Charge Ready Pilot Program

Q1/2017 Report

Issued May 31, 2017

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Background

~~Background~~

SCE's Charge Ready Program Pilot (Pilot) seeks to increase the availability of long dwell-time electric vehicle (EV) charging infrastructure. As part of the Pilot, SCE deploys, owns, and maintains the electric infrastructure needed to serve EV charging stations, or Electric Vehicle Supply Equipment (EVSE), at participating customer locations. The Pilot also offers participating customers (Customer Participants) a rebate applicable against the cost of acquiring and installing qualified EVSEs. Customer Participants must procure, operate, and maintain the charging stations in accordance with the terms and conditions of Schedule **Charge Ready Program Pilot (Schedule CRPP)**. Customer Participants may determine their own policy about the use of the charging stations (e.g., access, financial contribution from EV drivers).

In conjunction with the Pilot, SCE has launched a complementary EV Market Education effort to increase customer awareness about EVs and the benefits of fueling from the grid, including supporting California's carbon-reduction goals and improving air quality. The EV Market Education effort includes a Transportation Electrification (TE) Advisory Services program to provide a "one-stop shop" for customers to receive specialized education and support on a broad array of TE issues.

The Pilot targets key market segments for deployment, including workplaces, multi-unit dwellings (MUDs), fleet parking, and destination locations where vehicles are usually parked for at least four hours. In particular, SCE focuses some of its efforts on disadvantaged communities[1], which are disproportionately affected by low EV adoption and negative environmental impacts of gasoline- and diesel-powered vehicles.

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. The quarterly reports may also include recommendations from the Advisory Board that SCE will consider incorporating in its Phase 2 proposal.

1 http://oehha.maps.arcgis.com/apps/Viewer/index.html?appid=112d915348834263ab8ecd5c6da67f68

1 Executive Summary

1.1 Pilot Summary for Quarter

SCE achieved several milestones in Q1 2017. SCE completed the first site in the Charge Ready Program. The deployment was located in a disadvantaged community and included six charge ports to support the customer's new electric vehicle fleet. Additionally, SCE received significant interest in the Pilot and a large number of applications; as a result, SCE stopped accepting new applications into the program on January 3, 2017. SCE also received executed program agreements from 58 Customer Participants, totaling 919 charge ports. 50% of the 919 committed charge ports are located in disadvantaged communities, which is considerably higher than the Pilot's requirement to deploy 10% of charge ports in disadvantaged communities.

During the ~~quarterly~~, projects with executed agreements continued forward through the planning and design process. SCE efforts included design preparation, and obtaining customer approval of designs and execution of easements. In parallel, customers continued procuring qualified charging stations.

The table below summarizes the Pilot's expenses to date.

Table 1.1 – Pilot Summary for Quarter 1, 2017

Variables	Authorized/Planning Assumptions	Year-to-date	Remaining	% Remaining
Capital				
Utility Side Infrastructure Costs	$3,353,532	$101,653	$3,251,879	97%
Customer Side Infrastructure Costs	$7,586,387	$1,156,403	$6,429,984	85%
Easement	$115,942	$46,569	$69,373	60%
Station Testing	$30,000	$34,680	$(4,680)	0%
Business Customer Division Labor	$103,500	$10,611	$92,889	90%
Program Management Office Labor	$460,003	$401,886	$58,117	13%
Operations & Maintenance				
Rebate	$5,850,000	$0	$5,850,000	100%
Business Customer Division Labor	$51,750	$23,344	$28,406	55%
Transportation Electrification Advisory Services	$316,800	$113,514	$203,286	64%
PMO Labor & Non-Labor	$232,340	$143,010	$109,330	43%
Charge Ready ME&O, Market Reporting, SAP	$665,000	$394,218	$250,782	39%
EV Awareness	$2,830,600	$1,589,834	$1,240,766	44%
	$21,595,853	$4,015,722	$17,580,132	81%

At the end of Q1 2017, SCE continued learning from the applications in the Planning and Design and charging station procurement stages of the application process. Table 1.2 lists the main operational issues encountered during Q1 2017 and their resolutions.

Table 1.2 – Pilot Challenges and Resolutions

Issue	Resolution
SCE observed customers needing longer than 30 calendar days to select vendors and procure charging stations (Step 3 Proof of Procurement). The initial Procurement Period is 30 calendar days from SCE notifying Customer Participant that funding has been reserved for their application. At the end of Q1 2017, 62% of customers submitted their proof of procurement within 30 average business days, and 38% of customers are still pending submission and are averaging 71 business days. Common reasons for extension requests include: • Customer difficulties finding charging station models that were close to the base cost rebate • Change in customer decision maker; need to reevaluate program requirements • Request For Proposal process and/or executive signature process requires longer than 30 days for some customers; government and institution customers require longer procurement cycle times • Change in vendor quotes after customer signs program agreement	For the Pilot, SCE will be placing customers on waitlist who have exceeded procurement deadlines, including extension deadlines. For a future phase of the program, SCE recommends reevaluating base cost levels based on actual equipment and installation costs in the Pilot. SCE will also consider process improvements for customer procurement of charging stations. SCE will also continue to learn from government and institution customer participants to identify if different program requirements are needed to accommodate for these customers' unique, internal processes.
For some applications, SCE discovered that a customer's point of contact would change mid-stream due to employee turnover. A change of contact caused delays in advancing the application forward because of the new contact's lack of history of the project and knowledge of the program process.	SCE held in-person meetings with new points of contact to ensure their understanding of program requirements and next steps.

Issue	Resolution
SCE experienced construction delays due to delays in meter panel assembly and delivery for the first sites under construction. Panels were custom ordered for each site's load from one manufacturer. Additional lead time is required for the manufacturer to build and fully test for warranty purposes.	SCE expanded meter panel resources. SCE also orders panels earlier in the design process to minimize project delays.
By the end of Q1 2017, the dropout rate of customers withdrawing from the program after receiving a proposed defined plan was 10%. SCE also observed two customers drop out of program after execution of Step 2 Agreements.	SCE will account for the learned dropout rates in future program policies.

2 Customer Outreach and Enrollment

2.1 Charge Ready Education & Outreach

Charge Ready education and outreach efforts are designed to promote the Pilot to SCE customers. SCE is also testing and refining its tactics and marketing channels in preparation for a subsequent phase of Charge Ready, including email, website, social media, collateral, and account manager interaction.

Table 2.1 presents the data collected for the Charge Ready Landing Page to measure the traffic of the website. A decrease in website activity was expected in Q1 2017 since marketing and outreach for new applicants ceased on January 3, 2017.

Table 2.1 – Charge Ready Landing Page Traffic Metrics

Metric	Q4 2016	Q1 2017	% Change
Unique Visitor Count[2]	940	939	-0.11%
Repeat Visitor Count[3]	458	381	-16.81%
Page Views[4]	1,703	1,477	-13.27%
Bounce Rate[5]	54.87%[6]	51.01%[7]	-3.86%

The Q4 2016 quarterly report described SCE's targeted outreach efforts to the multi-unit dwelling (MUD) segment. As a result of that effort, SCE received two commitments in Q4 2016 and another commitment in Q1 2017, totaling 35 charge ports in MUDs. SCE is continuing to work with and reserve funds for one additional MUD customer. SCE's interactions with these four MUD customers are described in Table 2.2.

Table 2.2 – Summary of Account Manager Interactions with MUD Customers

Activity	No. Interactions Q1 2017	Cumulative Interactions
Emails[8]	10	119
Group Presentations	0	19
In-Person Visits	1	16
Positioning Event[9]	0	0
Telephone Calls	8	162
Total	28	316

In addition to supporting MUD customers, SCE continued to support active applicants through the application process. Table 2.3 summarizes all account manager interactions for all segments during Q1 2017.

Table 2.3 – Summary of Account Manager Interactions with Customers

Activity	No. Interactions Q1 2017	Cumulative Interactions
Emails[10]	803	2,437
Group Presentations	0	39
In-Person Visits	75	619
Letter	0	6
Positioning Event[11]	0	16
Telephone Calls	77	887
Total	955	3,097

2 A unique visitor is a person who visits the landing page at least once within the reporting period.
3 A repeat visitor is a person with multiple sessions of the landing page within the reporting period.
4 A page view refers to an instance of the landing page being loaded in a web browser.
5 The bounce rate is the percentage of visitors to a particular website who navigate away from the site after viewing only one page.
6 This bounce rate is expected; for customers to enroll in the Pilot, they must enter the Charge Ready Enrollment Portal, which means they would have effectively "navigated away from" the landing page; this registers as a "bounce," even though the customer has taken a positive step toward enrollment.
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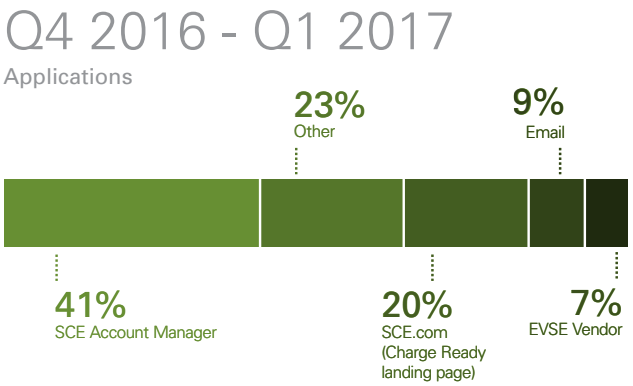
8 These are incremental, follow-up emails to the email invitations originally sent to customers at the launch of the Program.
9 Presentations provided by BCD Account Managers to industry or civic events.
10 These are incremental, follow-up emails to the email invitations originally sent to customers at the launch of the Program.
11 Presentations provided by BCD Account Managers to industry or civic events.

SCE captures how applicants heard about the Pilot through the enrollment form. A majority of customers became aware of the Pilot through SCE's account managers, the Charge Ready landing page, or other sources. The source of the customer's knowledge is detailed in Table 2.4. As no new applications were accepted in Q1 2017, there is no change in the distribution from last quarter.

Table 2.4 – Customer's Source of Knowledge of Pilot



2.2 Market Education & TE Advisory Services

Separately from its education and outreach efforts to support enrollment in Charge Ready, SCE also communicates about EVs and the benefits of fueling from the grid to a broad audience through a variety of complementary channels. These channels include:

- Paid Media: Digital banners, search engine marketing (SEM), sponsored social media ads, radio.
- Local Sponsorship: Booth sponsorship at EV-related events.
- Direct Messaging: Direct mail or email to targeted customer populations.
- Other channels: bill inserts, messaging on SCE.com, and organic social media..

To track engagement, customers exposed to the above channels are driven to relevant content on the updated sce.com EV website. During Q1 2017, SCE continued digital banner ads, radio ads, and paid social media to support market education efforts. These marketing activities, the EV Overview Page on SCE.com, and the EV Campaign Landing Page on SCE.com included translations in English, Spanish, Korean, Chinese, and Vietnamese languages. The following table includes metrics capturing traffic for key campaign pages within the site. SCE is continuing to observe increases in web traffic as the "EV IQ" campaign continued through Q1 2017.

Table 2.5 – Charge Ready EV Awareness Website Metrics

EV Awareness	Q4 2016	Q1 2017
Electric Vehicle Overview Page on SCE.com		
Unique Visitor Count	6,162	7,010
Repeat Visitor Count	2,124	2,325
Page Views	8,988	10,414
Bounce Rate	33.99%	38.30%
Multi-page Visits	5,137	5,679
Electric Vehicle Campaign Landing Page on SCE.com		
Unique Visitor Count	6,524	7,417
Repeat Visitor Count	281	598
Page Views	7,934	8,983
Bounce Rate	92.38%	90.83%
Multi-page Visits	629	878

For SCE's Market Education efforts, customer awareness of electric vehicle benefits and messaging will be 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. 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. In Q1 2017, SCE continued with similar frequency of digital, video, and radio ads as in late 2016. The Q1 2017 survey results continued to show levels of EV awareness consistent with the baseline.

Table 2.6 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 2.6 – CAT Survey Results

Response	Baseline (Q1-Q3 2016)	Q4 2016	Q1 2017
Total Respondents	1,354	450	450
Yes	189 14%	58 13%	57 13%
No	1,147 85%	383 85%	384 85%
No Response	18 1%	9 2%	8 2%

Transportation Electrification (TE) Advisory Services – In Development

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

Progress to date includes identification of self-service and limited full-service offerings to be implemented, web design/architecture, and service offering content development. TE Advisory service offerings is planned to include education & outreach on TE technologies and benefits, assessment of fleet conversion return-on-investment, charging infrastructure planning, rate analysis, and financial incentive opportunities.

Account Manager training on TE Advisory Services will be completed in Q2 2017, with full services launching in Q3 2017.

2.3 Outreach Events

SCE conducted two outreach events in Q1 2017 to increase customers' EV awareness and gauge interest in future enrollment in the Charge Ready Program. In these presentations, SCE provided customers with an overview of the program and an update on application progress, and tracked potential customer interest for future phases of the program. SCE employees who attend the events provide an estimate of the number of customer communications completed during the event. These outreach events are shown in Table 2.7.

Table 2.7 – Charge Ready Education & Outreach and Market Education & TE Advisory Services Outreach Events

Mar. 1, 2017 | Downey | Charge Ready Education & Outreach
Local Government Kickoff Workshop: **200** estimated customer interactions.

Feb. 24, 2017 | Bakersfield | Charge Ready Education & Outreach
San Joaquin Valley EV Partnership - Workplace Charging Workshop: **50** estimated customer interactions.

3 Electric Vehicle Supply Equipment Qualification

3.1 Requirements

The Pilot qualifies three different types of charging system profiles:

- Level 1 charging system, without network capability,
- Level 2 "A" charging system, with network capability integrated into the EVSE, and
- 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

Following four rounds of the RFI process held through 2017, SCE is currently evaluating 131 submitted charging systems.

The Pilot's Approved Package List[12] summarizes the vendors and EVSE models available to Customer Participants as of Q1 2017. The Pilot offerings stayed the same since Q4 2016; the Pilot currently offers 32 models from 8 vendors. Tables 3.1 and 3.2 provide a summary of the different charging system types and features of EVSE models that have been approved to date.

Graph 3.1 – Number of Approved Charging System Models

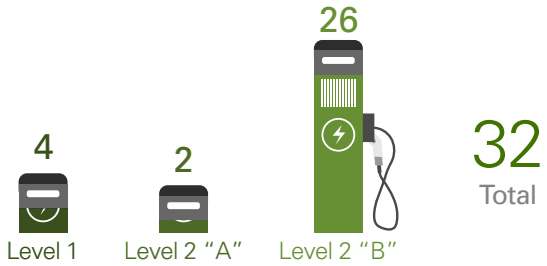


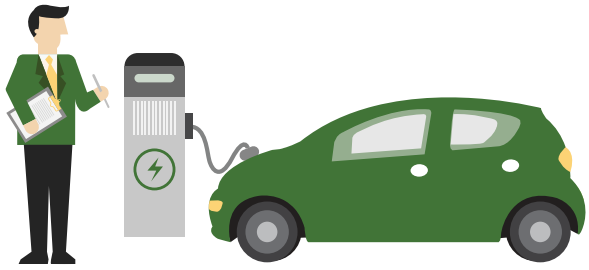
Table 3.2 – EVSE Model Summary

Average number of circuits per EVSE	1.4
Average number of ports per circuit	1.4
Number of wall EVSE units	1
Number of pedestal units	11
Number of both wall and pedestal units	13
Number of both wall and pedestal units	8

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][13]." 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 Q1 2017 are shown in Table 3.3. The base cost values have not changed from the prior reporting period.

Table 3.3 – Base Cost of Charging Systems

Charging System Type	Base Cost
Level 1	$1,396
Level 2 "A"	$2,188
Level 2 "B"	$1,611



12 The Pilot's Approved Package List can be found on the landing page at https://on.sce.com/chargeready.
13 Charge Ready Program Testimony, Vol. 2, p. 9.

4 Electric Vehicle Charging Load

4.1 EV Charging Load

After completing deployment at participating sites, SCE will collect transactional and utility-meter data to inform EV load-related metrics, greenhouse gas (GHG) metrics, and air quality metrics. Prices paid by EV drivers and pricing strategies implemented by Customer Participants will also be collected and reported in this quarterly report, if available. The Pilot will eventually incorporate a Demand Response program to address general load-shaping capabilities. The Pilot report will analyze different Customer Participants' load shape profiles, at the grid and local capacity areas, and load management strategies.

In addition to requiring that all Customer Participants take service under a time-of-use rate plan, the Pilot will also incorporate a Demand Response (DR) program for Customer Participants with Level 2 charging stations. SCE filed a DR Pilot proposal for Commission approval as part of SCE's 2018-2022 DR program application. The DR Pilot will inform the Charge Ready Demand Response program, which will be identified in 2019. Additional load-management strategies, including prices paid by EV drivers and pricing strategies implemented by the Customer Participants, will also be collected and reported where available.

One project site was completed in Q1 2017. However, since the EV load data reflected only a limited number of days, SCE is not reporting EV Charging Load in this quarterly report.

5 Operations

5.1 Charge Ready Pilot Operations

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.

Status Overview

During Q1 2017, SCE continued to reserved funds for projects signing **Step 2 – Agreement**. An additional 12 applications executed program agreements in Q1 2017, totaling 232 charge ports. The cumulative committed charge ports by the end of Q1 2017 were 919 charge ports. Once infrastructure and rebate funds are fully reserved, SCE will begin placing applicants submitting executed agreements on a waitlist.

Another focus of Q1 2017 was supporting customers in their procurement of charging stations. To ensure charging stations are available at the time of infrastructure completion, the Pilot requires customers to procure charging stations before construction can begin. The procurement period begins once a customer executes the program agreement and funds are reserved for the customer's application. The initial procurement period is 30 calendar days from funds reservation, and customers are allowed an additional 15 days if they submit an extension request to SCE. SCE also allows, at its discretion, extensions beyond 45 days, provided the customer is actively procuring its charging stations. Early in the application process, SCE Account Representatives encourage customers to begin their procurement process due to the Pilot's procurement period deadlines. SCE is learning that most customers require longer than 30 calendar days. Customers that submitted proof of purchase by the end of Q1 2017 are averaging 42 calendar days (or 30 business days). Majority of customers submit the maximum allowed two extension requests. At the end of the quarter, several applications have not yet submitted proof of purchase for their sites; these applications are averaging 98 calendar days (or 70 business days). Many of these applicants are government and institution customers. These customers typically require a competitive bid, which requires longer lead times for the request for proposal (RFP) process. Further, these customers have structured approval processes and typically must wait for their next board meeting to approve procurement of charging stations. As a result of longer procurement timelines, SCE is currently experiencing delays in starting construction for these customers' sites.

As customers procured their charging stations, SCE's parallel efforts included preparing and requesting customer approval of preliminary designs, preparing and requesting customer execution of easements, and coordination of permit issuance with the Authority Having Jurisdiction (AHJ).

- SCE's current challenge with site designs is obtaining customer approvals before moving forward with AHJ plan check review. Applicants who provided approvals in Q1 2017 had an average approval cycle time of 8.8 business days. However, average cycle time for site designs pending customer approval at the end of Q1 2017 is 37.5 business days. In many cases, the Customer Participant is not the authorized personnel to approve designs. Identifying the appropriate customer contact is the main challenge in acquiring site design approvals. SCE is continuing to hold regular check-in meetings with these customers to drive next steps.
- Based on initial projects with executed final easements, easement cycle times are not presenting a significant delay in the infrastructure deployment timeline. By the end of Q1 2017, SCE executed easements for 7 sites. The average cycle time is 23.7 business days. SCE will continue to learn from additional executed easements.
- Based on initial projects with issued permits, permit cycle times are not presenting a significant delay in the infrastructure deployment timeline. Average cycle time for permit issuance for the first 16 projects is 15.6 business days. Since a majority of the first projects are local governments, SCE will continue to learn about actual AHJ cycle times from other, future project permits.

Another challenge was customers withdrawing from the Pilot after signing the Step 2 Program Agreement. Two applicants notified SCE of their withdrawal from the program due to loss of funding or management support or challenges with easements. The Pilot incurred design costs for these withdrawn projects which reduced the funding available to other customers requesting to participate in the program. SCE will evaluate current Pilot processes and future program design improvements that minimize the design costs until customers confirm procurement of charging stations.

Infrastructure construction was completed for one site in Q1 2017, and several others were scheduled for construction. SCE experienced construction delays in the manufacturing and delivery of meter panels. For the Pilot, panels are custom ordered for each site, and the manufacturer must build and fully test the panels for warranty purposes. The delay in meter panels delayed the first sites in construction, but SCE now orders meter panels early in the design process to avoid construction delays at other sites. SCE has also expanded the number of meter panel manufacturers to ensure all sites can be supported. For a future phase of the program, SCE may evaluate the possibility of bulk ordering standardized meter panels to eliminate construction delays.

Table 5.1 summarizes the Pilot's operational metrics about customer applications in Charge Ready. The metrics in the table capture the project activity from the launch of the Pilot on May 27, 2016, to March 31, 2017. Where applicable, the distribution across market segments, as well as the total number in disadvantaged communities, is provided.

Table 5.1 – Pilot Operational Metrics for Quarter

Percentage of total applications received

	Planning Assumptions	Quarter 1, 2017	Year-to-Date Actual	Toward Goal
	58 sites, 1,500 charge ports	0 sites, 0 charge ports	334 sites, 2,043 charge ports	576%, 136%

Number of approved and confirmed sites (Step 2 Agreement signed)

	Planning Assumptions	Quarter 1, 2017	Year-to-Date Actual	Toward Goal
	58 sites, 1,500 charge ports	15 sites, 232 charge ports	58 sites, 919 charge ports	100%, 61%
Disadvantaged Communities	N/A	18 sites, 264 chargers	35 sites, 458 chargers	N/A
Destination Centers	N/A	6 sites, 67 chargers	23 sites, 261 chargers	N/A
Workplaces	N/A	5 site, 101 chargers	26 sites, 546 chargers	N/A
Fleet	N/A	3 site, 52 chargers	6 sites, 77 chargers	N/A
Multi-Unit Dwellings	N/A	1 sites, 12 chargers	3 sites, 35 chargers	N/A

Percentage of applicants rejected

	Planning Assumptions	Quarter 1, 2017	Year-to-Date Actual	Toward Goal
	N/A	32 sites 119 requested chargers	108 sites 483 requested chargers	N/A

Percentage of applicants withdrawn

	Planning Assumptions	Quarter 1, 2017	Year-to-Date Actual	Toward Goal
	N/A	31 sites, 247 chargers	135 sites, 614 chargers	N/A

Number of applicants withdrawn after signing Step 2 - Agreement

	Planning Assumptions	Quarter 1, 2017	Year-to-Date Actual	Toward Goal
	N/A	2	2	N/A

Total number of charge ports installed

	Planning Assumptions	Quarter 1, 2017	Year-to-Date Actual	Toward Goal
	N/A	6	6	N/A

Average number of charge ports installed per site

	Planning Assumptions	Quarter 1, 2017	Year-to-Date Actual	Toward Goal
	N/A	6	6	N/A

Percentage of completed projects

	Planning Assumptions	Quarter 1, 2017	Year-to-Date Actual	Toward Goal
	58 sites, 1,500 charge ports	1 site 6 charge ports	1 site 6 charge ports	N/A
Disadvantaged Communities	N/A	100%	100%	N/A
Destination Centers	N/A	0%	0%	N/A
Workplaces	N/A	0%	0%	N/A
Fleet	N/A	100%	100%	N/A
Multi-Unit Dwellings	N/A	0%	0%	N/A

Table 5.2 – Customer Participant Request

Customer Participant Request	Planning Assumptions	Year-to-Date Actual
Average number of total parking spaces per site	N/A	621 parking spaces/site
Percentage of total number of parking spaces located in parking structures	N/A	12%
Average fleet size[14]	N/A	6 (Fleet Segment Only) 4 (All Segments)
Percentage of applications received with charging systems already installed at the site	N/A	15%
Average number of charging systems already installed at the site	N/A	10
Average number of charge ports requested per site	26	7.6

14 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 5.3 – Pilot Costs

	Planning Assumptions	Year-to-Date Actual	Toward Goal
Total estimated Pilot costs (SCE infrastructure plus rebate paid)[15]	$16,792,136	$12,674,566 919 charge ports	72%
Average estimated cost per site (T&D + Customer infrastructure + rebate)[16]	$291,070 ($11,195 * 26 chargers)	Average Cost per Site: $218,527 Average No. Charge Ports per Site: 16	N/A
Average estimated cost per port (T&D + Customer infrastructure + rebate)[17]	$11,195	$13,792	N/A
Total amount of rebate reserved	$5,850,000	$1,127,358	19%
Average amount of rebate reserved per site	$101,400 ($3,900 * 26 chargers)	$19,437	N/A
Total amount of rebate paid	$5,850,000	$11,748	N/A
Average amount of rebate paid per site	$101,400 ($3,900 * 26 chargers)	$11,748	N/A
Total actual construction costs for SCE infrastructure	$10,942,136	$101,653	9%
Average actual construction cost for SCE infrastructure per site	$7,295	$5,050	N/A
Level 1 charging systems	N/A	$0	N/A
Level 2 charging systems	N/A	$5,050	N/A
Hybrid charging systems (both Level 1 and Level 2)	N/A	~~$5,050~~	N/A
Total actual SCE **site assessment** cost incurred by withdrawn applicants (prior to signing Step2)	N/A	**$298,770**	N/A
Average actual SCE **site assessment cost** incurred by withdrawn applicants (prior to signing Step2)	N/A	**$3,689**	N/A
Total actual SCE **site assessment, design, permit, and easement** cost incurred by withdrawn applicants (after signing Step2)	N/A	$20,720	N/A

15 Estimated program costs are based on initial site assessment. Costs are subject to customer's Step 2 Agreement.
16 Estimated program costs are based on initial site assessment. Costs are subject to customer's Step 2 Agreement.
17 Estimated program costs are based on initial site assessment. Costs are subject to customer's Step 2 Agreement.

	Planning Assumptions	Year-to-Date Actual	Toward Goal
Average actual SCE **site assessment, design, permit, and easement** cost incurred by withdrawn applicants (after signing Step2)	N/A	$6,907	N/A
Total actual SCE construction cost incurred by withdrawn applicants	N/A	$0	N/A
Average actual SCE construction cost incurred by withdrawn applicants	N/A	$0	N/A

Table 5.4 – Pilot Cycle Times

Pilot Cycle Times	
Average Customer "End to End" Cycle time by segment	Available once rebates issued
Minimum Customer "End to End" Cycle time by segment	Available once rebates issued
Maximum Customer "End to End" Cycle time by segment	Available once rebates issued
% of customer under/above average cycle time by segment	Available once rebates issued
% of customer under/above target cycle time by segment	Available once rebates issued
Average time for EVSE to be Purchased by Customer by segment[18]	29.7 business days
Average time for the Customer to execute Step 2 Agreement	28.7 business days
Average time for the Customer to confirm Site Visit date	2.7 business days
Average time to complete Site Visit	11.5 business days
Average time to complete Site Assessment	23.9 business days
Average time from EVSEs purchased by Customer to chargers installed[19]	56.0 business days
Average time for T&D to complete base map	7.3 business days
Average time to complete T&D preliminary design	16.6 business days
Average time from preliminary design sent to customer to preliminary design approved	8.8 business days

18 Time from applicant completing Step 2 Agreement form to completing Step 3 Certification form.
19 Time from Step 3 Certification form completion to chargers installed by vendors.

Pilot Cycle Times	
Average time for Customer to execute contingent easement	30.4 business days
Average time for Customer to execute final easement	14.3 business days
Average time to complete T&D final design	9.3 business days
Average time to complete utility-infrastructure permits	5.7 business days
Average time to complete customer-infrastructure permits	15.6 business days
Average time from ready to break ground to final inspection completed	28.0 business days
Average time from final inspection completed to Rebate Check Issued	Available once rebates issued

Table 5.5 – Charging Station Request & Rebate

Charging Station Request & Rebate	
Number of Level 1 charge ports requested[20]	25
Number of Level 2 charge ports requested[21]	894
Number of total charge ports approved	919
Average Number of Level 1 charge ports approved per site	8
Average Number of Level 2 charge ports approved per site	16
Number of Level 1 EVSE bought	12
Average number of ports per Level 1 EVSE	1.0
Number of Level 2A EVSE bought	135
Average number of ports per Level 2A EVSE	1.7
Number of Level 2B EVSE bought	265
Average number of ports per Level 2B EVSE	1.4
Number of Level 1 EVSE installed	0
Number of Level 2A EVSE installed	0
Number of Level 2B EVSE installed	3
Rebate amount reserved for Level 1 ports	$19,356
Rebate amount reserved for Level 2A ports	$240,941

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

21 IIn the Step 2 Agreement, the applicant indicates the requested number of Level 2 EVSE to be approved and installed under the Program. The number of installed Level 2 EVSE must match the number of Level 2 EVSE requested in Step 2 Agreement.

Charging Station Request & Rebate	
Rebate amount reserved for Level 2B ports	$449,626
Rebate amount paid for Level 1 ports	$0
Rebate amount paid for Level 2A ports	$0
Rebate amount paid for Level 2B ports	$0

5.2 Supplier Diversity

The architecture and engineering firm and general contractors selected for Charge Ready are 100% diverse business enterprises (DBEs).

5.3 Collaboration Efforts with Complementary EV Programs

SCE is engaging with federal, state, and local government agencies to identify collaboration opportunities in connection with Charge Ready. In Q1 2017, SCE supported a ride and drive with Plug-in America in Long Beach at the Alpert Jewish Community Center's annual Purim Festival on March 12, 2017. The purpose was to provide hands-on experiential education and raise awareness about plug-in electric vehicles and charging in low-to-moderate income or disadvantaged communities.

SCE also began planning efforts for a ribbon-cutting ceremony for the first site complete in the Pilot; the customer event is planned to include other complimentary programs. SCE will report out on this event in the Q2 2017 report.

5.4 Disadvantaged Communities Outreach Events

SCE's outreach events for Disadvantaged Communities in ~~Q4 2016~~ are summarized in the table below. SCE employees who attend the events provide an estimate of the number of communications with a customer in a disadvantaged community during the event.

In December 2016, SCE conducted the first Consumer Advisory Panel sessions. The purpose of this high level concept plan is to design, manage, and facilitate "listening" sessions with key stakeholders about the barriers disadvantaged communities face in acquiring electric vehicles. These "listening" sessions allow SCE to learn about potential barriers and opportunities to develop and design a future Phase 2 program that benefits disadvantaged communities throughout SCE's service area. In Q1 2017, SCE prepared a report summarizing the community brainstorming session. The report, titled "Making Clean Energy Accessible in Low Income and Disadvantaged Communities," describes the barriers and recommendations for electric vehicle adoption. A copy of the report can be found in the Appendix.

Table 5.3 – Disadvantaged Community Outreach Events

Feb. 24, 2017 | Bakersfield
San Joaquin Valley EV Partnership - Workplace Charging Workshop:
50 estimated customer interactions.

Mar. 9, 2017 | Costa Mesa Orange County
Apartment Association of Orange County Trade Show:
1,200 estimated customer interactions.

Mar. 17, 2017 | Anaheim
California Association of Community Managers Trade Show (for Property Managers):
625 estimated customer interactions.

6 Conclusion

6.1 Conclusion

In this quarterly report, SCE provided data and updates on progress in implementing and executing the Charge Ready and Market Education Pilot, including the challenges we encountered and the solutions we are developing to mitigate them.

During Q1 2017, SCE completed the first operational site in the Charge Ready program. Several other applicants also reached the planning, design, and construction stages of the Pilot. SCE learned about the charging station procurement process, customer design approval timelines, actual dropout rates, lead times for construction materials, Authority Having Jurisdiction (AHJ) permit timelines and processes, and easement execution. In the next quarter, SCE will be able to learn from more constructed sites and identify additional program improvements. SCE will also be able to learn from the energy usage of the first charging stations deployed under the Pilot.

Appendix

Appendix

Reports

Making Clean Energy Accessible
Format: Adobe® Acrobat

Pilot Operational Metrics for Quarter

Percentage of total applications received

	Planning Assumptions	Quarter 1, 2017	Year-to-Date Actual	Toward Goal
	58 sites, 1,500 charge ports	0 sites, 0 charge ports	334 sites, 2,043 charge ports	576%, 136%
Disadvantaged Communities	N/A	0%	47%	N/A
Destination Centers	N/A	0%	24%	N/A
Workplaces	N/A	0%	65%	N/A
Fleet	N/A	0%	5%	N/A
Multi-Unit Dwellings	N/A	0%	6%	N/A

Percentage of charging stations requested

	Planning Assumptions	Quarter 1, 2017	Year-to-Date Actual	Toward Goal
	58 sites, 1,500 charge ports	0 sites, 0 charge ports	334 sites, 2,043 charge ports	576%, 136%
Disadvantaged Communities	10%	0%	37%	368%
Destination Centers	N/A	0%	27%	N/A
Workplaces	N/A	0%	59%	N/A
Fleet	N/A	0%	8%	N/A
Multi-Unit Dwellings	N/A	0%	6%	N/A

Number of approved and confirmed sites (Step 2 Agreement signed)

	Planning Assumptions	Quarter 1, 2017	Year-to-Date Actual	Toward Goal
	58 sites, 1,500 charge ports	15 sites, 232 charge ports	58 sites, 919 charge ports	100%, 61%
Disadvantaged Communities	N/A	18 sites, 264 chargers	35 sites, 458 chargers	N/A
Destination Centers	N/A	6 sites, 67 chargers	23 sites, 261 chargers	N/A
Workplaces	N/A	5 site, 101 chargers	26 sites, 546 chargers	N/A
Fleet	N/A	3 site, 52 chargers	6 sites, 77 chargers	N/A
Multi-Unit Dwellings	N/A	1 sites, 12 chargers	3 sites, 35 chargers	N/A

Percentage of applicants rejected

	Planning Assumptions	Quarter 1, 2017	Year-to-Date Actual	Toward Goal
	N/A	32 sites 119 requested chargers	108 sites 483 requested chargers	N/A
Disadvantaged Communities	N/A	12%	40%	N/A
Destination Centers	N/A	6%	25%	N/A
Workplaces	N/A	22%	68%	N/A
Fleet	N/A	0%	1%	N/A
Multi-Unit Dwellings	N/A	3%	6%	N/A

Percentage of applicants withdrawn

	Planning Assumptions	Quarter 1, 2017	Year-to-Date Actual	Toward Goal
	N/A	31 sites, 247 chargers	135 sites, 614 chargers	N/A
Disadvantaged Communities	N/A	10%	45%	N/A
Destination Centers	N/A	4%	17%	N/A
Workplaces	N/A	16%	71%	N/A
Fleet	N/A	2%	5%	N/A
Multi-Unit Dwellings	N/A	1%	7%	N/A

Number of applicants withdrawn after signing Step 2 - Agreement

	Planning Assumptions	Quarter 1, 2017	Year-to-Date Actual	Toward Goal
	N/A	2	2	N/A
Disadvantaged Communities	N/A	1	1	N/A
Destination Centers	N/A	0	0	N/A
Workplaces	N/A	2	2	N/A
Fleet	N/A	0	0	N/A
Multi-Unit Dwellings	N/A	0	0	N/A

Total number of charge ports installed

	Planning Assumptions	Quarter 1, 2017	Year-to-Date Actual	Toward Goal
	N/A	6	6	N/A
Disadvantaged Communities	N/A	6	6	N/A
Destination Centers	N/A	0	0	N/A
Workplaces	N/A	0	0	N/A
Fleet	N/A	6	6	N/A
Multi-Unit Dwellings	N/A	0	0	N/A

Average number of charge ports installed per site

	Planning Assumptions	Quarter 1, 2017	Year-to-Date Actual	Toward Goal
	N/A	6	6	N/A
Disadvantaged Communities	N/A	6	6	N/A
Destination Centers	N/A	0	0	N/A
Workplaces	N/A	0	0	N/A
Fleet	N/A	0	0	N/A
Multi-Unit Dwellings	N/A	0	0	N/A

Percentage of completed projects

	Planning Assumptions	Quarter 1, 2017	Year-to-Date Actual	Toward Goal
	58 sites, 1,500 charge ports	1 site 6 charge ports	1 site 6 charge ports	N/A
Disadvantaged Communities	N/A	100%	100%	N/A
Destination Centers	N/A	0%	0%	N/A
Workplaces	N/A	0%	0%	N/A
Fleet	N/A	100%	100%	N/A
Multi-Unit Dwellings	N/A	0%	0%	N/A

Average number of total parking spaces per site

Customer Participant Request	Planning Assumptions	Year-to-Date Actual
	N/A	621 parking spaces/site
Disadvantaged Communities	N/A	375 parking spaces/site
Destination Centers	N/A	931 parking spaces/site
Workplaces	N/A	523 parking spaces/site
Fleet	N/A	404 parking spaces/site
Multi-Unit Dwellings	N/A	636 parking spaces/site

Percentage of total number of parking spaces located in parking structures

Customer Participant Request	Planning Assumptions	Year-to-Date Actual
	N/A	12%
Disadvantaged Communities	N/A	1,040
Destination Centers	N/A	12,100
Workplaces	N/A	43,982
Fleet	N/A	3,764
Multi-Unit Dwellings	N/A	3,134

Customer Participant Request	Planning Assumptions	Year-to-Date Actual
Average fleet size[22]	N/A	6 (Fleet Segment Only) 4 (All Segments)
Percentage of applications received with charging systems already installed at the site	N/A	15%
Average number of charging systems already installed at the site	N/A	10

Average number of charge ports requested per site

Customer Participant Request	Planning Assumptions	Year-to-Date Actual
	26	7.6
Disadvantaged Communities	N/A	8.3
Destination Centers	N/A	9.2
Workplaces	N/A	9.8
Fleet	N/A	13.1
Multi-Unit Dwellings	N/A	8.0

22 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).

Pilot Costs

Pilot Costs			
	Planning Assumptions	Year-to-Date	Towards Goal
Total estimated Pilot costs (SCE infrastructure plus rebate paid)[23]	$16,792,136	$12,674,566 919 charge ports	72%
Average estimated cost per site (T&D + Customer infrastructure + rebate)[24]	$291,070 ($11,195 * 26 chargers)	Average Cost per Site: $218,527 Average No. Charge Ports per Site: 16	N/A
Average estimated cost per port (T&D + Customer infrastructure + rebate)[25]	$11,195	$13,792	N/A

Total estimated Pilot costs

Pilot Cost			
Disadvantaged Communities	N/A	$5,175,891	N/A
Destination Centers	N/A	$4,150,474	N/A
Workplaces	N/A	$6,970,317	N/A
Fleet	N/A	$1,038,259	N/A
Multi-Unit Dwellings	N/A	$515,516	N/A

Total amount of rebate reserved

Pilot Cost			
	$5,850,000	**$1,127,358**	**19%**
Average amount of rebate reserved per site	$101,400 ($3,900 * 26 chargers)	$19,437	N/A
Disadvantaged Communities	N/A	$887,086	N/A
Destination Centers	N/A	$284,966	N/A
Workplaces	N/A	$735,536	N/A
Fleet	N/A	$72,591	N/A
Multi-Unit Dwellings	N/A	$34,265	N/A

23 Estimated program costs are based on initial site assessment. Costs are subject to customer's Step 2 Agreement.
24 Estimated program costs are based on initial site assessment. Costs are subject to customer's Step 2 Agreement.
25 Estimated program costs are based on initial site assessment. Costs are subject to customer's Step 2 Agreement.

Total amount of rebate paid

Pilot Cost			
	$5,850,000	$11,748	N/A
Disadvantaged Communities	N/A	$11,748	N/A
Destination Centers	N/A	$0	N/A
Workplaces	N/A	$0	N/A
Fleet	N/A	$11,748	N/A
Multi-Unit Dwellings	N/A	$0	N/A

Average amount of rebate reserved per site

Pilot Cost			
	$101,400 ($3,900 * 26 chargers)	$11,748	N/A
Disadvantaged Communities	N/A	$11,748	N/A
Destination Centers	N/A	$0	N/A
Workplaces	N/A	$0	N/A
Fleet	N/A	$11,748	N/A
Multi-Unit Dwellings	N/A	$0	N/A

Total actual construction costs for SCE infrastructure

Pilot Cost			
	$10,942,136	$93,575	XX%
Disadvantaged Communities	N/A	$93,575	N/A
Destination Centers	N/A	$0	N/A
Workplaces	N/A	$0	N/A
Fleet	N/A	$93,575	N/A
Multi-Unit Dwellings	N/A	$0	N/A

Average actual construction cost for SCE infrastructure per site

	Pilot Cost		
	$7,295	$5,050	N/A
Average actual construction cost for SCE infrastructure for sites with all Level 1 charging systems	N/A	$0	N/A
Average actual construction cost for SCE infrastructure for sites with all Level 2 charging systems	N/A	$5,050	N/A
Average actual construction cost for SCE infrastructure for sites with hybrid charging systems (both Level 1 and Level 2)	N/A	$0	N/A
Total actual SCE **site assessment** cost incurred by withdrawn applicants (prior to signing Step2)	N/A	**$298,770**	N/A
Average actual SCE **site assessment** cost incurred by withdrawn applicants (prior to signing Step2)	N/A	**$3,689**	N/A
Total actual SCE **site assessment, design, permit, and easement** cost incurred by withdrawn applicants (after signing Step2)	N/A	$20,720	N/A
Average actual SCE **site assessment, design, permit, and easement** cost incurred by withdrawn applicants (after signing Step2)	N/A	$6,907	N/A
Total actual SCE construction cost incurred by withdrawn applicants	N/A	$0	N/A
Average actual SCE construction cost incurred by withdrawn applicants	N/A	$0	N/A

Pilot Cycle Times

Pilot Cycle Times	
Average Customer "End to End" Cycle time by segment	Available once rebates issued
Minimum Customer "End to End" Cycle time by segment	Available once rebates issued
Maximum Customer "End to End" Cycle time by segment	Available once rebates issued
% of customer under/above average cycle time by segment	Available once rebates issued
% of customer under/above target cycle time by segment	Available once rebates issued
Average time for EVSE to be Purchased by Customer by segment[26]	29.7 business days
Average time for the Customer to execute Step 2 Agreement	28.7 business days
Average time for the Customer to confirm Site Visit date	2.7 business days
Average time to complete Site Visit	11.5 business days
Average time to complete Site Assessment	23.9 business days
Average time from EVSEs purchased by Customer to chargers installed[27]	56.0 business days
Average time for T&D to complete base map	7.3 business days
Average time to complete T&D preliminary design	16.6 business days
Average time from preliminary design sent to customer to preliminary design approved	8.8 business days
Average time for Customer to execute contingent easement	30.4 business days
Average time for Customer to execute final easement	14.3 business days
Average time to complete T&D final design	9.3 business days
Average time to complete utility-infrastructure permits	5.7 business days
Average time to complete customer-infrastructure permits	15.6 business days
Average time from ready to break ground to final inspection completed	28.0 business days
Average time for from final inspection completed to Rebate Check Issued	Available once rebates issued

26 Time from applicant completing Step 2 Agreement form to completing Step 3 Certification form.
27 Time from Step 3 Certification form completion to chargers installed by vendors.

Charging Station Request & Rebate

Charging Station Request & Rebate	
Number of Level 1 charge ports requested[28]	25
Number of Level 2 charge ports requested[29]	894
Number of total charge ports approved	919
Average Number of Level 1 charge ports approved per site	8
Average Number of Level 2 charge ports approved per site	16
Number of Level 1 EVSE bought	12
Average number of ports per Level 1 EVSE	1.0
Number of Level 2A EVSE bought	135
Average number of ports per Level 2A EVSE	1.7
Number of Level 2B EVSE bought	265
Average number of ports per Level 2B EVSE	1.4
Number of Level 1 EVSE installed	0
Number of Level 2A EVSE installed	0
Number of Level 2B EVSE installed	3
Rebate amount reserved for Level 1 ports	$19,356
Rebate amount reserved for Level 2A ports	$240,941
Rebate amount reserved for Level 2B ports	$449,626
Rebate amount paid for Level 1 ports	$0
Rebate amount paid for Level 2A ports	$0
Rebate amount paid for Level 2B ports	$0

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

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