

**BEFORE THE PUBLIC UTILITIES COMMISSION  
OF THE STATE OF CALIFORNIA**

In the Matter of the Application of the  
Pacific Gas and Electric Company for  
Approval of its Electric Vehicle  
Infrastructure and Education Program.

Application 15-02-009

(Filed February 9, 2015)

**RESPONSE OF THE CLEAN COALITION**

Enrique Gallardo  
Policy Director

Brian Korpics  
Policy Manager

Kenneth Sahm White  
Director, Economic & Policy Analysis

Clean Coalition  
16 Palm Ct  
Menlo Park, CA 94025  
(708) 704-4598  
brian@clean-coalition.org

March 13, 2015

**BEFORE THE PUBLIC UTILITIES COMMISSION  
OF THE STATE OF CALIFORNIA**

In the Matter of the Application of the Pacific Gas and Electric Company for Approval of its Electric Vehicle Infrastructure and Education Program.

Application 15-02-009

(Filed February 9, 2015)

**RESPONSE OF THE CLEAN COALITION**

**I. INTRODUCTION**

The Clean Coalition responds to the Application in this proceeding, pursuant to Rule 2.6 of the California Public Utilities Commission (“Commission”) Rules of Practice and Procedure. This application first appeared in the Commission’s Daily Calendar on February 11, 2015. Thus, this response is filed in a timely manner within thirty days of that date.

Pacific Gas and Electric Company (“PG&E”) proposes to play a significant role in supporting the growth of electric vehicles (“EV”) in California, by deploying EV charging stations, as part of its Electric Vehicle Infrastructure and Education Program (“EV Program”). The Clean Coalition seeks to intervene in this proceeding to ensure that the planning of the EV Program recognizes the full potential of EVs as a distributed energy resource (“DER”). In order to optimize the use of EVs as a DER, the development of the extensive grid infrastructure to support the EV Program should be planned in harmony with PG&E’s distribution resources planning, currently underway in R.14-08-013. The distribution resources planning will demonstrate locations where EVs may provide optimal grid benefits. EV deployment should also be coordinated with other efforts involving the planning of demand side resources, such as the work taking place in developing Load Modifying or Supply Resource Demand Response in R.13-09-011, and in developing Integrated Demand Side Management in R.14-10-003.

EVs are an important resource, and the infrastructure deployed to support EVs may also be offer significant and cost effective support for the development of other DER. Infrastructure

deployment should not be narrowly focused on the needs of the EV charging stations merely as new load, but as a visible and controllable demand side resource. The deployment of infrastructure as part of the EV Program should recognize opportunities to synergistically deploy infrastructure that also support increased DER, outside of the EV Program. The investment in EV infrastructure in coordination with distributed generation and other DER can enhance the value of each while reducing the costs associated with either deployed individually.

## **II. DESCRIPTION OF THE PARTY**

The Clean Coalition is a nonprofit organization whose mission is to accelerate the transition to renewable energy and a modern grid through technical, policy, and project development expertise. The Clean Coalition drives policy innovation to remove barriers to procurement and interconnection of DER – such as local renewables, advanced inverters, demand response, and energy storage – and we establish market mechanisms that realize the full potential of integrating these solutions. The Clean Coalition also collaborates with utilities and municipalities to create near-term deployment opportunities that prove the technical and financial viability of local renewables and other DER.

## **II. RESPONSE TO THE APPLICATION**

### *a. EV Deployment Should Be Coordinated with Distribution Resources Planning.*

With this Application, PG&E proposes to become a major participant of the EV industry within its service territory, by deploying and owning an extensive network of EV charging stations. The Clean Coalition welcomes PG&E proposal to take this role in supporting the deployment of EVs in California. As recognized in D.14-12-079, the large California electric utilities are well-situated to play an important role in supplying infrastructure. While the proposed ownership of charging stations by the utility raises important concerns that should be more fully addressed, PG&E's proposal may advance goals for EV deployment in California, such as the goals expressed in Governor Brown's recent inaugural address concerning a 50% reduction in petroleum use in transportation by 2030.

In conjunction with the Governor's goal of reducing pollution from the transportation sector, Governor Brown also expressed the goal of increasing electricity derived from renewable

sources from one-third to 50% of California's portfolio. The Governor discussed some of the ways of achieving his ambitious agenda of reducing carbon pollution and greenhouse gases ("GHG"):

I envision a wide range of initiatives: more distributed power, expanded rooftop solar, micro-grids, an energy imbalance market, battery storage, the full integration of information technology and electrical distribution and millions of electric and low-carbon vehicles.<sup>1</sup>

The deployment of EVs forms part of the Governor's pollution and GHG reduction goals. The Commission and PG&E should seek to achieve synergies in advancing these goals. The deployment of EVs and the distribution infrastructure needed to support EVs can also advance and support greater DER, while integrated DER planning can reduce the infrastructure and load impacts of EV expansion to benefit ratepayers. PG&E's application for the EV Program comes at an opportune time in terms of fully recognizing the benefits that EVs and supporting infrastructure may provide, in terms of harmonizing EV deployment with distribution resources planning.

The legislature passed AB 327 in 2013, which directed electrical corporations to develop, by July 1, 2015, distribution resources plans "to identify optimal locations for the deployment of distributed resources."<sup>2</sup> EV infrastructure investments should be a coordinated part of this distribution resources planning process. The legislature explicitly included EVs in its definition of "distributed resources."<sup>3</sup> As part of distribution resources planning, the legislature directed the electrical corporations, among other things, to:

(3) Propose cost-effective methods of effectively coordinating existing commission-approved programs, incentives, and tariffs to maximize the locational benefits and minimize the incremental costs of distributed resources.

(4) Identify any additional utility spending necessary to integrate cost-effective distributed resources into distribution planning consistent with the goal of yielding net benefits to ratepayers.

---

<sup>1</sup> Governor Edmund G. Brown Jr. Inaugural Address Remarks as Prepared, January 5, 2015, available at <<http://gov.ca.gov/news.php?id=18828>>.

<sup>2</sup> Cal. Pub. Util. Code § 769(b).

<sup>3</sup> See Cal. Pub. Util. Code § 769(a).

Thus, PG&E should seek to coordinate and integrate distributed resources as part of its planning, in order to yield net benefits to ratepayers. PG&E's EV Program proposals should be coordinated with the distribution resources planning, currently underway in R.14-08-013.

PG&E recognizes that EVs are a DER. PG&E's application states:

Finally, the EV charging infrastructure will support the delivery of CPUC-approved time-variant pricing, and also will create a platform and potential load for future smart charging programs which support integration of increased intermittent renewable energy on the State's electric power grid, ultimately enabling PG&E to use EV load for system-wide benefit.<sup>4</sup>

The Clean Coalition supports the potential of EVs as a DER, and the benefits of EVs should be maximized. This application should also explicitly consider the local distribution system benefits of EVs, and not limit consideration of benefits to those that may be categorized as "system-wide." The Demand Response Valuation Working Groups are recognizing that the value of local benefits may frequently exceed system-wide benefits, and the DRP process is aimed at identifying these opportunities. These potential benefits of EVs should be a component of this application, or alternatively, a component of the distribution resources planning process taking place in R.14-08-013.

PG&E proposes deployment of an extensive network of EV charging sites. The location of these sites and the DER benefits they may provide to a particular portion of the distribution grid are important considerations. The Commission and PG&E should consider the benefits that EVs could provide to a substation in terms of increased intermittent renewable energy. Following the directions of AB 327, the Commission should seek to maximize the benefits of the EV Program, providing a net benefit to ratepayers.

*b. Deployment of Infrastructure to Support EV Deployment Should Also Support Other Cost Effective DER.*

PG&E's application includes \$551 million in capital costs, mostly to fund the deployment of EV charging stations and the infrastructure needed to support the stations. With such a large request for capital, the Commission should seek to maximize the benefits that may

---

<sup>4</sup> Cal. Pub. Util. Code § 769(b).

be realized. As part of PG&E's distribution resources planning process and its planning for the deployment of the EV Program, PG&E should examine the distribution infrastructure needed to support the EV Program and seek to maximize the benefits in terms of supporting other DER. The infrastructure development for the EV Program comes at an opportune time, coinciding with PG&E's distribution resources planning. Due to the timing of these two proceedings, PG&E has the ability to examine its plans for infrastructure deployment needed for the EV Program alongside its distribution resources planning.

PG&E should take advantage of opportunities for synergy. For example, in some cases, infrastructure upgrades narrowly focused on the need to serve the needs of the EV Program could be re-considered with the potential for other DER in mind. It may be cost effective to plan for infrastructure improvements with both the EV Program and other DER in mind.

PG&E proposes to deploy 2,600 sites which contain 25,000 EV charging stations.<sup>5</sup> In addition to the charging stations themselves, PG&E proposes to invest extensively in distribution system upgrades to support the charging stations. PG&E seems to contemplate service connections dedicated exclusively to the EV charging stations. In testimony describing the "New Electric Vehicle Service Connection and Supply Infrastructure Design and Build," PG&E's witness states:

Once a site host and EV charging station location are selected, PG&E will design the infrastructure to provide dedicated electric service to that location by following PG&E's established procedures for new service connections. The service connection will be used exclusively for the charging infrastructure and will require dedicated meters and electric panels to the charging bank to ensure ease of operations and servicing of the site, while ensuring accurate billing for energy consumed at the charging stations.

The EV service connection and supply infrastructure includes the following elements:

- A utility pole or underground riser in proximity to the new charging station site in order to provide optimal access and a dedicated service drop that feeds the charging station.
- A transformer, typically pad-mounted, specified to expected load downstream at the charger equipment.

---

<sup>5</sup> See PG&E EV Program Prepared Testimony ("PG&E EV Program Testimony"), pp. 2-4:17 to 2-5:2.

- A dedicated SmartMeter™ and electric panel to monitor energy usage at the charging stations, and to facilitate accurate billing and energy usage reconciliation between PG&E and PG&E's EV service partners.
- Electrical conduits and conductor from the electric panel to the EV chargers.<sup>6</sup>

Additionally, PG&E estimates that approximately 40% of the transformers impacted by the EV Program may need to be replaced in order to accommodate the added load of the EV chargers.

Much of the infrastructure discussed here by PG&E, such as the SmartMeter and the electric panel, and all of the infrastructure downstream from the SmartMeter must be dedicated to the operation of the charging stations only. However, much of the infrastructure upstream from the SmartMeter may be infrastructure that could serve other needs besides just the charging stations. Concurrent with the deployment of the supporting infrastructure, PG&E should examine if the infrastructure upgrades it performs could also serve the deployment of future DER. Any upgrades planned in support of the EV charging program should be publically identified, and credited against upgrades otherwise allocated to complimentary DER so as to encourage and support its development.

*c. Infrastructure Deployment Should Facilitate the Interconnection of Other DER.*

In its application, PG&E discusses infrastructure deployment needed to support the deployment of EV charging stations. The EV charging stations will benefit from the supporting distribution infrastructure PG&E also requests as part of this application, as described above. The deployment of PG&E-owned EV charging stations will be facilitated by the application that also proposes the deployment of supporting infrastructure. Thus, the interconnection of the EV charging stations to the distribution grid will be facilitated and streamlined.

The related proceedings have identified both EV charging from the grid (V1G) and EV discharging to the grid (V2G) as important opportunities for the provision of grid services, and given appropriate initial priority to the more immediate opportunities associated with load modification associated with EV charging.

---

<sup>6</sup> PG&E EV Program Testimony, pp. 3-4:3 to 3-4:22.

In the context of the proposed infrastructure investment and related planning practices, The Clean Coalition recommends consideration be given to the anticipated future opportunity to utilize EVs as a two way resource, offering energy to the grid. These capabilities can significantly increase the value of this resource, reducing the need for alternative and effectively redundant resources to be procured. Allowing this value to be provided by EVs will not only reduce ratepayer costs, but will reduce the net cost of EV ownership and thereby promote more rapid adoption of EVs without reliance on subsidies.

While it is premature to implement V2G capabilities at this time, infrastructure design should explicitly anticipate this functionality and forward thinking planning should accommodate it whenever this can be accomplished without significant additional investment in order to avoid costly retrofit a few years in the future.

The Commission should use this application as an opportunity to encourage utilities to consider how the interconnection of other DER, besides EVs, can be simplified and facilitated. The Smart Inverter Working Group has made good progress in establishing related functions and standards, but as resources and services increasingly become available from the distribution edge of the grid and load customers also become energy or service providers, simplified approaches are needed. Currently, the development of much DER is made more difficult by uncertainty concerning the cost of interconnection, and prohibitive costs are frequently allocated to applicants for upgrades that were already needed and benefits which will accrue to other customers and uses. The Commission should take the opportunity of this application, in consort with the distribution resources planning proceeding, for distribution infrastructure development to allow for streamlined interconnection of DER.

### **III. PROCEDURAL MATTERS**

The Clean Coalition does not comment on the proposed procedural schedule or the need for evidentiary hearing. The Clean Coalition agrees with the categorization of this application as ratemaking.



The Clean Coalition consents to and prefers “email only” service. Service of notices, orders, and other correspondence in this proceeding should be directed to the Clean Coalition at the address set forth below:

Brian Korpics  
Policy Manager  
The Clean Coalition  
16 Palm Ct.  
Menlo Park, CA 94025  
Telephone: (708) 704-4598  
Email: brian@clean-coalition.org

### **III. CONCLUSION**

The Clean Coalition respectfully requests that the Commission consider its response to the application for PG&E’s EV Program, and maximize the system and pollution reduction benefits of PG&E’s request. The planning for PG&E’s EV Program should occur in concert with PG&E’s distribution resources planning. The deployment of infrastructure to support the EV Program should be planned with consideration of the benefits the infrastructure could provide to other DER.

Respectfully submitted,

/s/Enrique Gallardo  
Enrique Gallardo  
Policy Director  
Clean Coalition

March 13, 2015