



Together, Building  
a Better California

# Pacific Gas and Electric Company EV Charge Network Quarterly Report

Report Period: January 1, 2019 – March 31, 2019



# Table of Contents

PAGE

<b>1. Executive Summary</b>	<b>1</b>
1.1 EV Charge Network Program Overview	
1.2 Summary for Quarter	
<b>2. Customer Interest, Outreach, and Education</b>	<b>3</b>
2.1 EV Charge Network Applications	
2.2 Sales and Marketing	
2.3 Online Tools & Resources	
2.4 Customer Experience and Satisfaction	
<b>3. Electric Vehicle Supply Equipment Procurement</b>	<b>8</b>
3.1 Procurement Process	
3.2 RFQ – EV Charge Owner Options	
3.3 RFP – EV Charge Sponsor Options	
3.4 Procurement Next Steps	
<b>4. Charger Utilization and Load Management</b>	<b>10</b>
4.1 Charger Utilization	
4.2 Load Management Plan	
4.3 Load Management Data	
<b>5. Program Operations</b>	<b>12</b>
5.1 Summary of Approved Sites	
5.2 Construction	
5.3 Operational Metrics	
5.4 Program Costs	
<b>6. Supplier Diversity</b>	<b>14</b>
<b>7. Program Advisory Council Feedback</b>	<b>15</b>
<b>8. Conclusion</b>	<b>16</b>
<b>9. Appendix A</b>	<b>17</b>
9.1 Summary of Program Advisory Council Comments and PG&E Response	
9.2 Direct Program Advisory Comments	
9.3 Additional comments submitted by PAC stakeholder, provided verbatim	
<b>10. Appendix B</b>	<b>19</b>
<b>11. Appendix C</b>	<b>20</b>

# 1. Executive Summary

## 1.1 EV Charge Network Program Overview

PG&E's EV Charge Network (EVCN) program was approved on December 15, 2016 through a unanimous vote of the California Public Utilities Commission (Commission).<sup>1</sup> The purpose of the program is to increase access to charging for electric vehicles (EV) within PG&E's service territory. The program was approved to install up to 7,500 charging ports over a three-year period focusing on two key market segments: workplaces and multi-unit dwellings. The program includes deployment targets of 15% in Disadvantaged Communities (DACs) as well as in 20% in Multi-Unit Dwellings (MUDs).<sup>2</sup> These targets aid in facilitating market entry for previously underserved communities and market segments. For participating site hosts, the program is organized into two ownership options: "EV Charge Owner" and "EV Charge Sponsor."

**EV Charge Owner:** The majority of the electric vehicle service equipment (EVSE) (a minimum of 65%) will be owned by site hosts who are PG&E non-residential customers that have EV charging stations installed on their property. All site hosts may choose to participate under this program option. For these installations, PG&E will install and maintain the EV service connection (make ready infrastructure) to support their use. The site host will be responsible for buying and installing the EV charging stations. At these locations, rebates will be offered to site hosts for the EV charging stations. The rebates will be paid after the charging stations are installed and operational.

**EV Charge Sponsor:** At the discretion of the individual site host, PG&E may be requested to install, own, and maintain up to 35% of the EV charging stations deployed. These EV charging stations will be installed in a turnkey operation to maximize site host convenience. EV Charge Sponsor site hosts must be multi-unit dwellings (MUDs) or workplaces located in disadvantaged communities (DACs).

## 1.2 Summary for Quarter

The following section provides a brief summary of the milestones and actions performed throughout the quarter. This includes EV adoption in PG&E's service territory, program participant interest, a summary of the Program Advisory Council (PAC) meeting, program milestones, and key barriers to implementation.

### EV Adoption in PG&E Service Territory

The EV Charge Network program intends to support the adoption of EVs in PG&E territory by providing the infrastructure to support adequate charging and remove obstacles to adoption.

PG&E offers two residential EV rates for customers who own an EV. Both rates are time-of-use (TOU) rates and vary based on time of day. The EV-A rate combines the customer's EV electricity use with the main household consumption on the same meter whereas the EV-B rate tracks EV electricity consumption separately from household use through a new meter dedicated to the charging equipment. At the end of Q1 2019, 55,969 PG&E customers were enrolled in the EV-A rate and 366 customers were enrolled in the EV-B rate.

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1. The Commission approved the EV Charge Network in D 16-12-065.
  2. Disadvantaged Communities are defined as the top 25% most impacted census tracts within PG&E's service territory per the CalEnviroScreen3.0, or the latest version.



### Program Participation Interest

PG&E officially launched the EV Charge Network program in January 2018. However, the program has been operating under a soft launch since late October 2017 when the online application was made available. PG&E has experienced steady interest from customers applying for participation in the EVCN program. Figure 1.1 shows the cumulative number of submitted and approved applications through Q1 2019; Figure 1.2 shows the cumulative number of submitted and approved ports through Q1 2019 (note that submitted ports is an estimate).

FIGURE 1.1 CUMULATIVE NUMBER OF APPLICATIONS SUBMITTED AND APPROVED THROUGH Q1 2019

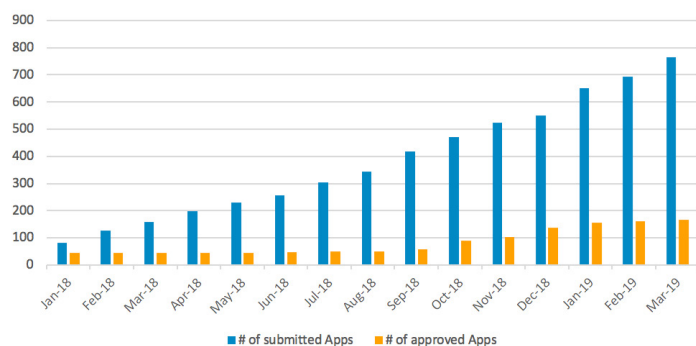
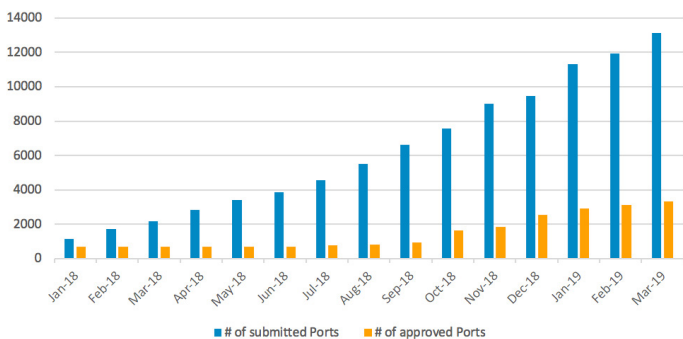


FIGURE 1.2 CUMULATIVE NUMBER OF PORTS SUBMITTED AND APPROVED THROUGH Q1 2019



Submitted ports are conservative rough estimates since not all applications receive precise port counts before cancellation.

As of March 31, 2019, PG&E had received 765 applications. At the close of Q1 2019, 167 sites representing 3,312 ports had signed agreements with customers<sup>3</sup>. A total of 269 applications had been waitlisted or cancelled. More details on submitted applications can be found in section 2 and on approved/ in-progress sites in section 5 of this report.

### Program Advisory Council (PAC)

On March 27, 2019, PG&E held the Q1 2019 Program Advisory Council meeting. Beginning in 2018, PG&E expanded the focus of the PAC meeting to address broader clean transportation programs and initiatives, creating the Clean Transportation Program Advisory Council. The Q1 2019 PAC meeting provided an update on the EV Charge Network program along with PG&E's Priority Review Projects (Home Charger Information Resource Pilot, Electric School Bus Renewables Integration, Idle Reduction Technology, and Medium/ Heavy Duty Fleet Customer Demonstration) and Standard Review Projects (EV Fleet and Fast Charge programs).

Individuals from nearly 30 organizations, representing stakeholders from industry, government, and non-profits, attended in-person and online. The meeting's objective is to inform an external audience on the progress of the various infrastructure programs authorized by the CPUC. More details on the Q1 2019 PAC meeting can be found in Section 7 and the Appendix of this report.

3. As of the end of Q1 2019, 167 applications had been approved and were still in an active stage of the program; i.e., this total excludes applications that were approved but then later waitlisted or cancelled.

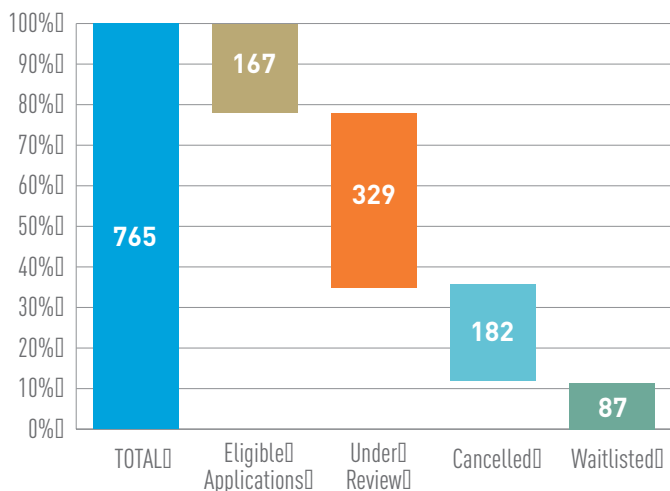


## 2. Customer Interest, Outreach, and Education

### 2.1 EV Charge Network Applications

Since launch of the EV Charge Network program website and online application in Q3 2017, PG&E received a total of 765 applications through Q1 2019. Figure 2.1 shows the total number of applications received and the number of applications in each stage at the end of Q1 2019.

FIGURE 2.1 SUMMARY OF APPLICATION STATUS THROUGH Q1 2019



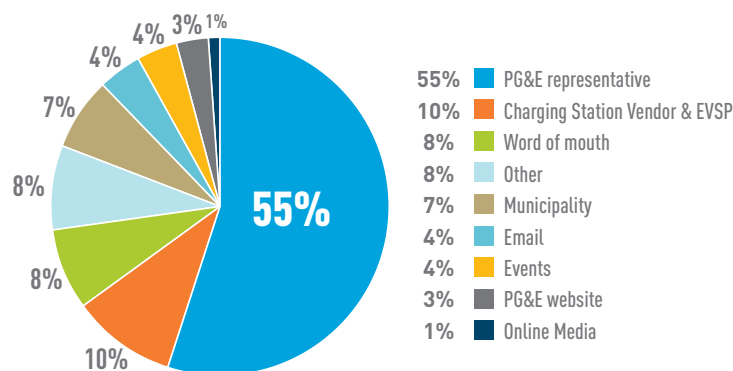
In Q1 2019, the EVCN program received interest from a range of sites, with most new applications continuing to come from workplaces. However, MUDs did make up a considerable percentage driven by portfolio customers (customers submitting multiple sites for infrastructure investment), the MUD share of applications was 26% at the end of Q1. There was also a continued preference for the EV Charge Owner option demonstrated by applications submitted in Q1. Table 2.2 shows the breakdown of property type, disadvantaged community status, and program participation across all applications received through Q1.

TABLE 2.2 APPLICANT PROFILE THROUGH Q1 2019

	NUMBER OF APPLICATIONS	PERCENT OF APPLICATIONS
<b>PROGRAM PARTICIPATION</b>		
EV Charge Owner	590	77%
EV Charge Sponsor	175	23%
<b>PROPERTY TYPE</b>		
MUD	197	26%
Workplace	568	74%
<b>DISADVANTAGED COMMUNITY STATUS</b>		
Disadvantaged Community (DAC)	197	26%
Other PG&E Territory	568	74%
<b>CROSS SECTION (Applications)</b>		
	DAC [% of Grand Total]	NOT IN DAC [% of Grand Total]
MUD	42 (5%)	155 (20%)
WORKPLACE	155 (20%)	413 (54%)
Sub Total	197	568

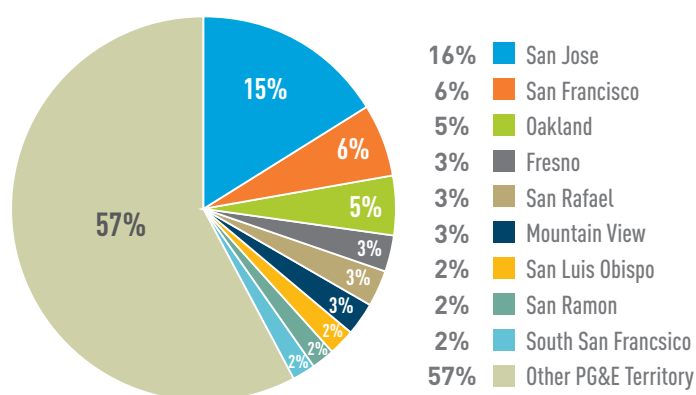
Applicants reported hearing about the EVCN program from various sources. In Q1, PG&E’s Sales team continued their outreach, though it significantly ramped down, and represented the largest source of incoming lead generation, bringing in over 55% of program applications through Q1 2019. Figure 2.3 depicts how applicants reported hearing about the EVCN program on the online application.

FIGURE 2.3 EVCN PROGRAM APPLICANT SOURCE OF PROGRAM KNOWLEDGE THROUGH Q1 2019



Beginning in Q4 2018, PG&E expanded the targeted geography approach to include multiple other bay area cities including: Berkeley, San Ramon, Pleasanton, Milpitas, South San Francisco, Burlingame, and Menlo Park. The geographic focus also expanded outside to other strategically valuable locations including Vacaville, Bakersfield, and Santa Cruz. Figure 2.4 depicts the geographic areas of applicants who submitted applications to EVCN.

FIGURE 2.4 EVCN PROGRAM APPLICANT PROFILE BY GEOGRAPHIC AREA THROUGH Q1 2019



Approximately 24% of submitted applications were cancelled through the end of Q1 for various reasons. The two primary causes for cancellation are the customer withdrawing interest or the project was determined to be cost prohibitive for the program budget and goals:

- **Customer Withdrawal:** PG&E has observed several reasons for the customer withdrawing including being unable to meet the port number requirements or a change in priorities/customer becoming unresponsive.
- **Cost Prohibitive:** Sites that were cancelled due to costs faced a variety of challenges including trench length, transformer size, parking location, as well as other environmental factors.

## Q1 2019 Program Milestones

- **Surge of Applications Received.** During the quarter, PG&E continued to process the significant growth in applications submitted. Approximately 215 applications totaling ~3,600 ports were submitted in Q1 of 2019.
- **Halted Customer Outreach.** PG&E halted its targeted outreach in Q1 given the large surge in program applications. Prior outreach, including efforts from our Marketing, Business Energy Solutions (BES), and Public Affairs teams, clearly produced a sizable increase in the number of submitted applications which continued into Q1 2019 without continued marketing efforts.

## Q1 2019 Challenges and Lessons Learned

- **Time and Consistency Challenges with Permitting.** The construction team is seeing an average of at least 6 weeks for a permit to be issued and in one case as long as 21 weeks. Also, the construction team received inconsistent requirements from the various jurisdictions creating redesign and additional cost. Agencies specifically varied on ADA requirements and expectation of bringing existing facilities up to code. Strategies that PG&E has implemented to mitigate these issues included conducting training with the Division of State Architects and developing a comprehensive design template capturing all the feedback from various agencies as well as other lessons learned.
- **Experiences with Several Unexpected Design Changes.** The construction team uncovered unforeseen field conditions, changes initiated by customers, and ADA changes from permitting jurisdictions as mentioned above. Design changes cause delays and additional cost for the program. PG&E focused on implementing improvements during site eligibility to address some of these lessons learned including looking at a revised site walk approach that was instituted in January 2019.

## 2.2 Sales and Marketing

In Q1 2019, PG&E halted marketing and customer acquisition due to the large influx of applications. PG&E continues to work with our partners to communicate project status and program subscription levels through the quarter. Partners, especially on a local level, are key stakeholders that serve as advocates for the program. Sample partners include local non-profits/working groups, community choice aggregators, local governments, and trade associations. They can be very helpful in providing venues for PG&E to discuss EV charging opportunities with their constituents, offering additional funding sources that further bring down costs for customers, and, in some cases, become customers themselves.

## 2.3 Online Tools & Resources

As of the end of Q1 2019, the EV Charge Network program website has the following tools and resources to assist customers in their decision-making process.

- The website hosts an integrated [cost calculator tool](#) that helps customers understand the incentives and ownership options they are eligible for, and projects one-time and annual program costs for each ownership option based on inputs that the customer selects. Customers can use PG&E's established ranges for each cost, or can enter costs provided in vendor quotes. Customers can edit their cost inputs to understand their obligations under different scenarios.

### Your costs

Your ownership option(s) and approximate costs to participate in EV Charge Network are below. Change the values entered above and hit CALCULATE again if you want to get costs for other scenarios.

Costs shown are estimates and your actual costs may vary. PG&E makes no guarantee of these costs.

#### EV Charge Owner

##### How it Works

PG&E pays for and owns the infrastructure from the pole to the parking space. You purchase chargers from one of our approved program vendors and pay for their installation. You own the chargers and are responsible for their ongoing maintenance. PG&E provides a rebate, the amount of which depends on your customer segment (workplace or MUD; in a disadvantaged community or not). You pay for electricity to the chargers, but can choose to recover some or all of these costs from EV drivers.

🔌 Your net upfront cost: \$19,200

🔌 Your net annual cost: \$2,100

#### EV Charge Sponsor

##### How it works

PG&E pays for and owns the infrastructure from the pole to the parking space. You select chargers from a limited list of vendors, and PG&E buys, installs, owns and maintains the chargers. You submit a participation payment, the amount of which depends on your customer segment (workplace or MUD; in a disadvantaged community or not) and the cost of the chargers you selected. You pay for electricity to the chargers, but can choose to recover some or all of these costs from EV drivers.

🔌 Your net upfront cost: \$16,200

🔌 Your net annual cost: \$0

#### EV CHARGE OWNER UPFRONT COST DETAILS

	Upfront cost	Paid by	Your upfront cost
Infrastructure	\$100,000	PG&E	\$0
Chargers	\$30,000	You to vendor	\$30,000
Installation	\$3,000	You to vendor	\$3,000
Rebate	\$13,800	PG&E to you	(\$13,800)
Your net upfront cost			\$19,200

#### EV CHARGE SPONSOR UPFRONT COST DETAILS

	Upfront cost	Paid by	Your upfront cost
Infrastructure	\$100,000	PG&E	\$0
Chargers	\$30,000	PG&E	\$0
Installation	\$3,000	PG&E	\$0
Participation payment	\$16,200	You to PG&E	\$16,200
Your net upfront cost			\$16,200





- A [Rate Adder Tool](#) helps customers implement their pricing for drivers if they select the Pass-Through pricing option. In this option, drivers receive the A-6 or A-10 time-of-use (TOU) rate for the time during which they choose to plug in. The tool allows customers to calculate a “rate adder”, which will distribute the non-energy charge components of the customer’s rate (e.g. demand charge, customer charge) among the estimated electricity consumed from the chargers as a dollar per kilowatt-hour amount. This adder can be added directly to the customer’s TOU energy rates implemented at the chargers, to be passed through to drivers. This will allow customers to more accurately recover the total amount of their electricity bill from drivers.

**A-6 RATE PLAN, 10 CHARGERS**

Average usage for each charger	Suggested add-on price per kWh
Low (2 hours per day)	\$0.005
Medium (6 hours per day)	\$0.002
High (10 hours per day)	\$0.001

- PG&E also launched the “EV Savings Calculator”, also known as the Total Cost of Ownership (TCO) Tool. The goal of the TCO Tool is to reduce EV ownership cost research time by providing residential customers with a tool that is quick, easy to use, and provides an accurate cost breakdown of owning an EV. The tool captures total cost of ownership, available EV incentives, and a match score to help users find the right EV for them. PG&E launched the tool at the end of 2018 and enhancements will be deployed in Q2 2019. The tool is available at [ev.pge.com](http://ev.pge.com).

The screenshot displays the PG&E EV Savings Calculator interface. On the left, there are filter controls for 'Refine Match Score' (Roundtrip Commute: 30 Miles, Budget After Incentives: \$24,000, Minimum Seats: 4, Home Charging Availability: Level 2) and 'Filter' (Fuel: All-Electric, Type: Sedan, Hatchback, Coupe, Crossover, Minivan, SUV). The main area shows a grid of six EV models with their match scores and prices:

Model	Electric Range	MSRP	After Incentives	Match Score
Chevrolet Bolt EV	238 miles	\$36,420	\$25,620	97
Nissan LEAF	150 miles	\$29,990	\$16,190	97
Volkswagen e-Golf	125 miles	\$30,495	\$19,695	95
Ford Focus Electric	115 miles	\$29,120	\$18,320	94
Hyundai Ioniq Electric	124 miles	\$29,500	\$18,700	94
Kia Soul EV	111 miles	\$33,950	\$23,150	93





## 2.4 Customer Experience and Satisfaction

PG&E is developing a customer satisfaction survey to be distributed to program participants after project completion. PG&E will report on this feedback when data is available.

## 3. Electric Vehicle Supply Equipment Procurement

### 3.1 Procurement Process

PG&E conducts a Request for Qualification (RFQ) and Request for Proposal (RFP) process to determine eligible EVSE packages that will be available to customers through the EV Charge Network program. The RFQ qualifies EV charging station vendors for the EV Charge Owner option and occurs on a quarterly basis. Vendors will continue to have the option to qualify EVSE packages every 3 months with quarterly RFQs. PG&E leveraged the RFP to qualify EV charging station vendors for the EV Charge Sponsor option, for which PG&E will own the charging equipment.

EVSE packages are inclusive of EVSE hardware, software, and network services. As in past quarters, the quarterly RFQ will identify additional vendors that offer EVSE packages that meet PG&E's minimum hardware, software, and network requirements. PG&E does not limit the list of vendors; all vendor EVSE packages that meet the minimum requirements will be approved.

### 3.2 RFQ – EV Charge Owner Options

PG&E completed the Q1 2019 RFQ for EVSE solutions which resulted in four vendors applying for qualification. The approved EVSE packages, including hardware, software, and network services are presented on PG&E's website to inform customers of vendor options, along with vendor contact information for further inquiry. Appendix C details the criteria all approved EVSE approved packages must meet.

The following are currently approved program vendors:

- ABM
- Andromeda Power LLC
- BTC Power (Broadband Telcom Power, Inc.)
- ChargePoint
- Electric MotorWerks, Inc.
- EV Connect
- EVBox
- EV Charge Solutions
- EVoCharge LLC
- EVSE LLC
- Greenlots
- Kitu Systems
- Liberty Plug-ins
- National Car Charging
- Op Connect
- Open Access Technology International, Inc. (OATI)
- PowerFlex Systems
- SemaConnect, Inc.
- Siemens
- Shell New Energies
- Tellus Power Inc.
- Verdek
- Video Voice Communications

### 3.3 RFP – EV Charge Sponsor Options

Vendors approved through the first RFQ in 2017 were eligible for the RFP. The RFP is designed to select vendor(s) for the EV Charge Sponsor portion of the program. Under this option, program participants may request PG&E to install, own, and maintain up to 35% of the EV charging ports deployed. The RFP process evaluates competitive price proposals for vendor EVSE packages to be offered under the EV Charge Sponsor option of the program. Vendors for the RFP must meet PG&E's minimum requirements for the RFQ process and will be evaluated on criteria including, but not limited to, price, quality of bid, supplier diversity, environmental commitment, and financial stability. PG&E has selected its first vendor, EVBox, through the RFP process and continues to evaluate remaining finalists.

### 3.4 Procurement Next Steps

As part of the RFP process, PG&E continues to evaluate remaining finalist vendors for the EV Charge Sponsor option after making its first selection of EVBox.



## 4. Charger Utilization and Load Management

### 4.1 Charger Utilization

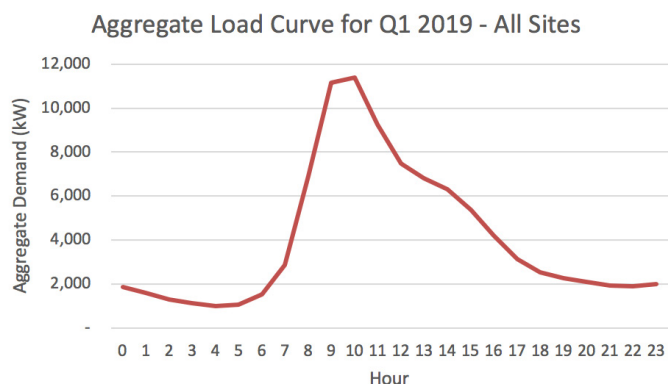
At the end of Q1 2019, a total of 40 sites were fully activated for driver use. The final construction and activation in Q4 and Q1 2019 brought the total MUD sites to 20 representing 50% of activated sites. Table 4.1 shows the summary of all active sites through Q1 2019.

TABLE 4.1 SUMMARY OF ACTIVATED SITES THROUGH Q1 2019

	NUMBER OF SITES	NUMBER OF PORTS	PERCENT OF PORTS
<b>PROGRAM PARTICIPATION</b>			
<b>EV Charge Owner</b>	<b>27</b>	<b>407</b>	<b>67%</b>
<b>EV Charge Sponsor</b>	<b>13</b>	<b>204</b>	<b>33%</b>
<b>PROPERTY TYPE</b>			
<b>MUD</b>	<b>20</b>	<b>305</b>	<b>50%</b>
<b>Workplace</b>	<b>20</b>	<b>306</b>	<b>50%</b>
<b>DISADVANTAGED COMMUNITY STATUS</b>			
<b>Disadvantaged Community (DAC)</b>	<b>6</b>	<b>88</b>	<b>18%</b>
<b>Other PG&amp;E Territory</b>	<b>27</b>	<b>397</b>	<b>82%</b>
<b>CROSS SECTION (Sites/Ports)</b>			
<b>MUD</b>		<b>0/0 (0%)</b>	<b>20/305 (50%)</b>
<b>Workplace</b>		<b>6/88 (14%)</b>	<b>14/218 (36%)</b>
	<b>SUB TOTAL</b>	<b>6/88</b>	<b>34/523</b>

PG&E continues to work with EV Service Providers (EVSPs) on collecting driver utilization data from its activated sites and will provide more detailed analyses (e.g., utilization by location and price, load profiles, etc.) once the sample size of the data increases. From the data collected thus far, however, PG&E can share load profiles for 40 activated sites. The aggregate load curves for all active sites (40 sites; 20 workplaces and 20 MUDs) in the EV Charge Network program are shown below. These shapes were developed based on cumulative PG&E meter data for all sites from January 1, 2019 through March 31, 2019. The data shown does not represent any particular day, but rather cumulative hourly data for all sites in the entire quarter. However, this provides a shape that is representative of charging patterns on a daily basis.

FIGURE 4.1 AGGREGATED LOAD CURVE FOR Q1 2019 CHARGER UTILIZATION



During Q1 2019, across the 22 out of 40 fully activated sites for which session data is currently being collected, there were 4,348 charging sessions. Average connection duration per session was 4 hours and 36 minutes, with average charging duration at 4 hours and 8 minutes. On average, ~12 kWh were consumed per session, and drivers spent an average of \$3.02 per charging session. PG&E is working with EVSPs to collect session data on the remaining activated sites.

### 4.2 Load Management Plan

Program participants who select the custom pricing option are required to participate in a load management plan to maintain the intent of a time-of-use rate in shifting energy consumption to times of low demand, and away from times of peak demand. PG&E will leverage its demand response (DR) pilots to call events to ask program participants to both increase and decrease EV charging load at certain times. In Q1 2019, PG&E coordinated with EVSPs to identify sites enrolled in custom pricing and is working towards ensuring such sites are enrolled into PG&E’s relevant DR pilot program.

### 4.3 Load Management Data

As data is made available, PG&E intends to provide data on Load Management Plan enrollment, events, and load impacts.



## 5. Program Operations

### 5.1 Summary of Approved Sites

Once an application is received, PG&E reviews the site for eligibility, evaluating site feasibility based on criteria including available electrical capacity, number of chargers to be installed, environmental risks, and estimated project costs on a per-port basis. If a site passes this eligibility review and a conceptual design of charger layout is approved by the program participant, it is approved for EVCN participation and is moved into design and pre-construction phases.

As of the end of Q1 2019, PG&E had received 765 applications, 167 of which were actively approved as eligible for EVCN program participation. The program is targeting 20% of sites to be at multi-unit dwellings (MUD) and 15% in disadvantaged communities. Table 5.1 depicts the breakdown of property type, disadvantaged community status, and program participation for applications approved through Q1.

TABLE 5.1 PROGRAM PARTICIPANT PROFILE – APPROVED SITES THROUGH Q1 2019

	NUMBER OF SITES	NUMBER OF PORTS	PERCENT OF PORTS
<b>PROGRAM PARTICIPATION</b>			
<b>EV CHARGE OWNER</b>	<b>120</b>	<b>2335</b>	<b>71%</b>
<b>EV CHARGE SPONSOR</b>	<b>47</b>	<b>977</b>	<b>29%</b>
<b>PROPERTY TYPE</b>			
<b>MUD</b>	<b>49</b>	<b>1019</b>	<b>31%</b>
<b>Workplace</b>	<b>118</b>	<b>2293</b>	<b>69%</b>
<b>DISADVANTAGED COMMUNITY STATUS</b>			
<b>Disadvantaged Community (DAC)</b>	<b>46</b>	<b>955</b>	<b>29%</b>
<b>Other PG&amp;E Territory</b>	<b>121</b>	<b>2357</b>	<b>71%</b>
<b>CROSS SECTION (Sites/Ports)</b>			
<b>MUD</b>	<b>DAC (% of Grand Total)</b>		<b>NOT IN DAC (% of Grand Total)</b>
	<b>11/378 (14%)</b>		<b>38/641 (25%)</b>
<b>Workplace</b>	<b>35/577 (22%)</b>		<b>83/1716 (66%)</b>
	<b>SUB TOTAL</b>		<b>46/955</b>
			<b>121/2357</b>

### 5.2 Construction

Once a project is approved for participation in the EV Charge Network program, PG&E assigns a Project Manager to connect with the customer and guide the site from design to activation. This includes coordinating with PG&E's competitively selected Engineer, Procure and Construct (EPC) vendor to complete the design, permitting, and construction for EV charging sites. At the end of Q1 2019, PG&E had a pipeline of 167 approved sites which represented 3312 ports<sup>4</sup> and provides a pipeline of construction through December 2019.

4. This excludes approved sites considered "at risk" of being waitlisted or cancelled.



### 5.3 Operational Metrics

Through the end of Q1 2019, PG&E had completed installation of 45 sites for the EVCN program. The following metrics reflect construction and installation of approved sites through March 31, 2019. Table 5.3 summarizes the number of approved and installed ports at the end of Q1. Figure 5.3 depicts the total number of ports installed by each EVSE primary vendor.

TABLE 5.3 SUMMARY OF NUMBER OF PORTS AND INSTALLATION

Number of total ports approved	3312
Number of ports installed	717
Average number of ports approved per site	20
Average number of ports installed per site	16
Average time for each installation step	Insufficient data to report in Q1 2019
Average total installation time	

### 5.4 Program Costs

In Q1 2019, PG&E spent roughly \$8.5 million for a total program spend of roughly \$36.3 million out of the \$130 million authorized budget. Figure 5.4 details Q1 2019 program spend for each of the categories, Administration and Program Implementation; Marketing, Education, and Outreach; IT Projects; Engineering and Construction, and Procurement. Table 5.4 provides a summary of program costs to date, and percent of allocated budget spent.

TABLE 5.4 SUMMARY OF 2018 PROGRAM SPEND

	Program to Date Forecast	Program to Date Spend	% of Year to Date Forecast
Total Program Cost through Q1 2019	\$35,405,181	\$36,282,468	102%
Total Completed Construction Cost (including To-the-Meter, Behind-the-Meter, & Rebate)	\$10,038,000	\$11,653,141	116%
Average Cost per Port (including To-the-Meter, Behind-the-Meter, Final Design, Permitting & Rebates).	\$14,000	\$17,956	128%
Charger Cost per Port	\$985	\$918	93%
Total Rebate Reserved	\$2,920,648	\$342,700	12%

FIGURE 5.3  
NUMBER OF PORTS INSTALLED BY EVSE PRIMARY VENDOR

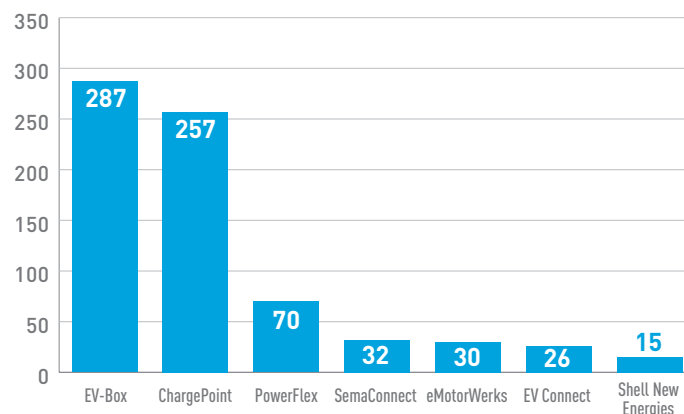
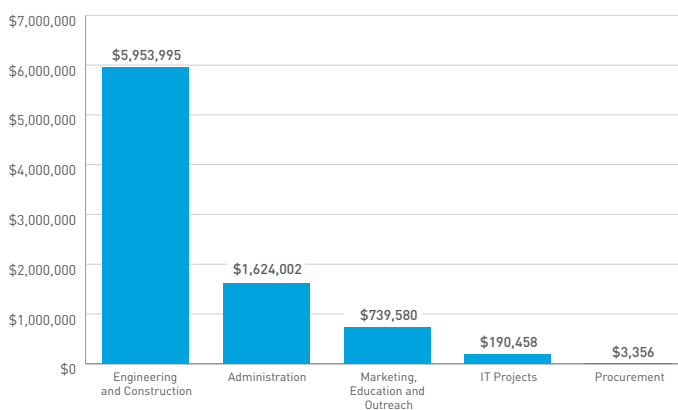


FIGURE 5.4 EVCN Q1 2019 PROGRAM SPEND

Design and installation costs are included within Engineering & Construction in Q3 & Q4 2018. In Q1 & Q2 2018 those costs were included within Administration & Program Implementation





## 6. Supplier Diversity

PG&E is committed to diversity in the workplace and with the companies with which we do business. Our Supplier Diversity program provides vital opportunities for businesses owned by women, minorities, service-disabled veterans and lesbian, gay, bisexual and transgender (LGBT) individuals. Supplier diversity will be scored as part of the RFQ and RFP process for the EV Charge Program and will be incorporated in any contracts for services as part of this program.

## 7. Program Advisory Council Feedback

The first PAC meeting of 2019 was held on March 27, 2019 and included a diverse group of stakeholders. Nearly 30 organizations attended, including representatives from the EV charging station industry, non-profits, government entities and community choice aggregators. PG&E captured stakeholder comments during the meeting and also collected feedback by email submission after the meeting. PG&E has provided responses to the questions and comments in Appendix A.

## 8. Conclusion

At the end of Q1 2019 PG&E had completed construction of 45 sites (40 of which were fully activated for driver use) representing a total of 717 ports installed (611 fully activated). The program had a total of 167 approved applications, securing 3,312 ports that are working through design and will be supporting a construction pipeline through December 2019. The composition of the program's applicant and approved site pool represent a healthy pipeline in supporting the Commission's targets for Disadvantaged Communities, Multi-Unit Dwellings, and program ownership options. As PG&E collects more data on driver utilization and the results of its outreach strategies, this information will be shared in future reports. PG&E will continue to identify opportunities for process improvement while ensuring a positive customer experience.

PG&E values the feedback and input stakeholders have provided through the Program Advisory Council meetings, and looks forward to continued collaboration with participants.

## 9. Appendix A

### 9.1 Summary of Program Advisory Council Comments and PG&E Response

The following PAC members provided comments during the meeting regarding the EV Charge Network program:

PAC MEMBER NAME	PAC MEMBER ORGANIZATION
Ben Cooper	StopWaste
Ziga Ivanic	Energetics
Philip Kreycik	Cadmus
Noel Crisostomo	California Energy Commission
Brett Wiley	Marin Clean Energy
Audrey Neuman	California Public Utilities Commission
Hiromi Kelty	City of Palo Alto Utilities
Christina Jaworski	VTA
Jane Chipman	EV Alliance / ZNE Alliance
Henry Ahern	Shell
Noel Crisostomo	California Energy Commission
Henry Ahern	Shell

### 9.2 Direct Program Advisory Comments

The table below describes the comments received from PAC members and PG&E's response.

QUESTION	PG&E RESPONSE
Can you provide specific attrition rates by sector?	PG&E has not conducted this analysis to date at the sector level.
How many total ports does PG&E anticipate installing?	PG&E is currently planning to install approximately 4,500 ports by the end of 2020.
What types of customers have the highest number of ports per site?	We are finding that workplaces have the highest number of ports per site.
Is PG&E installing more dual port chargers to capture economies of scale?	Generally, if a selected vendor offers a dual port solution, that is installed at the site.

QUESTION	PG&E RESPONSE
Can you speak to economies of scale considering the number of ports/site to date?	Smaller sites that increase the number of ports often show economies of scale; when more upgrades are needed at the site, overall costs go up.
Do activated sites go on Plugshare?	PG&E does not post the sites on Plugshare as part of the EVCN process.
Any data on sponsor vs owner in MUD and DAC?	Yes, we can provide this data in future. Most MUDs are selecting sponsor.
Do you have utilization data available?	We plan to report utilization data as available in Quarterly Reports over the lifetime of the program.
What's the likelihood that a customer who submits an EVCN application in Q2 2019 will be able to make it to construction? How does PG&E queue or waitlist applications?	The likelihood is low given our current subscription levels. We are closing the application in Q2 and will convert it to an interest list. Customers are waitlisted in some cases to allow us to better understand open questions about site eligibility, customer unresponsive or in the case that a customer loses interest in program participation.
When do you expect PG&E will stop accepting new applications?	We will stop accepting new applications in Q2, 2019. An interest list will be made available to interested customers.

### 9.3 Additional comments submitted by PAC stakeholder, provided verbatim

**Organization:** Public Advocates Office

**Organization representative:** Fidel A. Leon Diaz

**Organization representative title:** Utilities Engineer

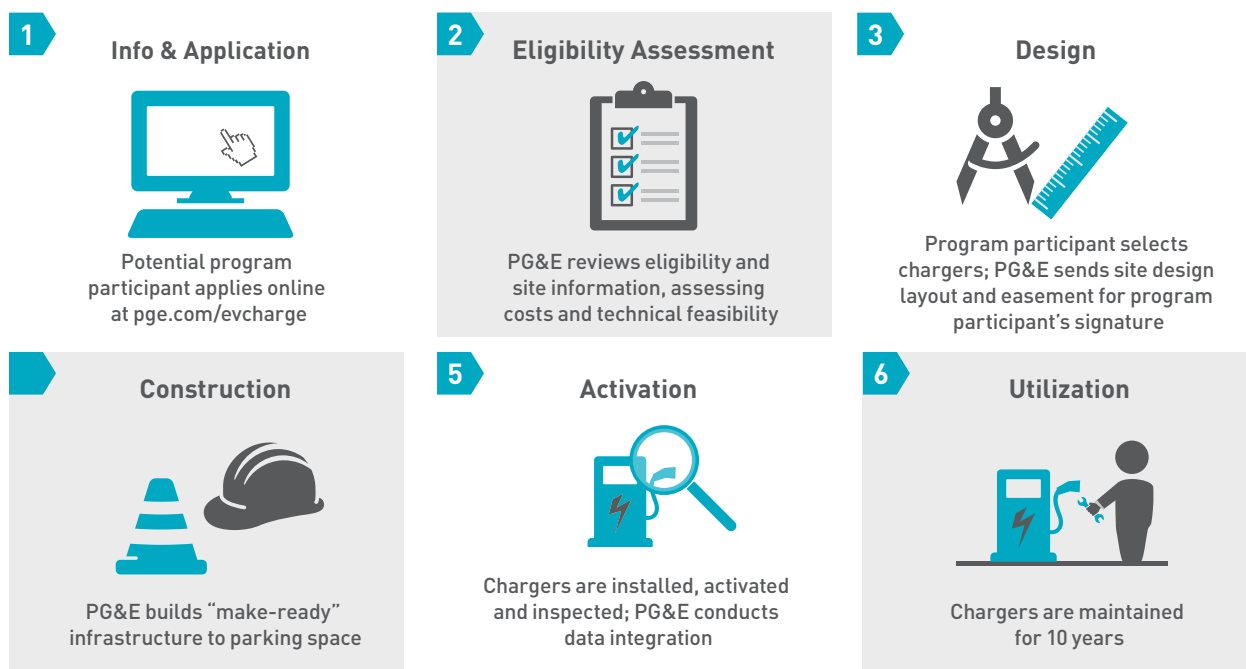
In D.16-12-065, the Commission approved PG&E's application for its EV Charge Network (EVCN) Program: a three year, \$130 million program budgeted for the installation of 7,500 electric vehicle (EV) charging ports in multiunit dwellings (MUDs) and workplaces. At the March 27, 2019 Program Advisory Council (PAC) meeting, PG&E stated that it projected installing 4,500 ports by the end of 2020. Given that EVCN officially launched in January of 2018, EVCN would reach its end in January of 2021 with only 60% (4,500 out of 7,500) of the budgeted ports installed. What is the reason that PG&E projects that it will only install 60% of the ports the EVCN budget was approved for?



## 10. Appendix B

PG&E has established a six step process that guides customers through the EV Charge Network program.

- 1. Info & Application:** Potential program participants apply online at [www.pge.com/evcharge](http://www.pge.com/evcharge).
- 2. Eligibility Assessment:** PG&E reviews eligibility and site information, assessing costs and technical feasibility.
- 3. Design:** If the site is approved, the program participant selects their chargers, and PG&E sends the site design layout and easement for signature. If the program participant is an EV Charge Owner, they submit their proof of purchase for the chargers; if an EV Charge Sponsor, they submit their participation payment.
- 4. Construction:** PG&E builds the “make-ready” infrastructure to the parking spaces.
- 5. Activation:** Once construction is complete, chargers are installed, activated and inspected, and PG&E conducts data integration. If the program participant is an EV Charge Owner, PG&E issues the rebate
- 6. Utilization:** The chargers are maintained for the life of the program (10 years) — by the program participant, in the case of EV Charge Owner; by PG&E, in the case of EV Charge Sponsor.



## 11. Appendix C

**PG&E conducts a thorough review of all vendor applicants based on pre-determined criteria. All EVSE packages approved through the RFQ meet the following minimum requirements:**

### **Hardware Requirements:**

- Include a commercial-grade Level 2 EVSE.
- Must be able to supply an output current of at least 30 amps per port minimum at 208/240 volts.
- Include a charge connector compliant in SAE J1772.
- Compliant with NEC article 625.
- Rated for outdoor usage, NEMA 3R or better and an operating temperature range of: -22°F to 122°F.
- Shall be network ready — able to communicate with an EVSE management service and use Open Charge Point Protocol (OCPP 1.5 or later).
- ADA Compliant.

### **Software & Network Requirements:**

- Software to control, operate, communicate, diagnose, and capture data.
- The vendor shall provide network services capable of tracking usage, collecting data, billing customers and managing electrical loads.
- The EVSE software shall be certified to receive an OpenADR 2.0b signal.

### **Vendor Requirements:**

- The EVSE Package(s) must be inclusive of all hardware, software, and network services.
- Vendor is an authorized distributor or reseller of specified EVSE hardware and software and authorized to provide the required services.
- Vendor is regularly and continuously engaged in the business and have EVSE installed and operational in the United States for at least three years immediately preceding the bid due date.
- Vendor shall be able to service the entire PG&E Service Territory.