



Southern California Edison Company's

Charge Ready Pilot

Quarterly Report

2nd Quarter, 2019

August 30, 2019

CHARGE READY PILOT QUARTERLY REPORT

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CHARGE READY PILOT QUARTERLY REPORT

Background

The Charge Ready and Market Education programs were developed to support California's policies to reduce greenhouse gas (GHG) and air pollutant emissions, in an effort to meet the state's Zero-Emission Vehicle (ZEV) goals. The Charge Ready Pilot deploys electric infrastructure to serve qualified electric vehicle (EV) charging stations throughout Southern California Edison's (SCE) service territory, while the Market Education program targets car buyers, to help them gain awareness of EVs and the benefits of fueling from the grid.

The Market Education program also includes a launch of SCE's advisory services, to include specific education and support related to electrifying fleets, EV charging, reducing GHG footprints, and other related transportation electrification (TE) areas for business customers. Each program was designed in two phases, with a smaller-scope Phase 1 Pilot to prepare for a broader Phase 2.

The Pilot's objectives are to inform and refine the program's design and cost estimates and develop success measures for a subsequent Phase 2. The Pilot's quarterly reports include key metrics and updates about progress, achievements, and lessons learned.

On December 13, 2018, the California Public Utilities Commission approved SCE's request for an additional \$22M (2014\$) to continue implementing the Pilot. SCE continues to receive new applications from customers and will continue to report on progress. The Pilot's quarterly reports will include key metrics on the additional approved funding and is referred to as "Bridge" to separately track progress.

1. EXECUTIVE SUMMARY

1.1. Pilot Description

Charge Ready was developed to reduce barriers to EV adoption by deploying electric infrastructure to serve EV charging stations (EV supply equipment, or EVSE)¹ at long dwell-time locations where EVs are usually parked for at least four hours. These locations provide adequate time for most EV drivers to fully recharge their vehicles.

The Pilot was open to eligible non-residential customers in the following long dwell-time location market segments:

- Workplaces
- Multi-Unit Dwellings (MUDs), such as apartment buildings
- Fleets
- Destination centers, such as sports arenas or malls

Through Charge Ready, SCE installed, owned, maintained, and paid all related costs for make-ready stubs serving EVSE, including:

- Electric distribution infrastructure, such as transformers, service lines, and meters dedicated to EV charging equipment deployed under the Pilot.
- Customer-side infrastructure, such as panels, step-down transformers, wiring and conduits, and stub outs, to allow for EVSE installations.

Participating customers were responsible for procuring, installing, and maintaining qualified EVSE, including electrical energy and networking costs, but received rebates applicable against some or all of the EVSE and installation costs.

SCE established an Advisory Board comprised of customers, industry stakeholders, and representatives of disadvantaged communities (DACs). The board provided useful input and guidance to SCE during the pilot implementation and execution.

1.2. Pilot Summary for Quarter

Pilot

By the end of the second quarter in 2019, SCE reserved funding for a total of 1,321 charge port commitments at 80 sites. Of the 1,321 committed charge ports, 658 charge ports (50%) are located in DACs, which is considerably

¹ As EVSE may typically include one, two, or four charge ports, with varying costs and demand (kW), SCE uses charge port (rather than EVSE) as the preferred unit to provide detailed reporting about Charge Ready.

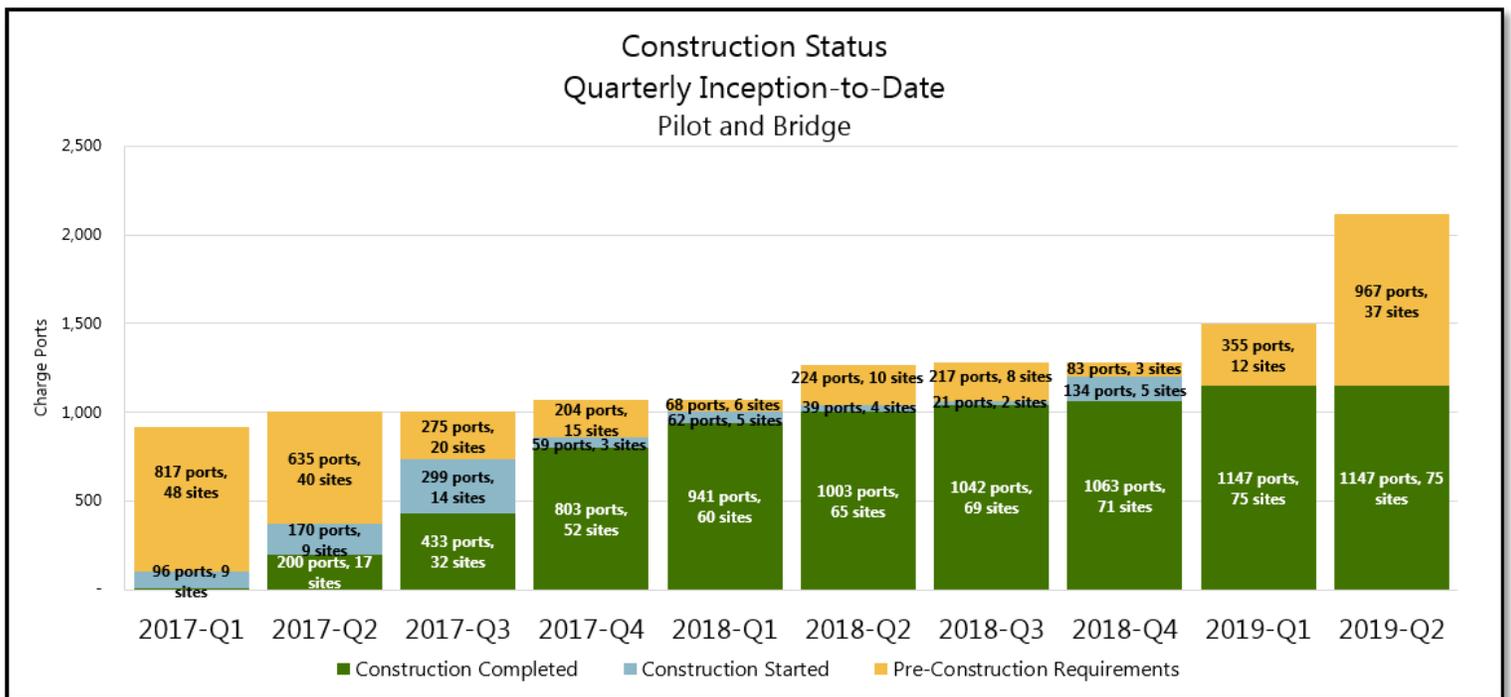
higher than the Pilot’s requirement to deploy 10% of charge ports in DACs.

Several projects continued forward through the construction and installation process. SCE efforts included infrastructure construction and post-installation verification to confirm equipment installation while customers continued procuring qualified charging stations, granting easements in the property where the charging infrastructure will be deployed, and completing the charging station installations.

Bridge

Customers continue to submit applications that may be approved under Bridge funding. As of Q2 2019, 32 sites with 793 ports have reserved funding. A majority of applications are currently in the Engagement and Evaluation stages. Several applications have completed the initial site evaluation visit and cost assessment. Figure 1.1 below shows the construction status for Pilot and Bridge.

Figure 1.1 Construction Status Quarterly Inception-to-Date



The following tables summarize the Pilot's costs recorded as of the end of Q2 2019.

Table 1.1 Pilot Summary for Quarter 2, 2019

	Planning Assumptions (Constant 2014\$)	Inception-to-3/31/19 (Nominal)	Variance to Planning Assumptions	% Variance
Capital				
Utility-side Infrastructure	\$ 3,469,474	\$ 2,452,656	\$ 1,016,818	29%
Customer-side Infrastructure	\$ 7,586,387	\$ 12,536,590	\$ (4,950,203)	-65%
Other Infrastructure Costs ²	\$ 593,503		\$ 593,503	100%
Total Capital	\$ 11,649,364	\$ 14,989,245	\$ (3,339,881)	-29%
Operations and Maintenance				
Rebates	\$ 5,850,000	\$ 1,064,953	\$ 4,785,047	82%
Labor	\$ 284,090	\$ 407,831	\$ (123,741)	-44%
TE Advisory Services	\$ 316,800	\$ 347,380	\$ (30,580)	-10%
ME&O	\$ 665,000	\$ 758,291	\$ (93,291)	-14%
EV Awareness	\$ 2,830,600	\$ 2,145,966	\$ 684,634	24%
Cancelled Projects		\$ 941,549	\$ (941,549)	0%
Uncollectible		\$ 39,907	\$ (39,907)	0%
Total Operations and Maintenance	\$ 9,946,490	\$ 5,705,878	\$ 4,240,612	43%
Total	\$ 21,595,854	\$ 20,695,123	\$ 900,731	4%

Table 1.2 Bridge Summary for Quarter 2, 2019

	Planning Assumptions (Constant 2014\$)	Inception-to- 3/31/19 (Nominal)
Capital		
Utility-side Infrastructure		\$ -
Customer-side Infrastructure		\$ 287,878
Other Infrastructure Costs ³		\$ -
Total Capital		\$ 287,878
	\$22,000,000	
Operations and Maintenance		
Rebates		\$ -
Labor		\$ 36,173
TE Advisory Services		\$ -
ME&O		\$ 16,847
EV Awareness		\$ -
Total Operations and Maintenance		\$ 53,019
Total	\$ 22,000,000	\$ 340,897

² Other Infrastructure Costs include capitalized labor for program management/delivery and charging station testing.

³ Other Infrastructure Costs include capitalized labor for program management/delivery and charging station testing.

2. PILOT OPERATIONS

2.1. Process Overview

The Pilot's end-to-end process can be described in six stages: Engagement, Evaluation, Confirmation, Planning and Design, Construction, and Verification.

- **Engagement** begins with a customer submitting an application indicating their interest in participating in the Pilot. The application the customer submits is called the **Step 1 – Notice of Intent**.
- **Evaluation** follows the application submission. SCE conducts on-site assessments to evaluate the feasibility of deploying charging stations through the Pilot.
- **Confirmation** of the customer's participation includes approval by the customer of the number of charging stations and deployment location at each site (as proposed by SCE). SCE reserves funding (if available) upon receipt of **Step 2 – Agreement** signed by the customer and property owner.
- SCE then conducts **Planning and Design** for the approved site while the Customer Participant procures qualified charging stations. At the end of the procurement period, Customer Participants must provide the required proof of purchase using **Step 3 – Certification**.
- SCE then conducts **Construction** for the approved site. A pre-construction meeting is held with the Customer Participant before construction begins. Once the infrastructure is completed and passes inspection, the Customer Participant's selected charging station vendor installs the charging stations.
- Finally, **Verification** takes place to ensure that electric infrastructure and charging systems were deployed in accordance with approved plans (using **Step 4 – Walk-Through Report** and **Step 5 – Rebate Confirmation**); SCE then issues the rebate.

Waitlist Process

SCE established a waitlist for customers that did not meet Pilot timelines, or whose applications exceeded funding availability. Waitlisted projects can move forward in the process if other projects with reserved funding drop out or if previously reserved funding becomes available (for example, if a project with reserved funding has cost underruns).

2.2. Status Overview

By the end of the second quarter in 2019, SCE reserved funding for a total of 2,114 charge port commitments. Of the 2,114 committed charge ports, 1,049 charge ports (50%) are located in Disadvantaged Communities, which is considerably higher than the Pilot's requirement to deploy 10% of charge ports in Disadvantaged Communities. The following six charts (three for Pilot and three for Bridge) provide the charge port distribution per the category noted for the charge ports that have reserved funding.

Figure 2.1 Charge Port Distribution by Market Segment for Pilot

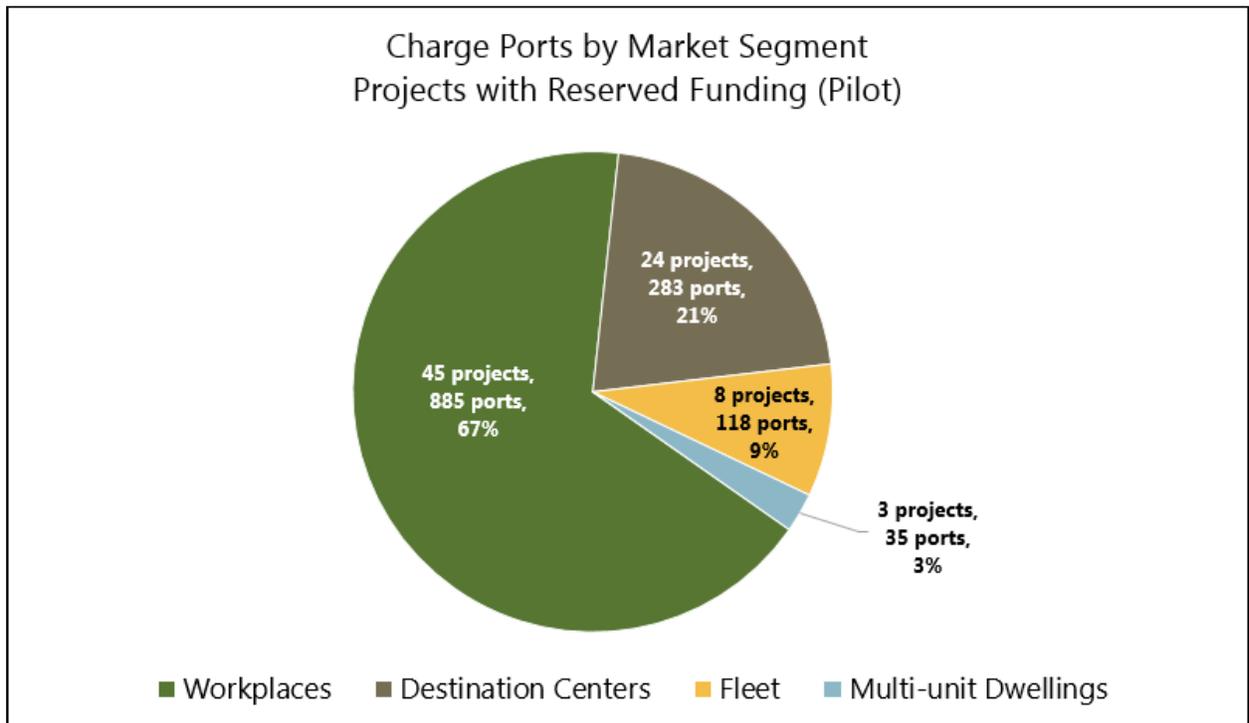


Figure 2.2 Charge Port Distribution by Market Segment for Bridge

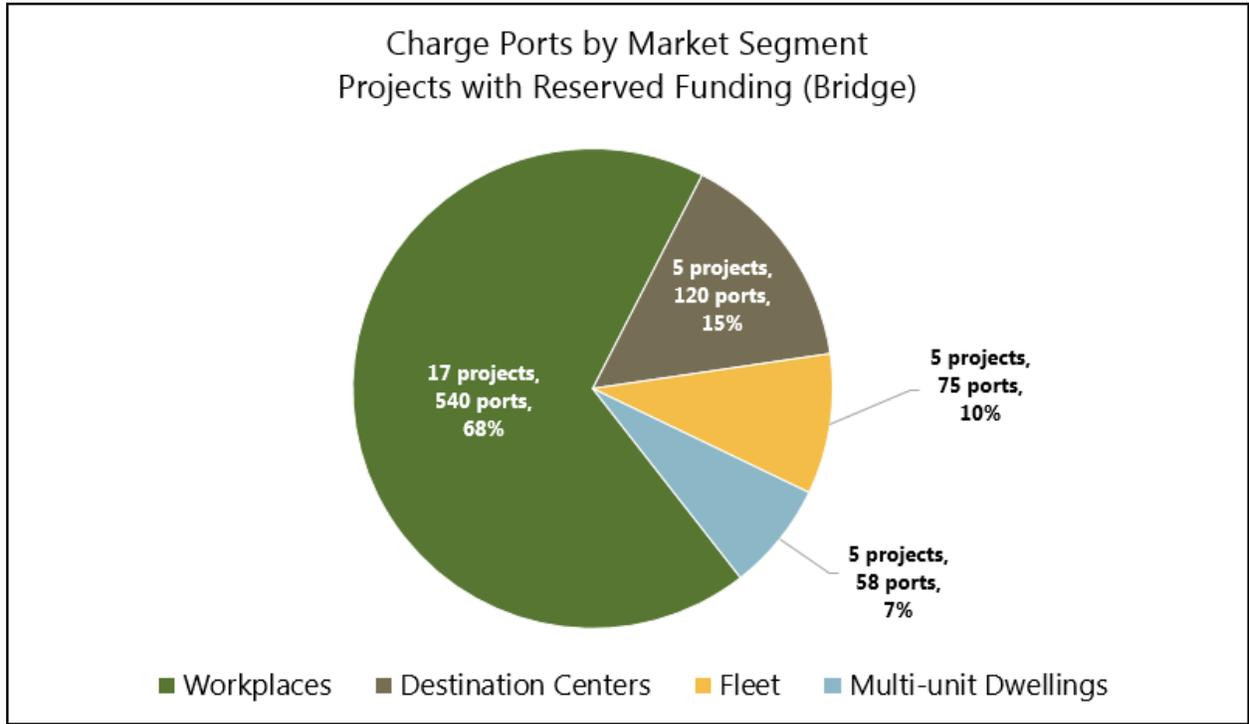


Figure 2.3 Charge Port Distribution by Customer Type for Pilot

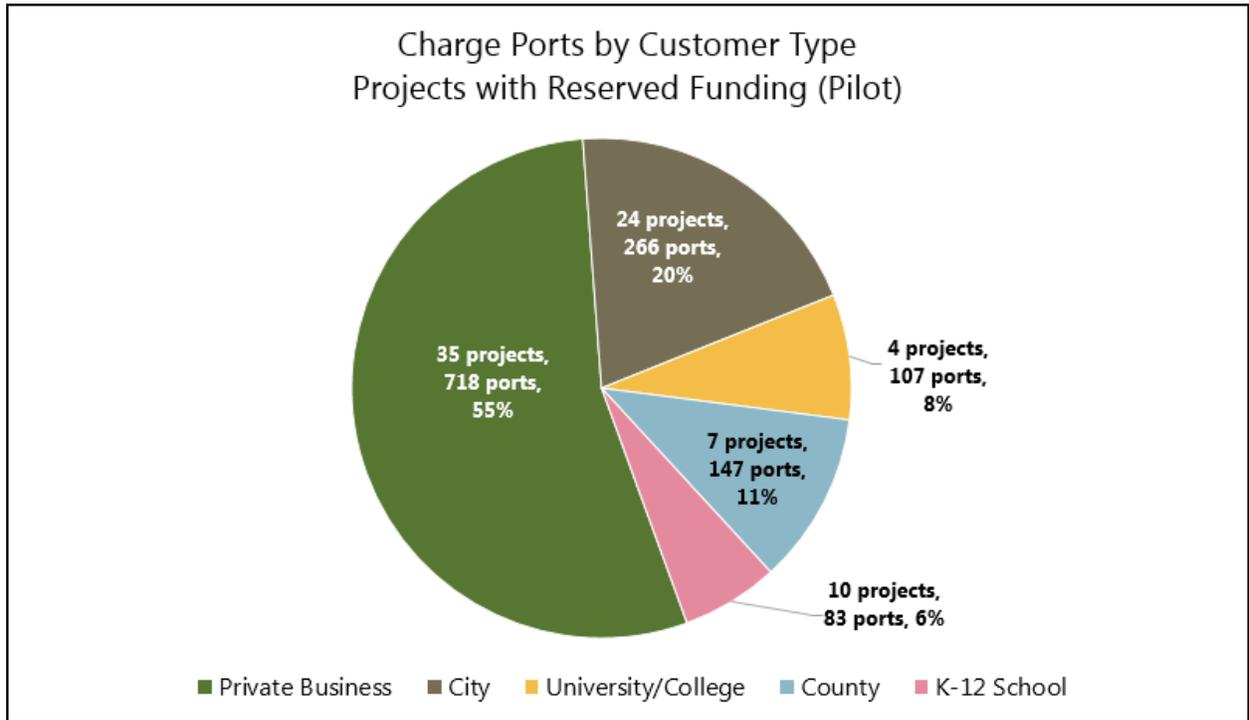


Figure 2.4 Charge Port Distribution by Customer Type for Bridge

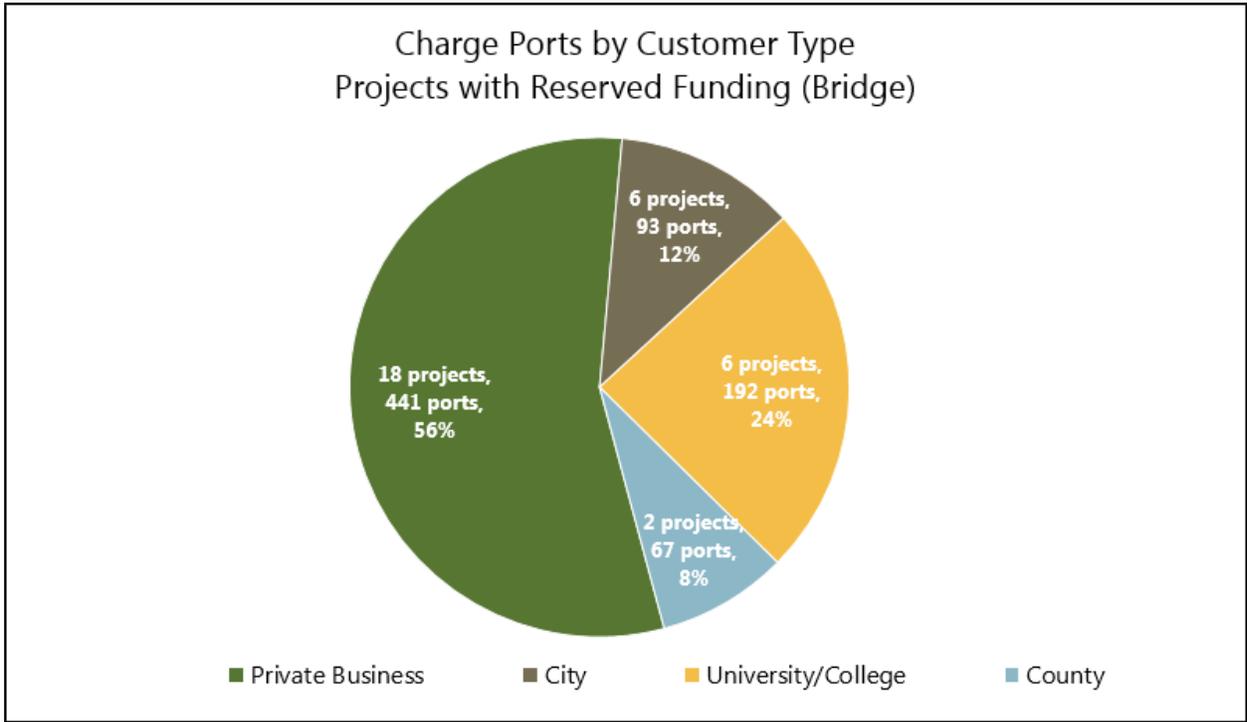


Figure 2.5 Charge Port Distribution DAC and Non-DAC (Pilot)

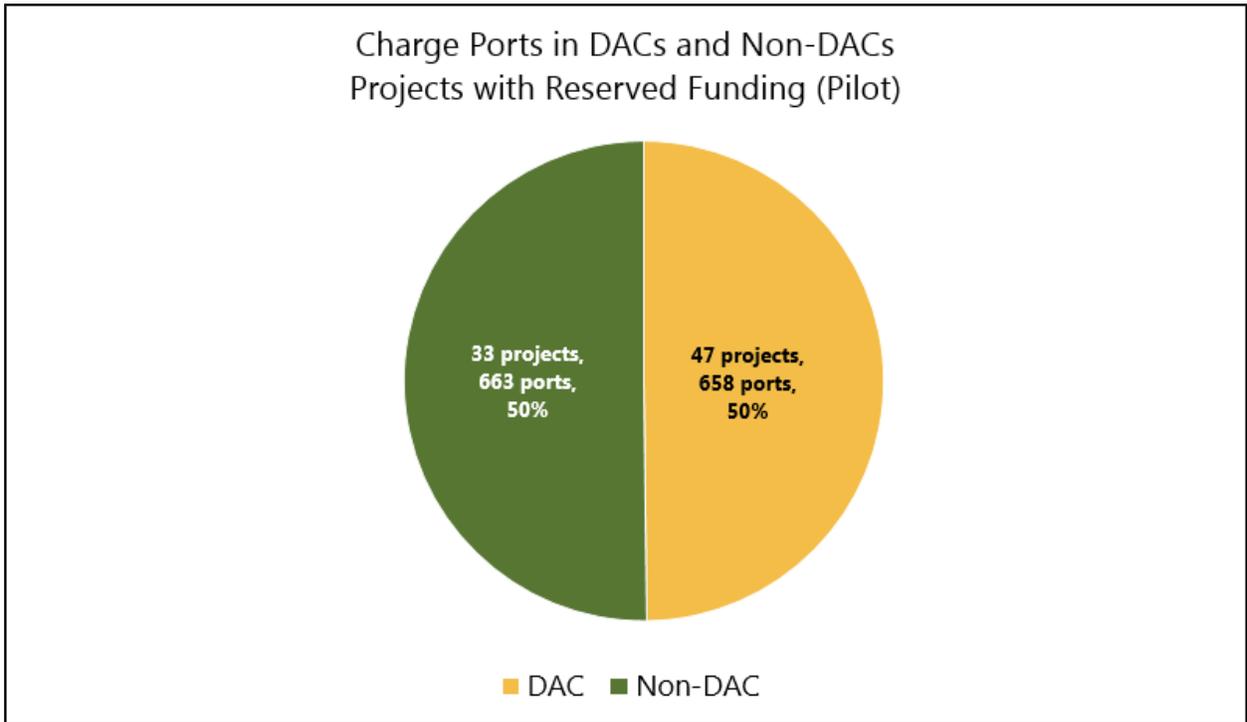
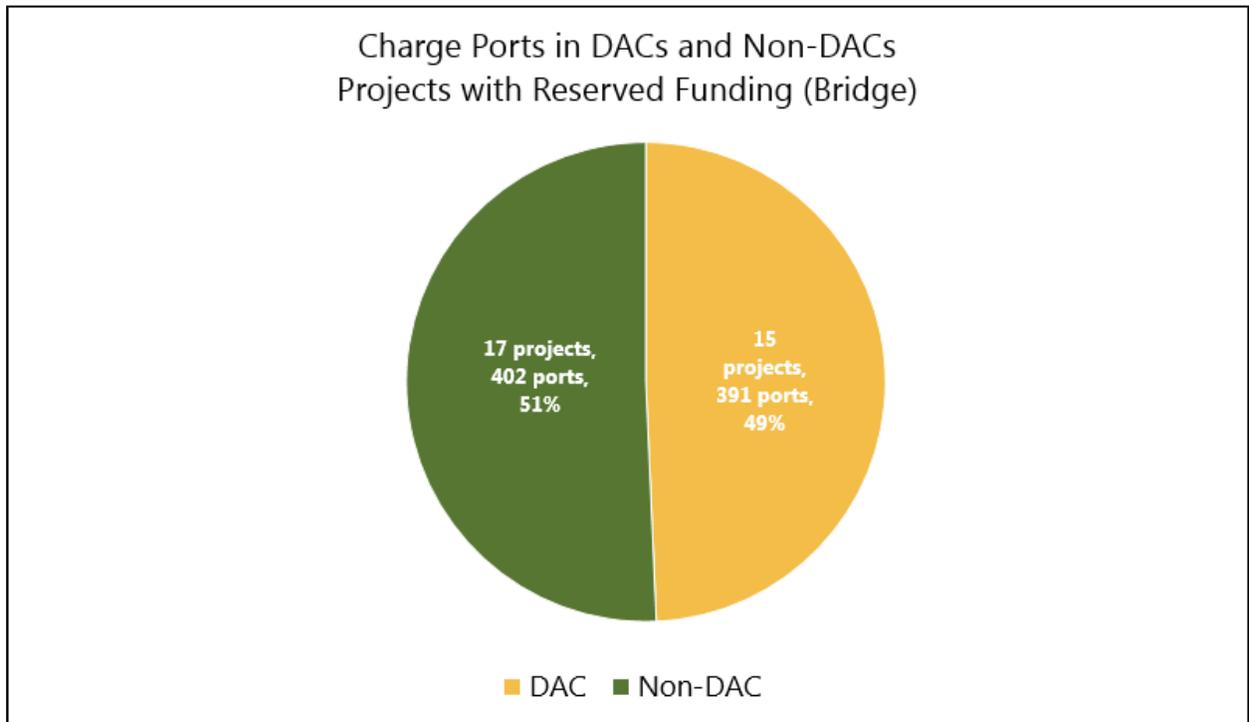
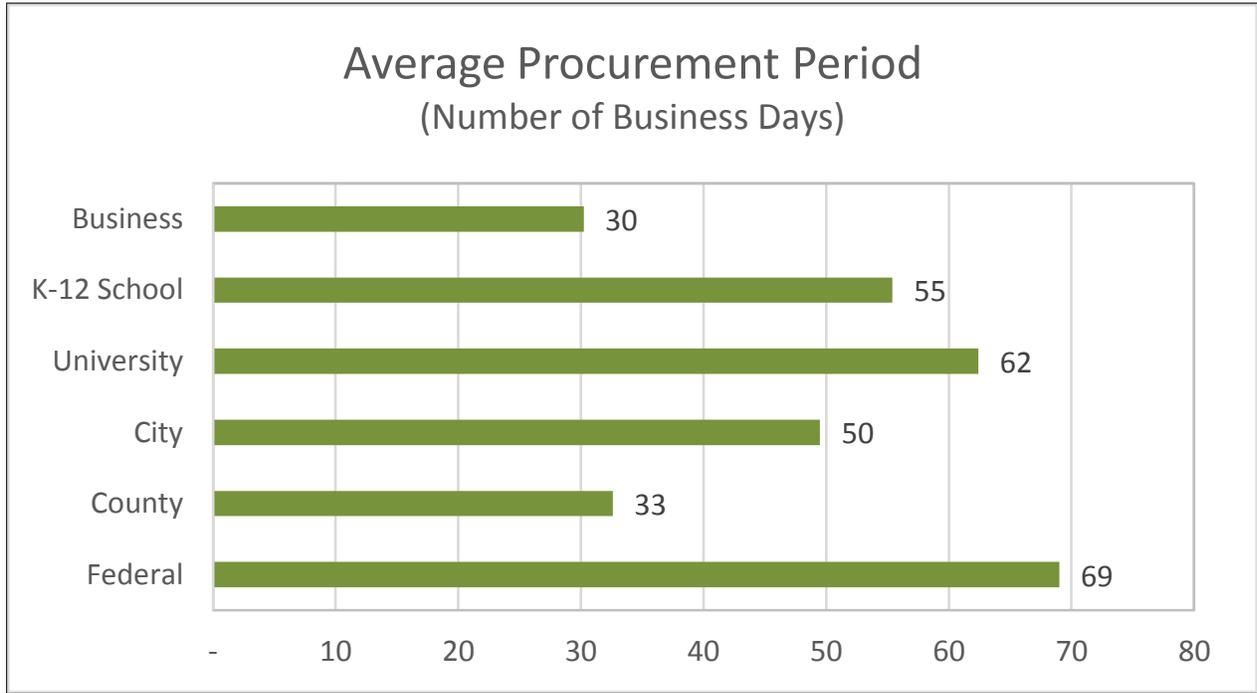


Figure 2.6 Charge Port Distribution DAC and Non-DAC (Bridge)



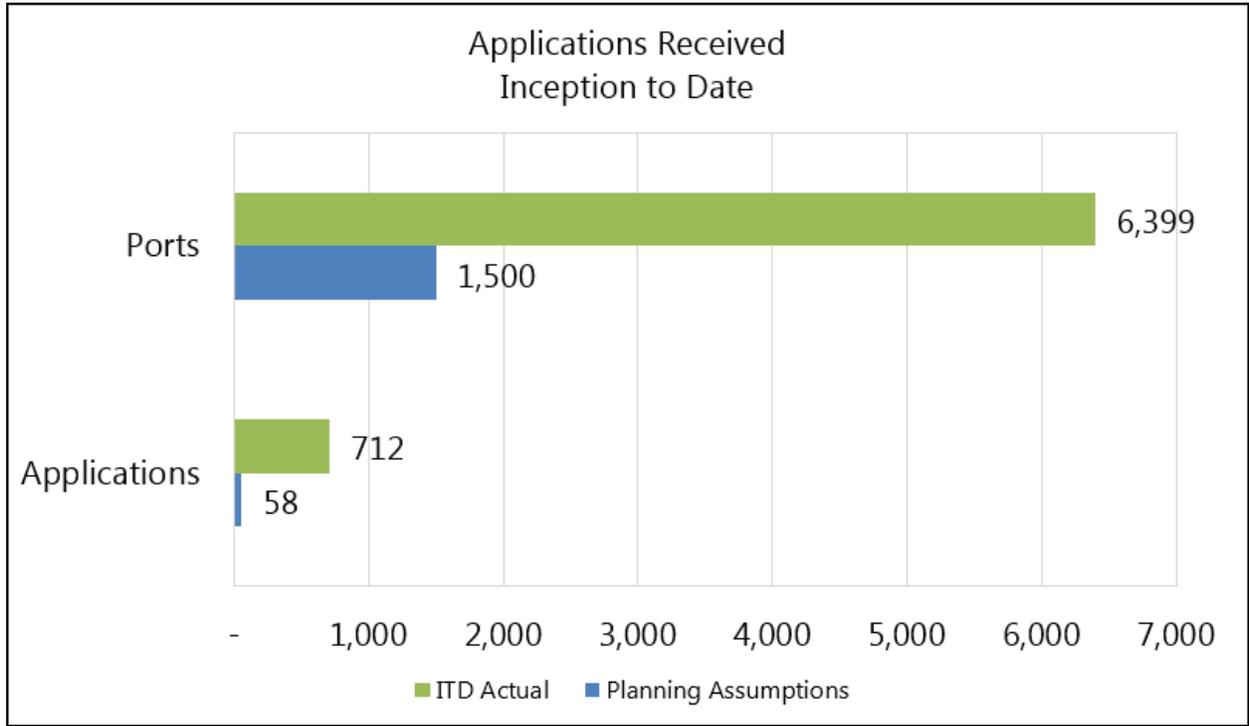
By the end of Q2 2019, 88 customers with 1,477 charge ports had submitted their procurement documents for the charging stations. The average procurement period was 42 business days with the majority of customers submitting the allowed two extension requests. The average procurement period by organization type are shown in Figure 2.7.

Figure 2.7 Average Procurement Period (Pilot and Bridge)



The following chart provides a snapshot of the Pilot's operational metrics relating to customer applications in Charge Ready Pilot. The data reflected in the following charts capture project activity from the launch of the Pilot in May of 2016, through the end of Q2, 2019. The distribution across market segments is provided.

Figure 2.8 Applications Received for Pilot and Bridge



The following table summarizes the Pilot operational metrics for Q2 2019.

Table 2.1 Pilot Operational Metrics for Quarter

Total Number of Applications Received

	Filing Assumptions	Quarter2, 2019	Inception-to-Date Actual	Percentage to Filing Assumptions
	58 projects 1,500 charge ports	161 projects 1,185 charge ports	712 projects 6,399 charge ports	1,228% 427%
Disadvantaged Communities	n/a	23%	38%	n/a
Destination Centers	n/a	15%	22%	n/a
Workplaces	n/a	41%	58%	n/a
Fleet	n/a	7%	5%	n/a
Multi-Unit Dwellings	n/a	37%	14%	n/a

Percentage of Charging Stations Requested

	Filing Assumptions	Quarter 2, 2019	Inception-to-Date Actual	Percentage to Filing Assumptions
	58 projects 1,500 charge ports	161 projects 1,185 charge ports	712 projects 6,399 charge ports	1,228 % 427 %
Disadvantaged Communities	10%	32%	33%	n/a
Destination Centers	n/a	16%	24%	n/a
Workplaces	n/a	51%	51%	n/a
Fleet	n/a	11%	7%	n/a
Multi-Unit Dwellings	n/a	22%	18%	n/a

Number of Applicants Rejected

	Filing Assumptions	Quarter 2, 2019	Inception-to-Date Actual	Percentage to Filing Assumptions
	n/a	33 project 167 charge ports	174 projects 1,404 charge ports	n/a
Disadvantaged Communities	n/a	39%	39%	n/a
Destination Centers	n/a	36%	26%	n/a
Workplaces	n/a	61%	67%	n/a
Fleet	n/a	3%	1%	n/a
Multi-Unit Dwellings	n/a	0%	6%	n/a

Number of Applicants Withdrawn

	Filing Assumptions	Quarter 2, 2019	Inception-to-Date Actual	Percentage to Filing Assumptions
	n/a	32 project 408 charge ports	218 projects 1,584 charge ports	n/a
Disadvantaged Communities	n/a	6%	38%	n/a
Destination Centers	n/a	16%	21%	n/a
Workplaces	n/a	40%	62%	n/a
Fleet	n/a	3%	6%	n/a
Multi-Unit Dwellings	n/a	41%	11%	n/a

Number of Applicants Withdrawn After Signing Step 2 Agreement

	Filing Assumptions	Quarter 2, 2019	Inception-to-Date Actual	Percentage to Filing Assumptions
	n/a	-2	13	n/a
Disadvantaged Communities	n/a	0	7	n/a
Destination Centers	n/a	-1	4	n/a
Workplaces	n/a	-1	8	n/a
Fleet	n/a	0	1	n/a
Multi-Unit Dwellings	n/a	0	0	n/a

Average Number of Charge Ports per Site with Completed Infrastructure

	Filing Assumptions	Quarter 2, 2019	Inception-to-Date Actual	Percentage to Filing Assumptions
	n/a	0	15	n/a
Disadvantaged Communities	n/a	0	12	n/a
Destination Centers	n/a	0	11	n/a
Workplaces	n/a	0	18	n/a
Fleet	n/a	0	12	n/a
Multi-Unit Dwellings	n/a	0	12	n/a

Total Number of Projects with Completed Infrastructure

	Filing Assumptions	Quarter 2, 2019	Inception-to-Date Actual	Percentage to Filing Assumptions
	58 projects 1,500 charge ports	0 projects 0 charge ports	75 projects 1,147 charge ports	129% 76%
Disadvantaged Communities	n/a	0%	59%	n/a
Destination Centers	n/a	0%	31%	n/a
Workplaces	n/a	0%	56%	n/a
Fleet	n/a	0%	9%	n/a
Multi-Unit Dwellings	n/a	0%	4%	n/a

Average Number of Charge Ports per Site with Customer Installation Completed

	Filing Assumptions	Quarter 2, 2019	Inception-to-Date Actual	Percentage to Filing Assumptions
	n/a	20	15	n/a
Disadvantaged Communities	n/a	0	12	n/a
Destination Centers	n/a	16	11	n/a
Workplaces	n/a	21	18	n/a
Fleet	n/a	0	12	n/a
Multi-Unit Dwellings	n/a	0	12	n/a

Total Number of Projects with Customer Installation Completed

	Filing Assumptions	Quarter 2, 2019	Inception-to-Date Actual	Percentage to Filing Assumptions
	58 projects 1,500 charge ports	5 projects 100 charge ports	75 projects 1,147 charge ports	129% 76%
Disadvantaged Communities	n/a	0%	59%	n/a
Destination Centers	n/a	20%	31%	n/a
Workplaces	n/a	80%	56%	n/a
Fleet	n/a	0%	9%	n/a
Multi-Unit Dwellings	n/a	0%	4%	n/a

Table 2.2 Customer Participant Request

Customer Participant Request		
	Filing Assumptions	Year-to-Date Actual
Average number of total parking spaces per site	N/A	588 parking spaces/site
Percentage of total number of parking spaces located in parking structures	N/A	16%
Average fleet size ⁴	N/A	6 (Fleet Segment Only) 4 (All Segments)
Percentage of applications received with charging systems already installed at the site	N/A	22%
Average number of charging systems already installed at the site	N/A	9
Average number of charge ports requested per site	26	13.6
<ul style="list-style-type: none"> Disadvantaged Communities 	N/A	12.2
<ul style="list-style-type: none"> Destination Centers 	N/A	13.7
<ul style="list-style-type: none"> Workplaces 	N/A	13.0
<ul style="list-style-type: none"> Fleet 	N/A	14.4
<ul style="list-style-type: none"> Multi-unit Dwellings 	N/A	15.5

⁴ Applicants from all segment categories may indicate the number of fleet vehicles at their site (All Segments). Applicants in the fleet category intend to use the new charging station for their EV fleet (Fleet Segment Only).

Table 2.3 Pilot Costs

Pilot Costs			
	Filing Assumptions ⁵ (Constant 2014\$)	Inception-to-Date (Nominal)	Percentage to Filing Assumptions
Total Pilot costs (Infrastructure plus rebates paid)	\$16,792,136	\$16,054,199	96%
Average cost per site (Utility + Customer infrastructure + rebate) ⁶	\$291,070 (\$11,195 * 26 charge ports)	Average Cost per Site: \$204,522 Average No. Charge Ports per Site: 15	70% 57%
Average cost per port (Utility + Customer infrastructure + rebate) ⁷	\$11,195	\$13,837 (\$12,687 2014\$)	113%
Total rebates paid ⁸	\$5,850,000	\$1,064,953	18%
Average rebates paid per site ⁹	\$101,400 (\$3,900 * 26 charge ports)	\$16,342	16%
Total infrastructure costs	\$10,942,136	\$14,989,245	137%
Average infrastructure per site	N/A	\$188,180	N/A
<ul style="list-style-type: none"> Average actual infrastructure costs for projects with all Level 1 charging systems 	N/A	\$170,897	N/A
<ul style="list-style-type: none"> Average actual infrastructure costs for projects with all Level 2 charging systems 	N/A	\$188,454	N/A
<ul style="list-style-type: none"> Average actual infrastructure costs for projects with hybrid charging systems (both Level 1 and Level 2) 	N/A	N/A	N/A
Total SCE site assessment costs for rejected and withdrawn applicants (prior to signing Step 2)	N/A	\$418,537	N/A

⁵ Some items did not have filing assumptions but actual costs are being tracked and reported.

⁶ Based on projects completed with recorded infrastructure costs and rebates.

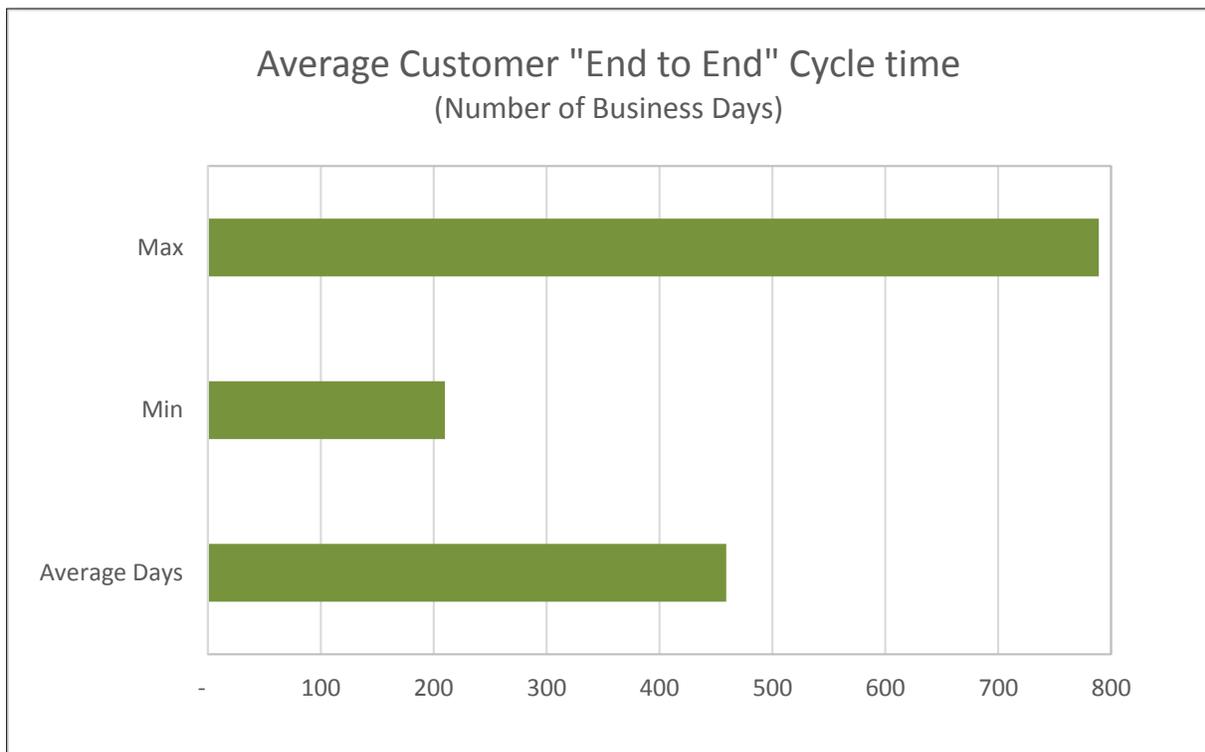
⁷ Based on completed projects with recorded infrastructure and rebate costs.

⁸ Recorded and accrued rebates.

⁹ Based on 64 sites.

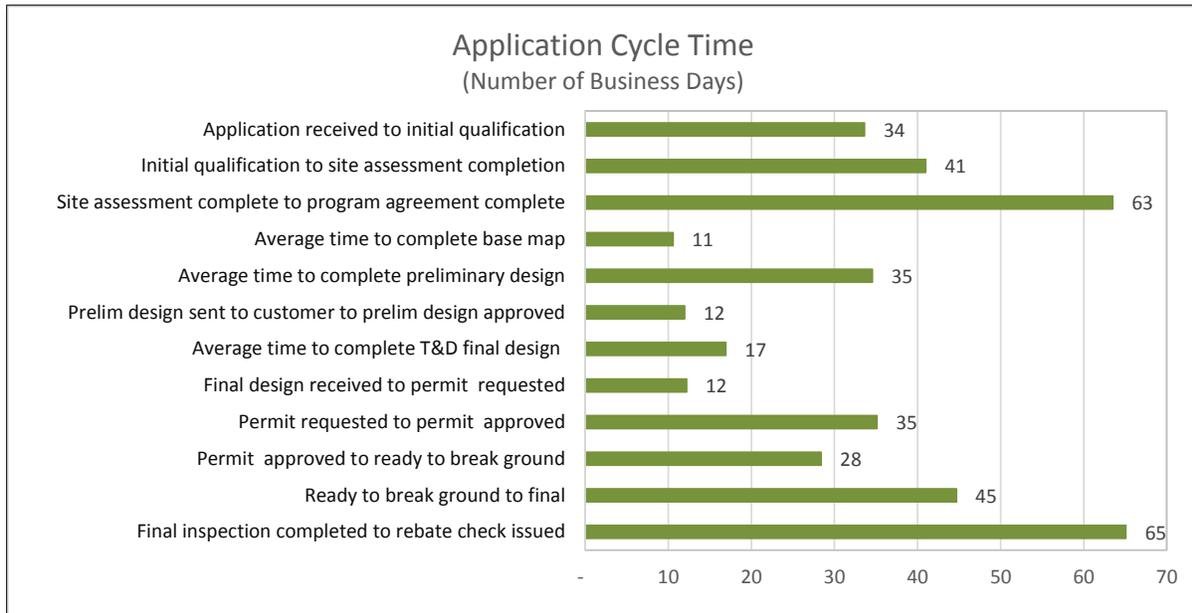
Average SCE site assessments cost for rejected and withdrawn applicants (prior to signing Step 2)	N/A	\$1,101	N/A
Total SCE site assessment, design, permit, and easement cost for rejected and withdrawn applicants (after signing Step 2)	N/A	\$208,142	N/A
Average SCE site assessment, design, permit, and easement cost for rejected and withdrawn applicants (after signing Step 2)	N/A	\$17,345	N/A
Total construction costs for withdrawn applicants	N/A	\$23,243	N/A
Average construction costs for rejected and withdrawn applicants	N/A	\$4,649	N/A

Figure 2.9 Pilot Cycle Times¹⁰



¹⁰ Based on 61 projects with rebate checks issued.

Figure 2.10 Average Application Cycle Time



2.3. Supplier Diversity

In the Charge Ready Pilot, to date 73% of spend has been contracted with Diverse Business Enterprises (DBE).

The Charge Ready Pilot was previously at 100% DBE spend prior to conducting a second-round RFP to source additional general contractors to support the construction of EV infrastructure.

2.4. Training and Safety

SCE values safety, and ensured the utility and the customer participant site infrastructures were installed and maintained in safe working order. The Pilot requires SCE employees and subcontractors installing the make-readies to follow these safety requirements:

- All general contractors must prepare and adhere to a job specific Job Hazard Analysis (JHA).
- All general contractors must have a dedicated safety officer or manager who regularly visits the job site.
- Safety tailboards must be held daily, to discuss the work to be performed and any potential risks.
- All general contractors must submit a monthly safety report to SCE.
- SCE personnel must follow all site safety regulations including wearing appropriate personal protective equipment (PPE).

- Subcontractor electricians must hold valid California C-10 licenses.
- Electricians preparing the make-readies must be EV Infrastructure Training Program (EVITP) certified.

For infrastructure safety, all site plans were submitted to their authorities having jurisdiction (AHJs) for approval and permitting. Some AHJs required multi-agency (for example, Building & Safety, Electrical, and Fire Department Planning) approval. For charging station safety, all installations were completed per AHJ-approved plans, and inspected by AHJ inspectors.

3. CHARGING STATIONS

3.1. Overview

The Charge Ready Pilot qualifies three different types of charging system profiles:

1. Level 1 charging system, without network capability,
2. Level 2 "A" charging system, with network capability integrated into the EVSE, and
3. Level 2 "B" charging system, with network capability provided by an external device (such as a kiosk or gateway) shared among multiple stations.

Through a Request for Information (RFI) process, SCE conducts technical tests on proposed charging systems. In accordance with the terms and conditions of the RFI, qualified vendors (manufacturers, distributors) for the Pilot are required to offer Customer Participants:

- Qualified charging systems that meet SCE's technical requirements
- Networking services, including transactional data reporting and demand response (DR) services

The Pilot's Approved Package List¹¹ summarizes the vendors and EVSE models available to Customer Participants as of Q2 2019. The Pilot offers 60 options for charging stations from 13 EVSE vendors and 8 network providers, maintaining customer choice and market-neutral customer engagement.

¹¹ The Pilot's Approved Package List can be found on the landing page at <https://on.sce.com/chargeready>.

Table 3.1 Number of Approved Charging Station Models

Charging System Type	Total Number of Approved Models
Level 1	5
Level 2 "A"	13
Level 2 "B"	42
Total	60

Table 3.2 EVSE Model Summary

Average number of ports per EVSE	1.5
Average number of circuits per EVSE	1.3
Average number of ports per circuit	1.1
Number of wall EVSE units	18
Number of pedestal units	27
Number of both wall and pedestal units	15

The base cost of qualified EVSE for the Charge Ready Pilot is defined as "the best value offered for a charging station and its installation within each defined profile [of EVSE]."¹² SCE determines a price per port for each of the qualified models and configurations. SCE then selects the lowest price per port within each charging system type (using only those EVSE models that passed SCE's technical evaluation) to determine the base costs. The base cost values as of Q2 2019 are shown in Table 3.3.

Table 3.3 Base Cost of Charging Systems

Charging System Type	Base Cost Per Port
Level 1	\$1,396
Level 2 "A"	\$2,390
Level 2 "B"	\$2,095

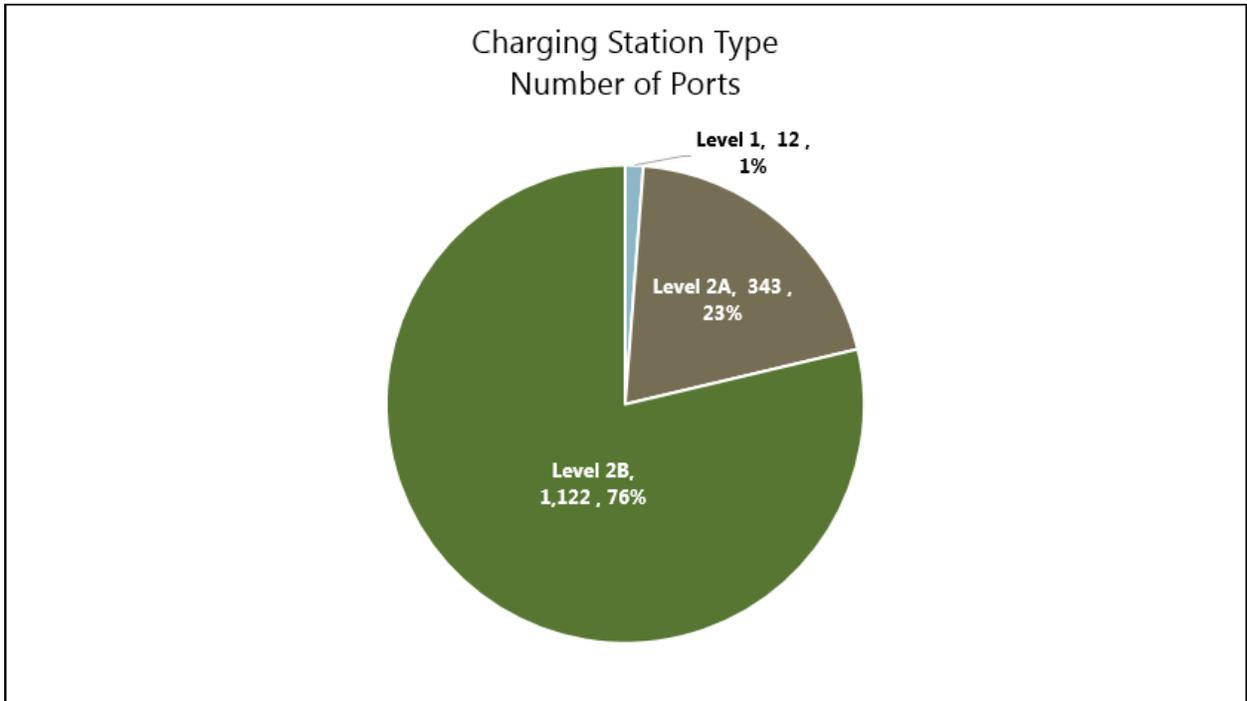
3.2. Customer Charging Stations

By the end of Q2 2019, 88 customers with reserved funding for 1,477 charge ports had submitted their proof-of-procurement documents for the charging stations. The vast majority of participants selected L2 "B" charging station

¹² In the Step 2 Agreement, the applicant indicates the requested number of Level 1 EVSE to be approved and installed under the Pilot. The number of installed Level 1 EVSE must match the number of Level 1 EVSE requested in Step 2 Agreement.

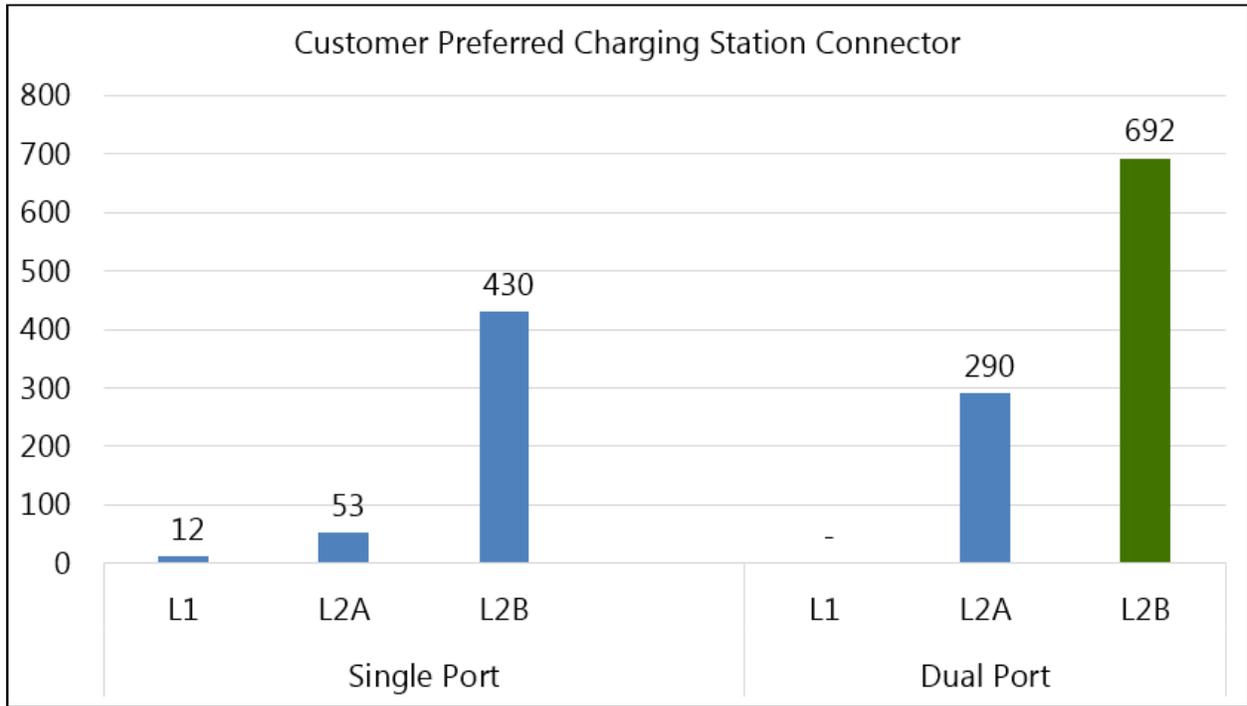
systems that have network capability provided by an external device (such as a kiosk or gateway), which is shared among multiple stations. The second most popular L2 configuration included stations that have integrated networking capability. The following chart displays customer preferences for types of charging stations.

Figure 3.1 Charge Ports per Type



More than twice as many customer participants selected and procured dual-port charging station configurations than those that acquired single-port systems. Figure 3.2 depicts the distribution of purchases across various charging station configurations.

Figure 3.2 Customer Preferred Charging Station Connector



3.3. Rebates

As of June 30, 2019, a total of 66¹³ rebate payments were made, representing 989 charge ports.

Table 3.4 provides a summary of charging station requests and rebates, as of March 31, 2019.

Table 3.4 Charging Station Requests and Rebates

Charging Station Requests ¹⁴ and Rebates ¹⁵		
	Pilot	Bridge
Number of Level 1 charge ports requested	12	20
Number of Level 2 charge ports requested	1,309	773
Number of total charge ports approved	1,321	793
<ul style="list-style-type: none"> ▪ Average number of Level 1 charge ports approved per Level 1 site 	12	20
<ul style="list-style-type: none"> ▪ Average number of Level 2 charge ports approved per Level 2 site 	16.6	24.9

¹³ Includes recorded and accrued rebates.

¹⁴ In the Step 2 Agreement, the applicant indicates the requested number of Level 1 EVSE to be approved and installed under the Pilot. The number of installed Level 1 EVSE must match the number of Level 1 EVSE requested in Step 2 Agreement.

¹⁵ Rebate reserved based on Step 3 Procurement

Charging Station Requests¹⁴ and Rebates¹⁵		
Rebates reserved for Level 1 ports	\$19,356	\$0
Rebates reserved for Level 2A ports	\$375,358	\$0
Rebates reserved for Level 2B ports	\$1,057,774	\$162,495
Rebates paid for Level 1 ports	\$19,356	\$0
Rebates paid for Level 2A ports	\$354,405	\$0
Rebates paid for Level 2B ports	\$691,192	\$0

4. CHARGING STATION OPERATION

4.1. Site Host Fees and Charging Station Accessibility

SCE sent out surveys to customer participants with completed projects to learn more about how they are operating the charging stations including fees charged to EV drivers. Surveys are sent to participants that may have more than one site in the Charge Ready Pilot. The results below show the total number of sites and ports represented by the surveys. The survey was open for three weeks and SCE conducted weekly follow-ups to those who have not responded. Below is the most recent information¹⁶ per site based on the survey responses.

Below are the key highlights for 38 sites with 634 ports:

- The majority of users of EV charging stations are employees (79% of sites), followed by customers and fleet vehicles (34% of sites) and 39% of sites allow the general public to have use the charging stations
 - Two-thirds of charging stations allow fleet vehicles to charge at any time
- 47% of the sites are open 7 days a week, 24 hours per day, including holidays
- 53% of the sites charge fees based on energy usage with the average fee charged at \$0.76 per kWh¹⁷; and 29% allow EV drivers to charge their electric vehicles for free
- Payment is most commonly made at the charging station, through an EV network membership card at 63% of sites
- Usually, charging stations do NOT charge a penalty fee for not moving their vehicles after charging is completed (71% of sites). However, for

¹⁶ SCE sent out a survey in July 2018 and another in April 2019. SCE is using the most recent response available for the completed sites.

¹⁷ May include other fees.

those who do, the average penalty fee is \$2.56 per hour

- On average, there are 27 drivers per site that have replaced their gasoline-powered vehicles with Electric Vehicles (EVs) since charging stations were made available at their sites through SCE's Charge Ready Pilot

For load management strategies, customers were asked how they limit charging during on-peak periods. Customers were allowed to select more than one option. The responses are as follows:

Table 4.1 Load Management Strategies per Survey

Strategy	Number of Sites
Charge higher fees during on-peak period	0
Allow charging only at lower charging levels	2
Do not allow charging during on-peak periods	3
Advise users to charge only during off-peak periods	3
Not sure	12
No measures taken	17
Demand Response	1

Customers were also asked if they have received any reports of drivers that have been negatively impacted by managed charging strategies or events that reduced the time it normally takes to charge a vehicle. 100% of those who responded to the question said they have not received such feedback.

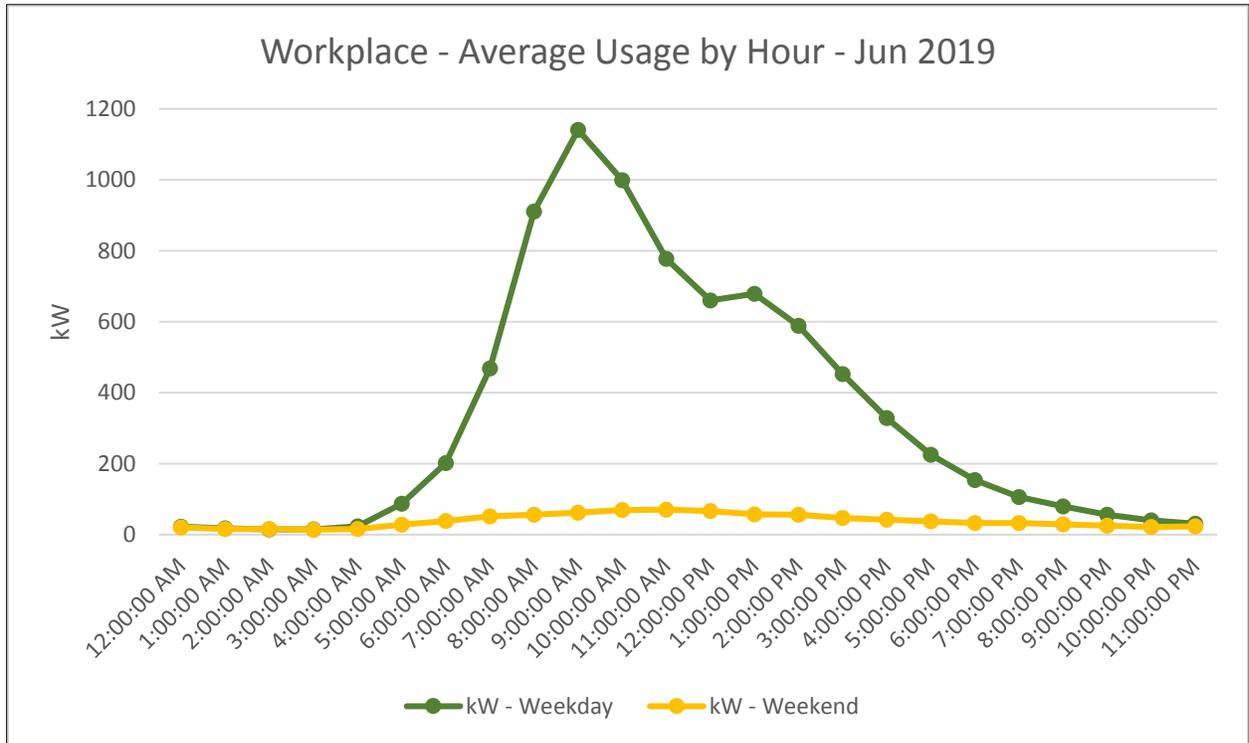
4.2. Charging Station Energy Usage

Average load shapes for each segment (based on SCE meter data) are analyzed each month in order to determine when electric vehicles are being charged and when EV load may be available for curtailment or shifting. These load shapes have remained fairly consistent over time as more charging ports have been added to each segment. All figures below account for the shift from Pacific Standard Time to Pacific Daylight Time during the month of March 2019.

During the month of June 2019, charging ports at workplaces were used

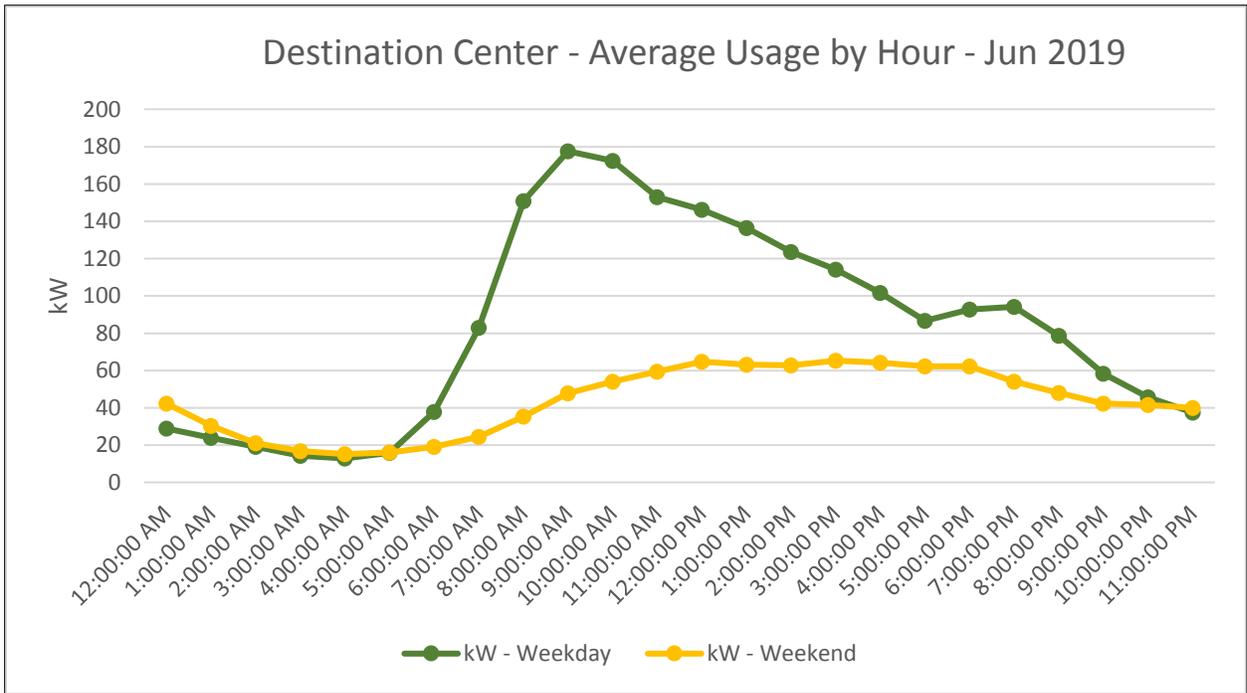
primarily during morning hours with average peak usage occurring at 9am on weekdays. As expected, very little load occurred on weekends since workplaces typically operate Monday through Friday. Workplaces may be good candidates for load shifting since there is substantial load in the morning that could be shifted to later in the day when more renewable generation is available.

Figure 4.1 Workplace Average Usage per Hour in June 2019: 40 sites/739 ports



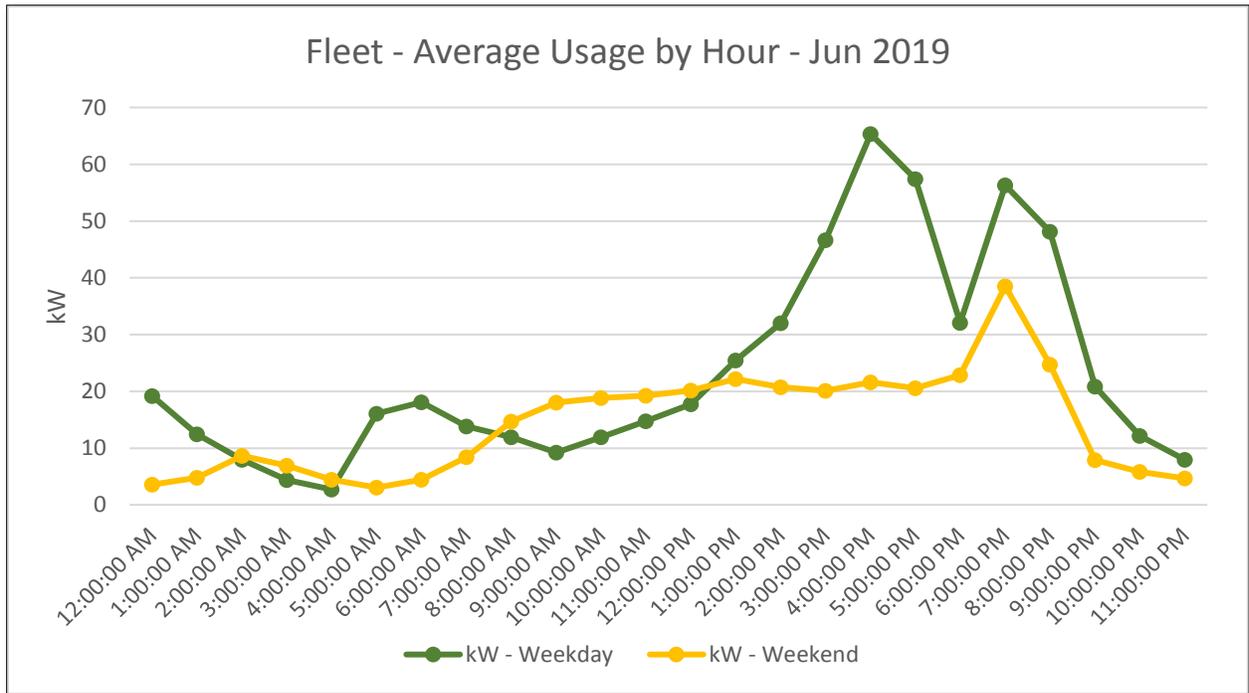
During the month of June 2019, charging ports located at Destination Centers were used throughout the day on both weekdays and weekends with average peak usage occurring at 9am on weekdays. Based on available load during the morning and evening, Destination Centers may be good candidates for both shifting morning load to later in the day and reducing evening load to help manage the evening ramp.

Figure 4.2 Destination Center Usage per Hour in June 2019: 23 sites/250 ports



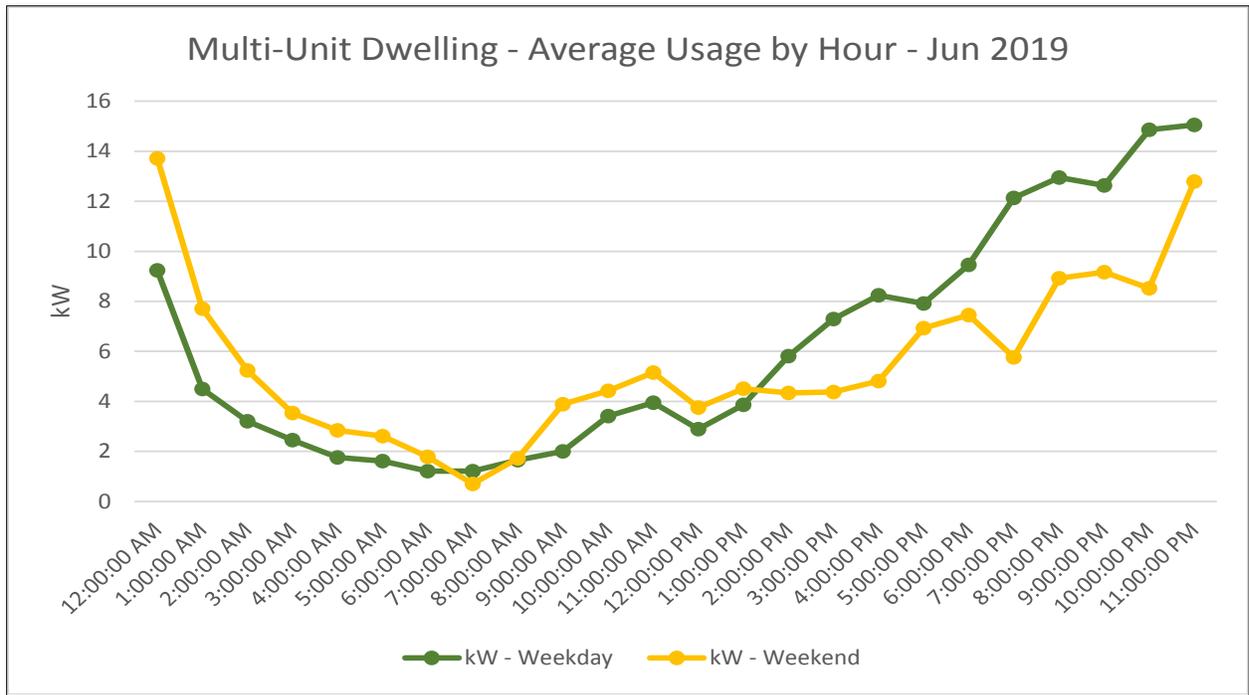
During the month of June 2019, charging ports at fleet sites were used primarily during late afternoon and evening hours with average peak usage occurring at 4pm on weekdays. Some usage also occurs during morning hours on weekdays and throughout the day on weekends. Some morning load may be available for load shifting, but based on load shape fleets appear to be better suited for reducing load during evening ramping periods.

Figure 4.3 Fleet Usage per Hour in June 2019: 7 sites/83 ports



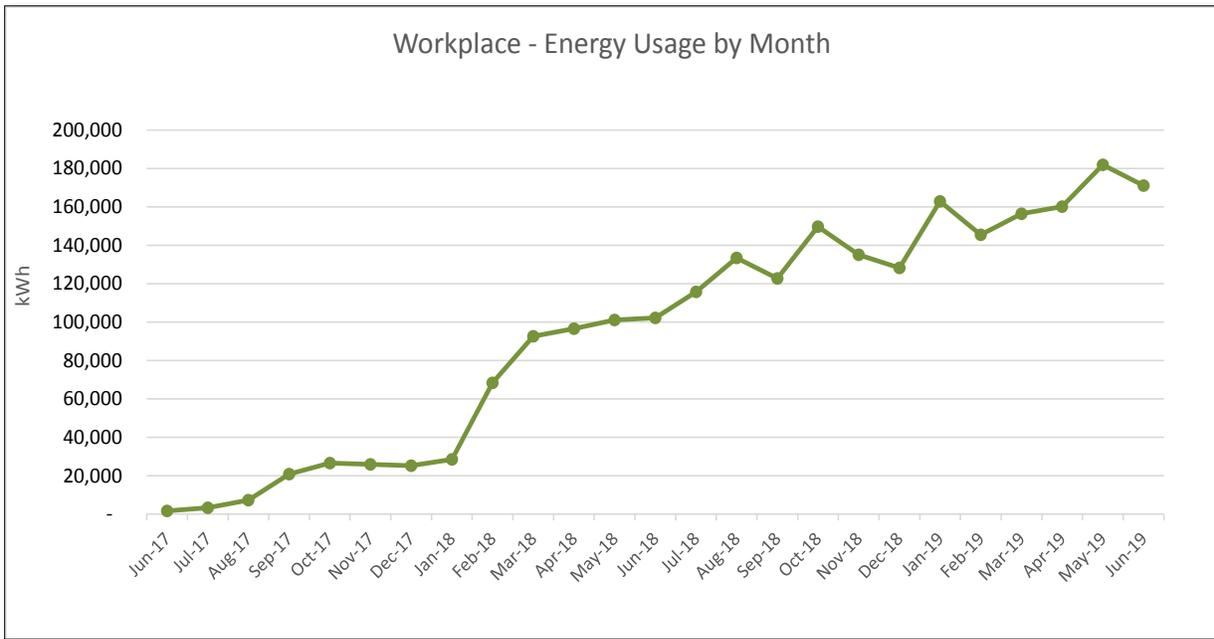
During the month of June 2019, charging ports at Multi-Unit Dwellings were used primarily during early morning hours and evenings on both weekdays and weekends with average peak usage occurring at 11pm on weekdays. The load shape remained similar during both weekdays and weekends as expected since residences are typically occupied every day of the week. Very little morning load is available for shifting. However, there is load available during evening hours especially on weekdays that could be reduced to help manage the evening ramp.

Figure 4.4 Multi-Unit Dwelling Usage per Hour in June 2019: 3 sites/35 ports



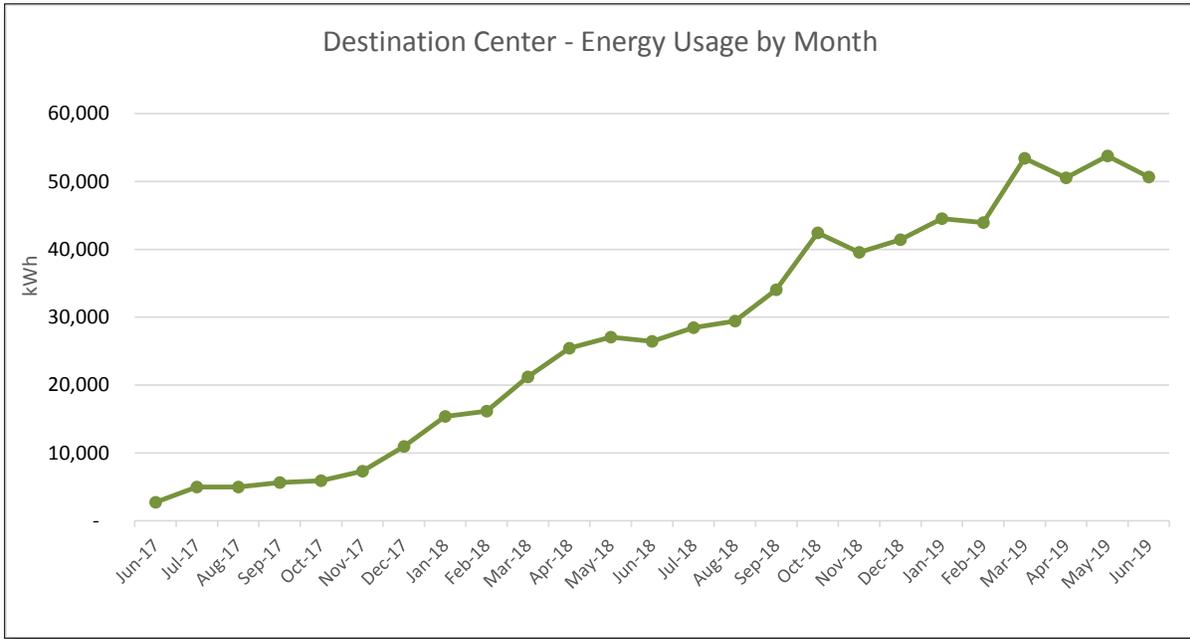
Growth in the number of participating sites and charging ports in Charge Ready and corresponding electricity consumption has been fairly consistent in all segments. This growth represents significant environmental benefits and progress toward meeting the state of California’s GHG reduction goals.

Figure 4.5 Workplace Energy Usage by Month



Year	2017							2018												2019					
Month	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
Site Count	3	5	7	9	11	14	16	20	21	25	27	27	28	29	29	29	29	29	32	34	34	35	35	35	40
Port Count	40	46	179	197	224	265	307	354	434	528	552	552	576	596	596	596	596	596	625	642	642	660	660	660	739

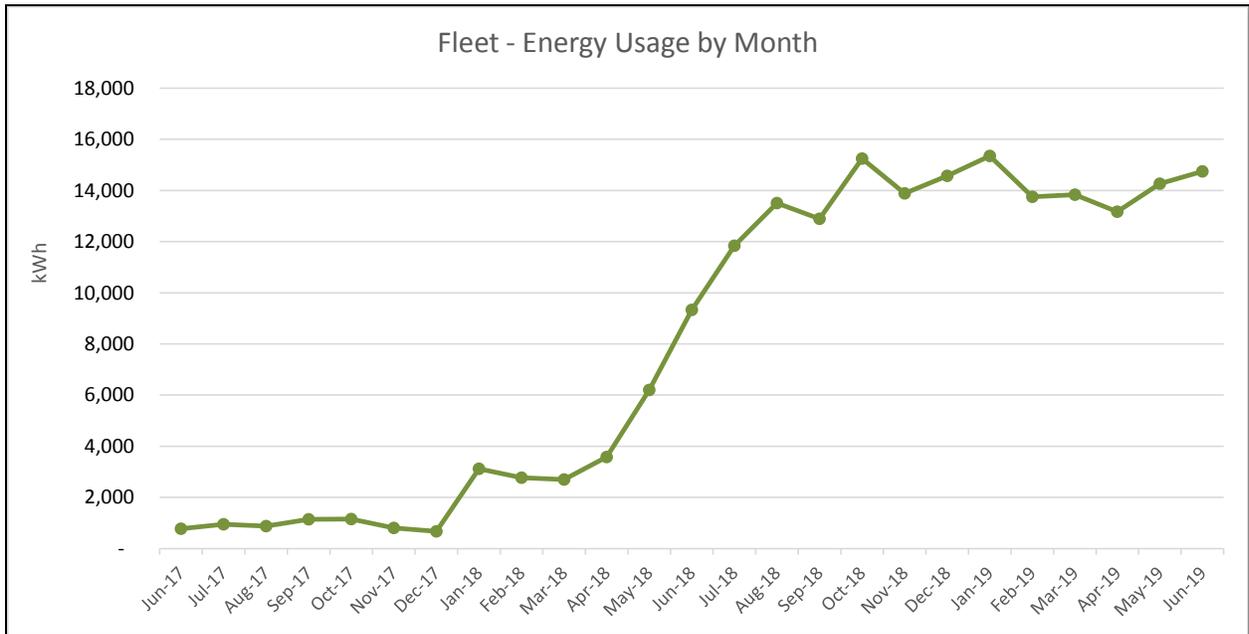
Figure 4.6 Destination Center Usage by Month¹⁸



Year	2017							2018												2019						
Month	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	
Site Count	6	12	12	14	14	16	16	20	21	21	21	21	21	22	22	22	22	22	22	22	22	22	22	22	23	
Port Count	42	99	97	117	117	141	141	199	222	222	222	222	222	234	234	234	234	234	234	234	234	234	234	234	234	250

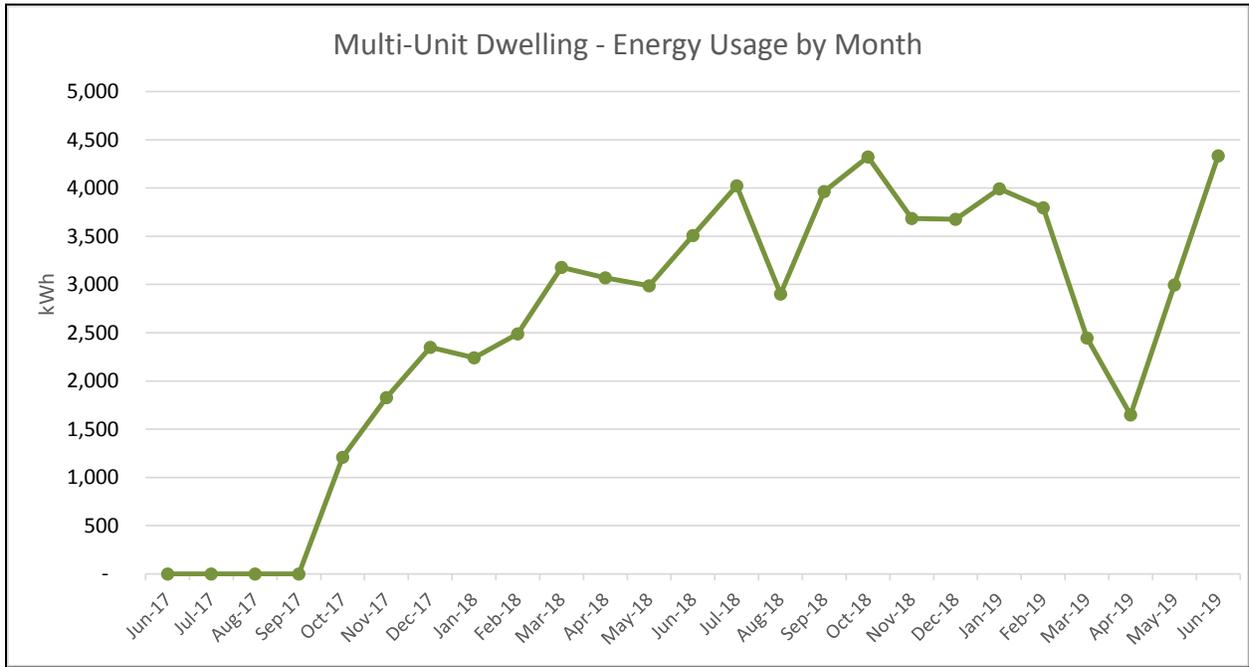
¹⁸ One site excluded in August 2017 due to data issues.

Figure 4.7 Fleet Usage by Month



Year	2017							2018												2019					
Month	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
Site Count	2	2	3	3	3	3	5	5	5	6	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
Port Count	15	15	22	22	22	22	46	46	46	77	83	83	83	83	83	83	83	83	83	83	83	83	83	83	83

Figure 4.8 Multi-Unit Dwellings Usage by Month



Year	2017							2018												2019					
Month	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
Site Count	0	0	0	0	1	1	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Port Count	0	0	0	0	10	10	22	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35

5. CUSTOMER OUTREACH AND ENROLLMENT

5.1. Charge Ready Education & Outreach

Charge Ready education and outreach efforts are designed to increase Pilot awareness, consideration, and adoption among SCE customers. SCE continues to track and monitor Pilot activities to inform subsequent phases of Charge Ready.

Table 5.1 presents the data collected for the Charge Ready Pilot Landing Page to measure website traffic from Q1 2017 to Q2 2019. An increase in website activity was expected in Q1 2019, as the Pilot began to move applications forward through the steps of the process. In Q2, a further increase in website activity was expected due to additional email outreach to all eligible segments, along with direct-to-customer outreach by Account Managers to promote the Pilot and address customer questions.

Additionally, SCE conducted targeted Multi-Unit Dwelling outreach in Q1 and Q2, which included development of simplified collateral and face-to-face Account Manager outreach to educate customers and increase interest in the Pilot.

Table 5.1 Charge Ready Pilot Landing Page Metrics

Metric	Q3 2017	Q4 2017	Q1 2018	Q2 2018	Q3 2018	Q4 2018	Q1 2019	Q2 2019
Unique Visitor Count	910	835	1,300	1,878	2,573	1,382	2,357	3,487
Repeat Visitor Count	254	234	545	793	602	564	963	1,060
Page Views	1,444	1,317	2,045	3,408	3106	2,251	4,201	4,669
Bounce Rate	47.86%	50.59%	57.81%	63.92%	64.32%	56.10%	70.15% ¹⁹	66.56%

¹⁹ SCE discovered a miscalculation in Q1 Bounce Rate reporting. Table 5.1 is now corrected.

5.2. Market Education

Separately from its education and outreach efforts to support enrollment in Charge Ready Pilot, SCE also refreshed the EV webpages on SCE.com, and grouped the content into the following categories: (1) EV overview, Rebates and Incentives (2) Rates and Savings and (3) Charging Your EV. The Rebates and Incentives page was developed in Q1, and may have received a significant traffic increase in Q2 because of a separate marketing campaign for the Clean Fuel Reward program. The Rates and Savings and Charging Your EV pages are new as of Q1 2019.

Table 5.2 Charge Ready EV Awareness Website Metrics

EV Awareness	Q1 2018	Q2 2018	Q3 2018	Q4 2018	Q1 2019	Q2 2019
Electric Vehicle Overview Page on SCE.com²⁰						
Unique Visitor Count	14,102	7,484	8,152	8,508	8,419	10,498
Repeat Visitor Count	10,388	3,390	3,971	3,176	3,488	4,510
Page Views	3,714	11,466	11,760	11,995	11,830	15,008
Bounce Rate ²¹	635	25.87%	24.41%	24.25%	25.05%	24.49%
Multi-page Visits	8,334	7,786	8,481	8,732	8,783	14,154
Q1-Q2 2019 Simplified / Refreshed content on sce.com: Page View Measurement						
EV Rebates and Incentives Page	N/A				3,934	61,678
Rates and Savings Page	N/A				704	4,242
Charging Your EV Page	N/A				3,685	2,757

For SCE's Market Education efforts, customer awareness of electric vehicle benefits and messaging are tracked using SCE's Customer Attitude Tracking (CAT) survey. The CAT survey is a quarterly tool designed to assess and track attitudes, brand favorability, and awareness of relevant marketing messages among SCE customers. This telephone survey is conducted with 450 randomly-selected SCE households and 250 small businesses by an independent marketing research firm. Customers are asked to recall and rate messaging around the benefits of electric vehicles and preparing to buy or lease an electric vehicle, as well as SCE's role in supporting and advancing electric transportation.

²⁰ <https://www.sce.com/wps/portal/home/residential/electric-cars/>

This page provides an overview of the EV-related content for residential customers on the website, and includes links to pilots (Submeter, Charge Ready) and EV content for businesses. Customers can navigate to this site without a vanity URL.

²¹ Bounce rate is the percentage of single page visits.

Since the campaign fully launched in late August 2016, the data collected from the 2016 Q1, Q2, and Q3 CAT surveys was used to establish a baseline around message recall.

The following table summarizes the CAT survey baseline data. Respondents were asked, “In the past three months, do you recall seeing, hearing, or reading about any ads about SCE and the benefits of electric vehicles?”

Table 5.3 CAT Survey Results

Response	Baseline (Q1-Q3 2016)	Q2 2017	Q3 2017 ²²	Q4 2017	Q1 2018	Q2 2018	Q3 2018	Q4 2018
Total Respondents	1,354	450	600	600	600	600	450	450
Yes	189 14%	54 12%	92 15%	92 15%	132 22%	99 17%	82 18%	84 19%
No	1,147 85%	378 84%	489 82%	476 79%	441 74%	480 80%	353 78%	344 76%
No Response	18 1%	18 4%	19 3%	32 5%	27 5%	21 4%	15 3%	22 5%

In Q1 2019, the CAT survey was updated and respondents were asked, “Do you recall reading, seeing, or hearing advertising with the following message: SCE is committed to electric vehicles and cleaner transportation?” The following table presents the new initial comparison data that will be used to understand the impact of our messaging. SCE will share the results of the updated CAT Survey in the future reports. The increase in affirmative responses can be attributed to a separate Clean Fuel reward marketing campaign.

Table 5.4 CAT Survey Results

Response	Q1 2019	Q2 2019
Total Respondents	757	750
Yes	227 30%	219 29%
No	364 48%	344 46%
No Response	166 22%	187 25%

²² Sample size increased in Q3 2017 to allow for additional testing related to other corporate campaigns.

5.3. Transportation Electrification Advisory Services

SCE created TE Advisory Services (TEAS) to provide business customers with a dedicated “one-stop shop” for specialized education, awareness, and support on such issues as federal, state, and local incentives, vehicle and charging equipment financing opportunities, vehicle types, and charging installation programs.

TE Advisory Services includes:

Updated web content on SCE.com business section, which includes information on:

- Vehicle types
- Charging Infrastructure
- SCE's EV Rates
- Information specific to MUDs, Fleets, Workplaces, and Public sites
- Links to additional tools, resources and fact sheets
- Calls to action to reach out to SCE for more information and support (Account Manager or 800#)

Self-service online tools to assist customers:

- The Charge Port Estimator, which estimates the number of charge ports customers may need at their sites
- A Rate Analysis Tool, based on customers' numbers of estimated charge ports and segment types
- A customer self-administered EV survey for workplaces and MUDs

Fact Sheets: Customer-facing PDFs covering the following TE topics, including links to additional resources:

- Transportation Electrification Overview
- Fleet Conversion
- MUDs
- Vehicle to Grid Integration
- Planning for Charging Infrastructure
- Understanding GHG Emissions from Transportation
- Overview of Fleet Segments and available EV alternatives

In addition to the above, TEAS completed in-person services for

approximately 130 business customers in 2019. Services included the following:

- An initial fleet assessment (including GHG savings calculations) to help customers evaluate business cases for converting fleets of vehicles to TE technology
- A Low Carbon Fuel Source Calculator was added to the Fleet Assessment Report to help customers identify the estimated credit value per kW used.
- Infrastructure Assessments to assist customers in evaluating a potential deployment of charging equipment

Customers selected were those who had shown a commitment to sustainability, potential for a larger scale conversion/deployment, and had participated in multiple discussions with their Account Managers to confirm their interest in TE. A combination of government entities and commercial businesses were selected to include a representative mix of customers. SCE is tracking web traffic and has established the following baselines presented in the table below to compare against as more outreach is conducted.

Table 5.5 TEAS web traffic

		Unique Visitor Count	Page Views	Multi-Page
Q4 2017: Baseline	Workplace	292	507	346
	Public	121	188	143
	Fleet	138	281	165
	MUD	69	162	111
Q1 2018	Workplace	360	587	388
	Public	174	236	167
	Fleet	139	220	141
	MUD	105	143	112
Q2 2018	Workplace	434	683	443
	Public	188	263	167
	Fleet	193	310	194
	MUD	146	206	129
Q3 2018	Workplace	403	675	425

	Public	190	270	149
	Fleet	206	360	219
	MUD	129	203	136
Q1 2019	Workplace	416	611	195
	Public	195	257	62
	Fleet	198	278	80
	MUD	122	185	63
Q2 2019	Workplace	494	738	461
	Public	278	379	257
	Fleet	282	408	269
	MUD	163	275	172

5.4. Outreach Events

SCE participated in five Ride-and-Drive events in Q2 2019, with an estimated 109,400 customer impressions and 1,785 total customer interactions year-to-date. The objective of our Ride-and-Drive efforts is to bridge the gap between our broad EV marketing efforts and EV adoption. The table below shows a summary of the events for Q2 2019.

Table 5.6 Ride and Drive Events

Event Date	Event Name	Location	Estimated Customer Impressions	Estimated Customer Interactions
April 20, 2019	Compton Earth Day	Compton, CA	1,000	75
April 27, 2019	Pomona Beautification Day	Compton, CA	1,000	100
May 4, 2019	Corona Cinco de Mayo Parade	Corona, CA	5,000	30
May 18, 2019	Compton Annual Youth Air Fair	Corona, CA	1,200	300
May 19, 2019	626 Streets	San Gabriel, CA	100,000	1,000

In addition to the Ride and Drive events, SCE attended and participated in the following conferences and events to interact with customers, mostly in the Multi-Unit dwelling segment to help increase participation in Bridge.

Table 5.7 Outreach Events

Event Date	Event Name	Location	Estimated Customer Interactions
April 17, 2019	Apartment Owners Association Trade Show	Long Beach, CA	40
April 18, 2019	Municipal Green Building Expo	Downey, CA	15
April 22, 2019	Green Day Event	Laguna Niguel, CA	20
April 30, 2019	Mammoth Lunch and Learn	Mammoth, CA	40
May 6, 2019	CA Association of Realtors	Irwindale, CA	20
May 21, 2019	Apartment Association of Orange County	Garden Grove, CA	35
June 13, 2019	California Apartment Association	Glendale, CA	12
June 19, 2019	Linc Housing	Long Beach, CA	20

6. CONCLUSION

In this quarterly report, SCE provided data and updates on progress in implementing and executing the Pilot. Customers continue to submit applications that may be approved under Bridge funding. Projects with executed agreements continued forward through the construction and installation process. By the end of the second quarter of 2019, SCE had completed infrastructure at 75 sites that support 1,147 charge ports. SCE will also continue to learn from the energy usage of the charging stations deployed under the Charge Ready Pilot.

APPENDIX

Pilot Participants with Reserved Funding

Table 0.1 Summary by Market Segment in Disadvantaged Communities

Disadvantaged Communities				
Segment	Number of Ports (Pilot)	Number of Sites (Pilot)	Number of Ports (Bridge)	Number of Sites (Bridge)
Destination Center	80	12	71	3
Workplace	538	30	312	11
Fleet	28	4	8	1
Multi-Unit Dwelling	12	1	0	0
Grand Total	658	47	391	15

Table 0.2 Summary by Market Segment in Non-Disadvantaged Communities

Non-Disadvantaged Communities				
Segment	Number of Ports (Pilots)	Number of Sites (Pilots)	Number of Ports (Bridge)	Number of Sites (Bridge)
Destination Center	203	12	49	2
Workplace	347	15	228	6
Fleet	90	4	67	4
Multi-Unit Dwelling	23	2	58	5
Grand Total	663	33	402	17

Table 0.3 Pilot Operational Metrics for Quarter

Customer Participant Request		
	Filing Assumptions	Inception-to-Date Actual
Average number of total parking spaces per site	N/A	588 parking spaces/site
<ul style="list-style-type: none"> ▪ Average number of total parking spaces per site for Disadvantaged Communities 	N/A	432 parking spaces/site
<ul style="list-style-type: none"> ▪ Average number of total parking spaces per site for Destination Centers 	N/A	896 parking spaces/site
<ul style="list-style-type: none"> ▪ Average number of total parking spaces per site for Workplaces 	N/A	562 parking spaces/site

<ul style="list-style-type: none"> Average number of total parking spaces per site for Fleets 	N/A	302 parking spaces/site
<ul style="list-style-type: none"> Average number of total parking spaces per site for Multi-unit Dwellings 	N/A	344 parking spaces/site
Percentage of total number of parking spaces located in parking structures	N/A	16%
<ul style="list-style-type: none"> Total number of parking spaces located in parking structures for Disadvantaged Communities 	N/A	15,036
<ul style="list-style-type: none"> Total number of parking spaces located in parking structures for Destination Centers 	N/A	13,273
<ul style="list-style-type: none"> Total number of parking spaces located in parking structures for Workplaces 	N/A	46,175
<ul style="list-style-type: none"> Total number of parking spaces located in parking structures for Fleets 	N/A	2,382
<ul style="list-style-type: none"> Total number of parking spaces located in parking structures for Multi-unit Dwellings 	N/A	6,706
Average fleet size ²³	N/A	6 (Fleet Segment Only) 4 (All Segments)
Percentage of applications received with charging systems already installed at the site	N/A	22%
Average number of charging systems already installed at the site	N/A	9
Average number of charge ports requested per site	26	13.6

²³ Applicants from all segment categories may indicate the number of fleet vehicles at their site (All Segments). Applicants in the fleet category intend to use the new charging station for their EV fleet (Fleet Segment Only).

▪ Average number of charge ports requested per site for Disadvantaged Communities	N/A	12.2
▪ Average number of charge ports requested per site for Destination Centers	N/A	13.7
▪ Average number of charge ports requested per site for Workplaces	N/A	13.0
▪ Average number of charge ports requested per site for Fleet	N/A	14.4
▪ Average number of charge ports requested per site for Multi-unit Dwellings	N/A	15.5

Table 10.4 Charging Station Request & Rebate

Charging Station Request & Rebate	
▪ Average Number of Level 1 charge ports approved per site	16
▪ Average Number of Level 2 charge ports approved per site	18.9
Average Number of total charge ports approved per site	18.9
Number of Level 1 EVSE stations bought	12
▪ Average number of ports per Level 1 EVSE station	1.0
Number of Level 2A EVSE stations bought	198
▪ Average number of ports per Level 2A EVSE station	1.7
Number of Level 2B EVSE stations bought	776
▪ Average number of ports per Level 2B EVSE station	1.4
Number of Level 1 EVSE stations installed with infrastructure complete	12
Number of Level 2A EVSE stations installed with completed infrastructure	198

Number of Level 2B EVSE stations installed with completed infrastructure	539
Number of Level 1 EVSE stations installed with completed customer-installation	12
Number of Level 2A EVSE stations installed with completed customer-installation	198
Number of Level 2B EVSE stations with completed customer-installation	539