouse gas emissions, accounting for 37 percent of total emissions.² As the Commission is aware, the state, which is home to roughly one-third of the nation’s electric vehicles (“EVs”), has adopted a broad set of air quality and climate change policies intended to substantially increase the number of

¹ EDF is a leading non-profit organization representing nearly 315,000 dues-paying members across the country, including almost 55,000 in California. Since 1967, EDF has linked science, economics, law, and innovative private-sector partnerships to create breakthrough solutions to the most serious environmental problems. EDF has been active in California on environmental issues since the 1970s, and has participated in proceedings on energy-related topics at the California Public Utilities Commission since 1976.

² California Air Resources Board, *California Greenhouse Gas Emission Inventory: 2000-2012 (2014 Edition)* at 16 (May 2014), http://www.arb.ca.gov/cc/inventory/pubs/reports/ghg_inventory_00-12_report.pdf.

clean energy vehicles in California. The proposed VGI pilot has the potential to point to ways that utility-sponsored EV-charging programs could help maximize the benefits of connecting EVs to the grid.³ Combining a day-ahead dynamic hourly price with intuitive and convenient customer interfaces (e.g., an iPhone app) has great potential to employ EVs as the least-cost means to integrate more solar energy, and thus, leverage a growing, low-cost storage source to facilitate the state’s greenhouse gas reduction goals and a more reliable grid. Ultimately, this pilot also has the potential to increase deployment of EVs and the number of zero emission miles that are driven by enhancing the value proposition of EV usage.

The qualities to be demonstrated in this pilot can – if deployed at scale - have grid, environmental, and health benefits. In order to ensure this, EDF believes that there are several issues that should be coordinated with the Commission’s alternative-fueled vehicle rulemaking, R. 13-11-007 (“EV docket”). While the potential benefits of doing the pilot are significant, EDF would like to continue to work with the Commission and SDG&E to ensure that the pilot has the appropriate scope, cost, and longevity. We therefore think that the Commission has properly focused the prehearing conference statement on the following question:

How should this proceeding be coordinated with the Rulemaking to Consider Alternative-Fueled Vehicle Programs, Tariffs and Policies (R. 13-11-007) given the scope outlined in the July 16, 2014 Assigned Commissioner’s Scoping Memo and Ruling? In particular, what issues between the proceedings require coordination and what scheduling considerations necessarily arise, if any?

In particular, EDF believes that the following issues, identified by Commissioner Peterman to be within the scope of the EV docket, should be considered in SDG&E’s VGI pilot application:

³ A similar pilot is currently being tested at New Jersey’s Public Service Gas & Electric. Alexi Friedman, *PSE&G promotes electric vehicles, and its business, with program for charging stations*, New Jersey Star-Ledger (Jul. 22, 2014), http://www.nj.com/business/index.ssf/2014/07/pseg_promotes_electric_vehicles_and_its_business_with_free_charging_stations.html.

- (1) proper valuation of VGI resources;
- (2) safety, environmental, and health benefits; and
- (3) ownership of EV infrastructure

II. DISCUSSION

1. In order to achieve maximum benefit from VGI resources, the Commission needs to ensure that these resources are comprehensively valued.

In order to ensure that VGI resources have empirically-based, transparent incentives that thrive, to the benefit of the grid, these benefits need to be properly valued and linked to VGI policies. If this pilot works as planned and allows for increased use of EVs,⁴ harnessing VGI benefits will become increasingly important.

An uptick in the amount of zero emission miles traveled will trigger an increased need for electricity. If managed correctly, this demand increase could contribute to greater grid stability, by, for example, soaking up excess solar during peak photovoltaic generation periods or using EVs as part of a storage-based reliability strategy linked to demand response tariffs. In this respect, an expanded use of EVs requires that VGI resources be appropriately calibrated and leveraged to enhance, rather than challenge, the grid.

If the appropriate value for services is reflected in EV and VGI policies, these mobile batteries can act like energy storage and demand response resources, facilitate the integration of

⁴ The SDG&E pilot application states that a goal of the pilot’s “proposed MuD [multi-unit dwelling] and workplace siting has great potential to increase EV ownership and zero emission miles driven per EV, as well as provide opportunities to examine the benefits of grid-integrated charging and MuD and workplace siting.” CPUC VGI Pilot application page 2. Though ORA states in its protest to this application that there is little evidence that workplace and MuD charging can accelerate EV use, a recent study by UCLA found in Los Angeles that “despite the strong initial efforts to spur adoption of electric vehicles and installation of complementary charging infrastructure, a key element has been left out: residents of multi-unit dwellings.” Judith Balmin, *et al.*, *Increasing Electric Vehicle Charging Access in Multi-Unit Dwellings in Los Angeles*, at 1, University of California, Los Angeles, Luskin Center for Innovation (July 2012), <http://luskin.ucla.edu/sites/default/files/EV%20Charging%20in%20LA%20MUDs.pdf>. In addition, workplace charging can reduce or even eliminate range anxiety – according to the Union of Concerned Scientists, “workplace charging would mean a significant increase in the number of people who could have an all-electric commute.” David Reichmuth, *Workplace Charging: Good for Business and a Chance for Business to do Good*, Union of Concerned Scientists (May 16, 2014), <http://blog.ucsusa.org/workplace-charging-good-for-business-and-a-chance-for-business-to-do-good-539>.

renewable energy into the grid and avoid an increased use of fossil fueled ramping resources. Commission policies should ensure adequate economic incentives for EVs – by properly valuing the grid services that EVs can provide, the Commission can bring them onto the grid in a useful way on an increasingly large scale. As this pilot could help in this regard, the Commission should ensure that this pilot is coordinated with the EV docket to inform the proper valuation of VGI resources and potential delivery mechanisms of that value.

2. The Commission should ensure that safety, environmental, and health benefits are important considerations that should be coordinated with the EV docket.

As recognized by the Commission in the EV docket Scoping Memo, “it is the Commission’s responsibility to examine the public safety and health impact of utility programs for which we have oversight authority” – which includes grid safety and reliability, environmental, and health benefits.⁵ As discussed above, proper valuation of VGI resources can go a long way towards ensuring grid safety and reliability, and is an element that should be considered in evaluating SDG&E’s pilot – as well as informing the EV docket.

In addition, EVs hold potential to greatly reduce emissions of harmful pollutants. By eliminating tailpipe emissions,⁶ EVs can significantly cut greenhouse gases from the transportation sector, which is responsible for the largest percentage of emissions in the state. At the same time, toxic and criteria air pollutant emissions, such as oxides of nitrogen, hydrocarbons, and benzene can be avoided.⁷ This, in turn, will have concomitant health benefits

⁵ Order Instituting Rulemaking to Consider Alternative-Fueled Vehicle Programs, Tariffs, and Policies, R. 13-11-007 at 11 (filed Nov. 14, 2013).

⁶ U.S. Department of Energy Alternative Fuels Data Center, *Benefits and Considerations of Electricity as a Vehicle Fuel*, http://www.afdc.energy.gov/fuels/electricity_benefits.html.

⁷ See, e.g., RA Morello-Frosch, et al., *Air Toxics and Health Risks In California: The Public Health Implications of Outdoor Concentrations*, 20 Risk Anal. 273 (Apr. 2000), <http://www.ncbi.nlm.nih.gov/pubmed/10859786>; motor vehicles, in combination with area and natural sources, estimated by ARB to emit more than 62.5 million pounds of toxic air contaminants a year in San Diego County alone, San Diego County Air Pollution Control District, *2012 Air Toxics “Hot Spots” Program Report for San Diego County* (Dec. 4, 2013), http://www.sdapcd.org/toxics/toxics_12_rpt.pdf.

– as fewer pollutants are emitted into the air, the resulting health impacts, such as respiratory disease and heart disease, will also decrease in frequency.

However, depending on the source of the electricity, EVs can be the cause of a not insignificant amount of emissions over their lifecycle. The Commission should ensure the maximization of preferred resources, such as renewable energy, demand response (including TOU rates), as well as energy storage, are all utilized to the greatest extent possible to reduce EV emissions. The VGI pilot may provide valuable insight into how EV charging can affect safety, health, and the environment – it will thus be necessary to coordinate with the EV docket to ensure that its efforts in this regard are considered in evaluating its efficacy and informing future EV policy.

3. The Commission must evaluate the relative costs and benefits of utility ownership of infrastructure.

One of the more pervasive issues in this pilot and the EV docket is ownership of charging infrastructure.⁸ The Commission has recognized this as a central issue in Phase 1 of the EV docket, and is soliciting comments on whether the Commission should “consider an increased role for the utilities in PEV infrastructure deployment.”⁹ Because infrastructure ownership is a central component of SDG&E’s pilot, it is important that the Commission coordinate discussion of this issue in the context of the pilot with the EV docket.

EDF agrees with NRDC’s comments in the EV docket that “it is premature to preclude any potential actor in this emerging and broad space [including utilities].”¹⁰ If, as SDG&E

⁸ For example, in the VGI pilot, ORA is adamantly against utility ownership of infrastructure, while ChargePoint is more amenable. In the EV docket, NRG Energy is opposed to the idea of revisiting prohibitions against utility-owned infrastructure, while NRDC is not necessarily against this idea.

⁹ Order Instituting Rulemaking to Consider Alternative-Fueled Vehicle Programs, Tariffs, and Policies, R. 13-11-007 at 13 (filed Nov. 14, 2013).

¹⁰ Natural Resources Defense Council, *Comments of the Natural Resources Defense Council on Order Instituting Rulemaking to Consider Alternative-Fueled Vehicle Programs, Tariffs, and Policies*, R. 13-11-007 at 5.

claims, prospective EV users need enhanced workplace and multi-unit dwelling infrastructure and that EV penetration is suffering from a market failure,¹¹ then the Commission should consider allowing either direct utility or subsidiary ownership of equipment. However, we recommend that the Commission also determine the extent and characteristics of the market failure and assign transparent values to the services provided to the grid from well-timed EV charging in order to support both utility / utility subsidiary and third party ownership.

III. TIMING

EDF does not have any comments on the schedule of this proceeding at this time.

IV. CONCLUSION

EDF thanks the Commission for the opportunity to comment in this proceeding and looks forward to following the development of this pilot.

Respectfully signed and submitted on August 8, 2014.

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¹¹ San Diego Gas & Electric, *Application of San Diego Gas & Electric Company (U902E) for Approval of its Electric Vehicle-Grid Integration Pilot Program*, A. 14-04-014 at 2.