BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking to Continue the Development of Rates and Infrastructure for Vehicle Electrification.	Rulemaking 18-12-006 (Filed December 13, 2018)

ELECTRIC VEHICLE-GRID INTEGRATION PILOT PROGRAM ("POWER YOUR DRIVE") EIGHTH SEMI-ANNUAL REPORT OF SAN DIEGO GAS & ELECTRIC COMPANY (U902-E)

E. Gregory Barnes
SAN DIEGO GAS & ELECTRIC COMPANY
8330 Century Park Court
San Diego, California 92123
Telephone: (858) 654-1583
Facsimile: (619) 699-5027
Email: gbarnes@sdge.com

April 1, 2020

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Pursuant to Decision ("D.") 16-01-045 (the "Decision"),[1] and Commission Rules 1.8, 1.9(d) and 1.10(c), San Diego Gas & Electric Company ("SDG&E") submits this Electric Vehicle-Grid Integration ("VGI") Pilot Program ("Power Your Drive") Eighth Semi-Annual Report. This report, Attachment A hereto, is also posted on SDG&E's website as indicated in the Notice of Availability served concurrently herewith.

Respectfully submitted

/s/ Estela de Llanos

Estela de Llanos

Vice President of Clean Transportation,
Sustainability & Chief Environmental Officer
SAN DIEGO GAS & ELECTRIC COMPANY
8330 Century Park Court
San Diego, California 92123

April 1, 2020

[1] *See*, Decision, pp. 139-40:

> We will also require SDG&E to file in [Rulemaking] R.13-11-007, or in a successor proceeding, semi-annual reports containing the information reported in the quarterly check-in meetings, the data described in Appendix B to Attachment 2 of this decision, and a description of any program changes implemented by SDG&E prior to the date of the report. This reporting requirement will terminate on February 1, 2021. The report shall be posted on SDG&E's website, and a notice of the availability of that report shall be served on the R.13-11-007 and A.14-01-014 service lists. Parties may then file and serve opening comments on each semi-annual report within 30 days of the service of the report in R.13-11-007, and parties may file and serve reply comments within 50 days of the service of the report.

See also, *id*., finding of fact 80, p. 173; ordering paragraph 3.k, p. 183. Note that the Decision (pp. 156, 161, 183) closed A.14-04-014. R.18-12-006 is the successor proceeding to R.13-11-007.

ATTACHMENT A

SDG&E EIGHTH SEMI-ANNUAL REPORT

San Diego Gas & Electric Company

Semi-Annual Report

ELECTRIC VEHICLE-GRID INTEGRATED PILOT PROGRAM (POWER YOUR DRIVE) SEMI ANNUAL REPORT OF SAN DIEGO GAS & ELECTRIC COMPANY (U902-E) MARCH 2020

I. Introduction

San Diego Gas & Electric Company ("SDG&E") established the Power Your Drive ("PYD") Program ("Program"), after it was approved by the California Public Utilities Commission ("CPUC"), as a pilot program in January 2016. The Program is designed to reduce greenhouse gas ("GHG") and other air emissions, increase adoption of electrical vehicles ("EVs") and integrate the charging of electric vehicles with the grid through a day-ahead hourly rate. Power Your Drive sought to satisfy these objectives through the installation of up to 3,500 EV charging stations at apartments, condominiums and places of work. Chargers were installed at the final site on September 16, 2019.

Under the terms of PYD, SDG&E maintains ownership of the infrastructure to simplify the experience for customers and to ensure the reliability of the charging network. Customers who participate in the Program are assessed a nominal one-time participation payment unless the site is within a designated disadvantaged community, in which case, the participation payment is waived. Customers have the option to choose from two Electric Vehicle Service Providers ("EVSP") who have been qualified to provide Electric Vehicle Supply Equipment ("EVSE"). SDG&E coordinates the design, permitting, construction and commissioning of the charging stations. Once drivers begin charging, SDG&E handles the billing, coordinates with the EVSP to provide customer support and maintains the charging equipment.

PYD sites are either multi-unit dwellings ("MUDs") or workplaces. The CPUC established goals to deploy at least 40% of installations in MUDs and to deploy installations in areas that have higher than average levels of pollution by setting a target of at least 10% of installations in designated Disadvantaged Communities ("DACs").

This is the eighth Semi-Annual Report that SDG&E has issued on the Program, as required by Decision ("D.") 16-01-045 ("Decision"). Data for this report extends from Program inception to January 31, 2020 unless otherwise noted.

II. Executive Summary

Power Your Drive was designed to align the State of California's GHG reduction and transportation electrification policies with both the utility's and its customers' interests. Based on analysis, SDG&E believes that PYD is achieving these goals. Not only does PYD show strong customer interest in the Program and electric vehicles in general, but it also demonstrates that customers are modifying their charging behavior in ways that:

- reduce GHG and other air emissions;
- integrate renewable energy and decrease the need to dispatch conventional peaking generation;
- leverage existing resources and grid assets;
- lower consumer fuel costs and increase the use of electricity as a transportation fuel; and
- increase investments and deployment of infrastructure in disadvantaged communities.

The results show that PYD is consistent with state policies promoting transportation electrification and GHG reductions. SDG&E also found that there is a demand for more chargers in our territory. This is evident as site hosts often requested more chargers than originally planned and even though the program is complete, there is an extended interest list of customers that would like to participate in the program. Because of this interest, in October 2019, SDG&E filed a modest program extension for an additional 2,000 chargers (with modifications based on lessons learned) to deploy additional ports to satisfy a portion of the existing demand. This application, which is pending at the CPUC, will serve as a bridge to a more robust future program.

The final site was completed as of September 16, 2019 with 254 Site Agreements executed and approximately 3,040 charging ports installed in San Diego and southern Orange County. Of the 254 customers with Site Agreements, 32% are within DACs, far exceeding SDG&E's 10% DAC target, and 39% are located in MUDs.

The innovative hourly dynamic rate ("VGI rate") continues to show success in influencing pricing behavior. SDG&E will monitor how drivers experience the VGI rate and educate customers on how to best utilize the unique benefit the rate provides to them.

The following report details the Program's progression and preliminary results. The data in this report data is as of January 31, 2020 unless noted otherwise.

Figure 1: Power Your Drive Status Dashboard

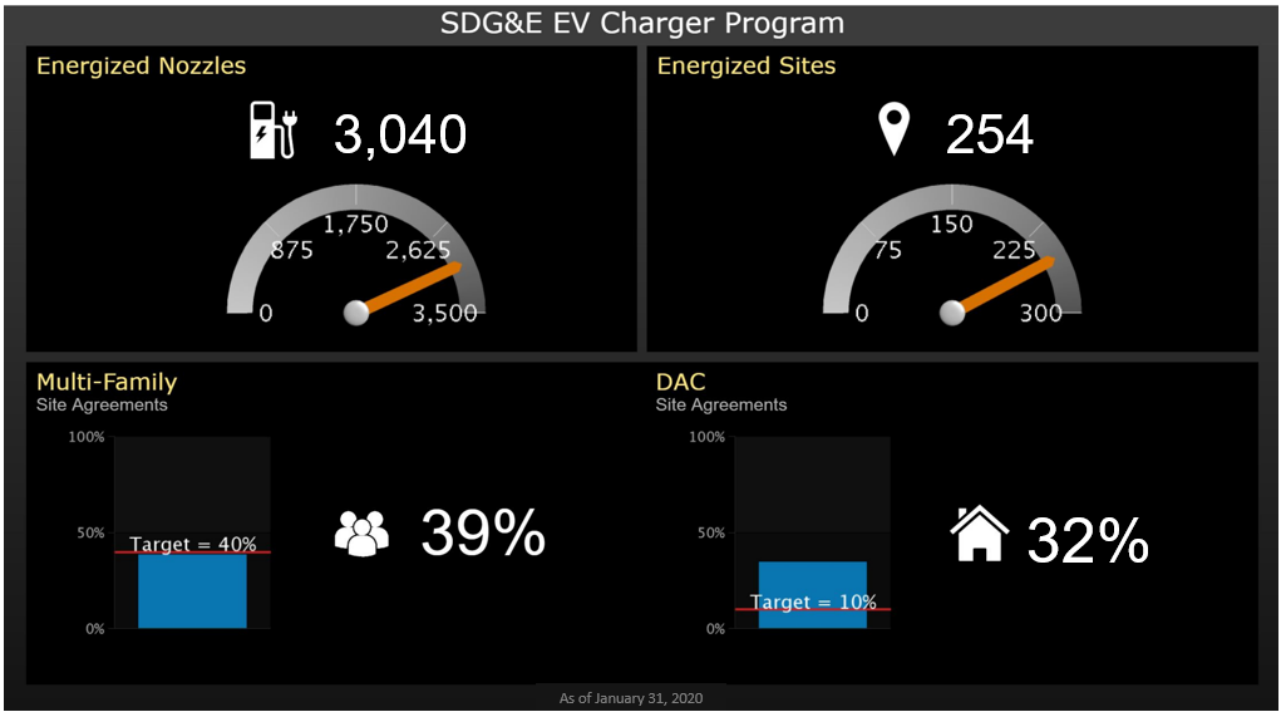


Figure 2: Power Your Drive Cost Summary

Cost Category	*Scaled Decision Assumptions*	*Inception-to-date as of 1/31/2020*	*Variance*
Materials	*$4,792,000*	*$13,989,784*	*($9,197,784)*
Construction	*$28,894,000*	*$27,040,865*	*$1,853,135*
Engineering Design	*$1,004,000*	*$7,442,332*	*($6,438,332)*
Environmental Testing	*$ -*	*$640,071*	*($640,071)*
Internal Labor	*$825,000*	*$2,401,444*	*($1,576,444)*
IT Billing System Upgrade[1]	*$1,564,000*	*$3,206,784*	*($1,642,784)*
Third Party Project Support	*$ -*	*$6,432,784*	*($6,432,784)*
Other	*$943,000*	*$2,111,541*	*($1,168,541)*
Non-Direct costs (AFUDC, Loaders)	*$3,429,000*	*$6,987,447*	*($3,558,447)*
Contingency	*$3,549,000*	*N/A*	*N/A*
Total	***$45,000,000***	***$70,253,053***[2]	***($25,253,053)***

[1] Excludes IT costs to develop enterprise functionality that served Power Your Drive.
[2] Costs as reported may not include credits and adjustments related to materials, construction, and non-direct costs pending final assessment after project completion.

III. Customer Engagement

During the second half of 2019, the Program completed installation of the remaining sites and began the transition towards ongoing support and outreach. SDG&E remains involved in customer engagement to ensure a positive driver experience, continued understanding of the VGI rate and increased utilization of the PYD chargers. An important element of SDG&E's outreach campaign is to provide site hosts and drivers with detailed information about the existing Program– educating them on EV basics, the benefits of driving electric, how to use the charging stations and available rebates and incentives. These efforts deepen the site hosts' and drivers' understanding of how to best take advantage of the Program's features and benefits.

A. PYD Site Host Engagement

With the installations complete, the SDG&E Customer Engagement team placed a heavier focus on increasing participation through engagement of current PYD site hosts to promote the benefits of the new charging stations to their respective employees and tenants. Sites were prioritized based on type and initial usage data. Each site host was individually contacted by either a member of the Customer Engagement team or an SDG&E Account Executive to discuss the appropriate communication channel for the audience at their location. Based on the interview with each site host, the outreach options described in the table below were offered for each location to ensure the highest level of engagement with current and potential users.

Figure 3: Site Host Outreach Options

Channel	**Description**
Informational Seminar	In-person presentation by a knowledgeable SDG&E representative to a concentrated audience. Takes place as a Lunch & Learn or as an agenda item during an existing meeting.
Ride & Drive	Interactive event through one of SDG&E's partners, giving the participants an opportunity to test drive one or several EVs. Informational booth included.
Outreach Booth	Information booth set up on site for an opportunity to engage potential customers. Knowledgeable SDG&E experts available to answer questions, speak about EV benefits and hand out collateral.
Email Campaign	Informational email provided to the site host for distribution. Email describes benefits of driving EVs, shares information about existing PYD chargers and provides resources to answer questions.
HOA Meetings	In-person presentation by a knowledgeable SDG&E representative to a concentrated audience.
Webinar	Informational session hosted via webinar, summarizing benefits of driving EVs and providing an opportunity to ask questions.
Mailer	Customized letter provided to the site host for distribution. Mailer describes benefits of driving EVs, shares information about existing PYD chargers and provides resources to answer questions.
Other	SDG&E can customize communication options, as needed, based on the interviews conducted with the PYD site hosts.

This approach had two main objectives: 1) increase participation by educating current EV drivers about how to enroll in the program and the intricacies of the VGI rate; and 2) generate awareness of the PYD chargers for those tenants and/or employees at each location who have not made the switch to electric vehicles yet. Overall, the team was able to engage all the site hosts at various levels of involvement.

For workplaces, SDG&E hosted a combination of in-person events including:

- Staffed informational booths in the lobby during the morning rush or presented at company Lunch and Learns for San Diego International Airport, California Coast Credit Union and MA Engineers.
- Participated in Sustainability Fairs for San Diego International Airport, Dr. Bronner's and Ken Blanchard.
- Hosted Ride and Drive events for General Atomics, Illumina and City of Chula Vista.

Several other site hosts expressed interest in hosting in-person events which will be scheduled through 2020. In the meantime, in order to maintain continuous engagement, SDG&E developed a PYD newsletter and provided it to each site host to distribute via their company email campaigns.

Through site host interviews, we found that the most effective way to target MUD tenants was through a direct marketing campaign. An analysis was conducted to gather email addresses for the respective tenants in order to execute an email campaign with a PYD newsletter, creating awareness of the PYD charging stations at the respective sites. For those tenants for whom we were not able to locate an email address, printed mail was used as a channel to engage MUD tenants to build awareness about the PYD benefits available at their site.

B. Outreach Efforts

Backed by SDG&E's mission statement of providing clean, safe and reliable energy to better the lives of the people it serves, SDG&E outreach maintains a clear focus on those guiding principles. With environmental sustainability and stewardship at the forefront of all community engagement events, SDG&E is consistently engaging customers on the benefits of driving electric and the importance of electrifying the transportation sector. Since September 2019, SDG&E has conducted 19 public outreach events which allowed the team to engage attendees on PYD related topics. A few of the more impactful events are outlined below.

Wonderfront Music Festival

Beautiful waterfront parks, piers and ships played host to over 40,000 attendees during the first annual Wonderfront Music Festival over a three-day weekend in November 2019. SDG&E sought out the opportunity to connect with the lively crowd by staffing an interactive

"Ener-G Station" over the course of the multi-day event. Those who stopped by had a chance to partake in EV trivia for a chance to earn some swag, learn about EV rates and benefits, as well as take advantage of an EV photo moment for social media.

San Diego International Auto Show

The San Diego International Auto Show is a prime opportunity to engage with thousands of attendees who are in the market to purchase their next vehicle. Every year SDG&E hosts an interactive EV display, showcasing the newest, hottest EV makes and models while educating the public on all the benefits of driving electric. This year, over 70 SDG&E employees participated in the interactive "Ener-G Station" EV display of the Show, taking place January 1 through January 5, 2020. Attendees were engaged through educational activities such as an EV trivia wheel, where roughly 3,600 wheel-game spins and subsequent educational conversations took place. Over 1,400 EV rate cards were given out and knowledgeable rate experts were brought in to staff an EV rate "Genius Bar" to answer questions and educate customers. In addition, SDG&E hosted an EV Ride and Drive on the designated "EV Day" of the Show. There were 164 test drives via ten different vehicles. Due to multiple passengers in some of these rides, there were 294 EV experiences. All this activity generated 15 media stories, videos and radio hits, earning great press for electric vehicles.

American Lung Association Lung Force Walk

The American Lung Association (ALA) is the leading organization dedicated to saving lives by improving lung health and preventing lung disease through education, advocacy and research. With over 40% of California's greenhouse gas emissions resulting from transportation[2], SDG&E believes it is imperative to support this organization. In January of 2020, SDG&E helped ALA surpass their goal of raising $300,000 by hosting an EV Ride and Drive during the annual Lung Force Walk. Over the course of the day, 71 test drives were conducted with 64 passengers for a total of 135 EV driving experiences.

[2] In 2017 per the California Air Resources Board's 2019 GHG Inventory

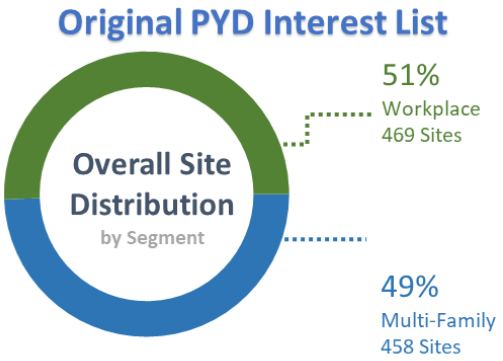
IV. Reporting Requirements

This section provides requisite data points as defined and approved in AL 2876-E. A summary of this data can be found in Appendix-A of this report.

A. Customer Interest

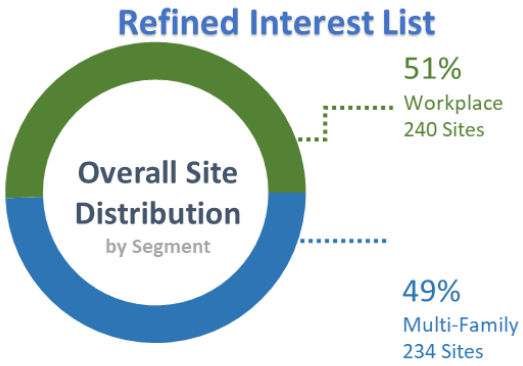
The Program received significant customer interest. While SDG&E installed chargers at 254 sites, an additional 927 site hosts demonstrated interest in participating in the Program during the enrollment period. This group is referred to as the Original Interest List. Of this group, 458 (49%) are multifamily sites and 469 (51%) are workplace locations.

Figure 4: Original Interest List Site Distribution



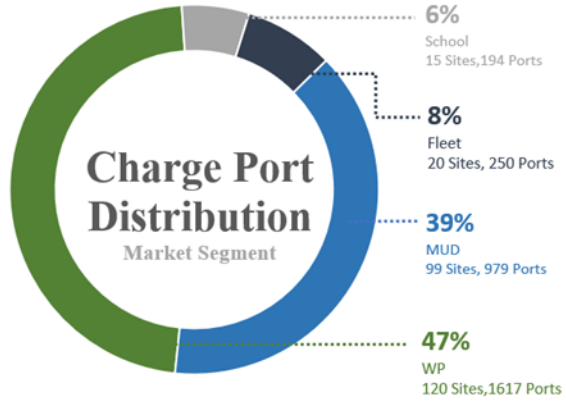
As a result of Program close out activities and in preparation for the PYD Extension Program filing, the Original Interest List was reviewed and refined to determine how much of the expressed interest could be considered for future programs. This review created the Refined Interest List for customers who are potential fits for the PYD Extension Program. The graph below describes the breakdown of expected site type on the Refined Interest List.

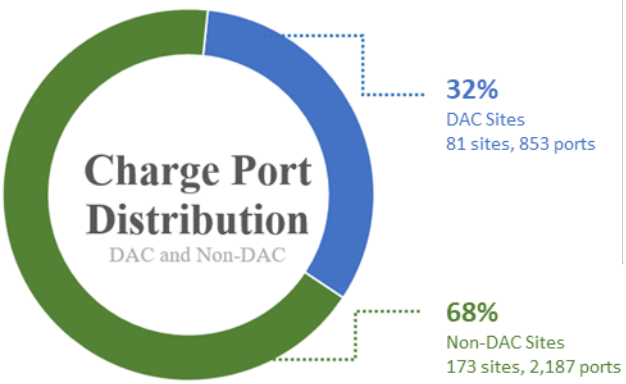
Figure 5: Refined Interest List Site Distribution



The graphs below detail the port distribution across different market segments of the ports installed under the Program.

Figure 6: Contracted Site Distribution



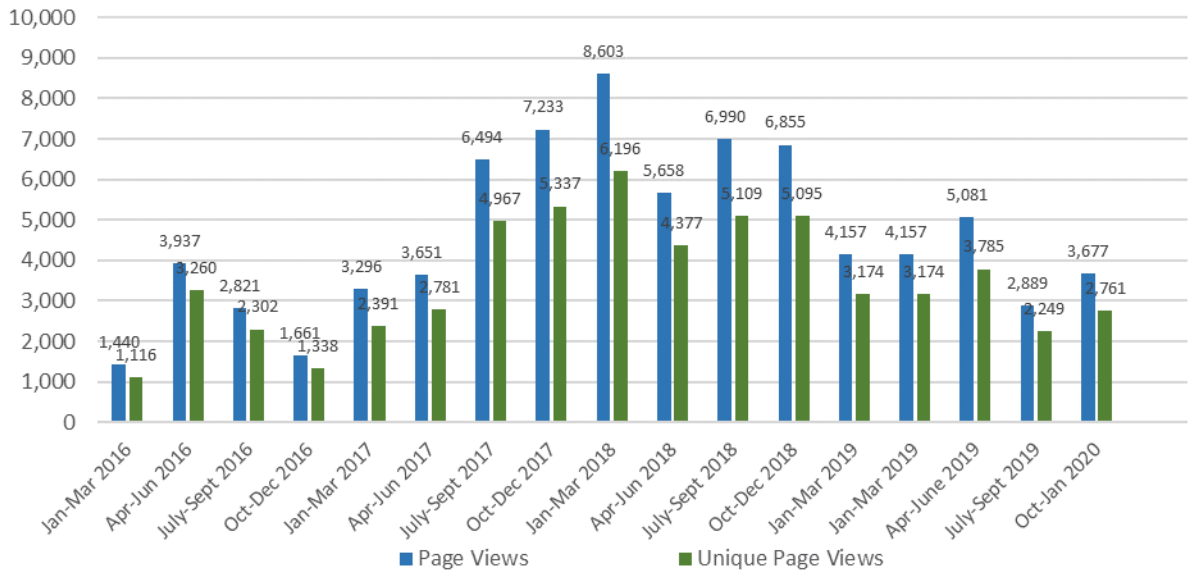


B. Power Your Drive Website Views

As part of the customer engagement efforts discussed in Section V of this report, SDG&E's Customer Solutions Team directs customers to the PYD website to learn more about the Program. Since the Program was fully subscribed in Q4 2018, the website has been updated to no longer accept applications. The website still receives a small number of views as it has general information about the Program, but it is no longer the primary channel for customer engagement. With Program installations completed, SDG&E will no longer be reporting page views while we update our pages to support our other programs and in preparation for the Extension Program, if approved.

The website metrics have been recorded from the initial launch of the website. The metrics record both the total page views and the unique page views as presented below. Page views represent each time a user visits a page, and the unique page views are an aggregated count of page views generated by the same user during their session on the website.

Figure 7: Page Views and Unique Page Views



C. Installations

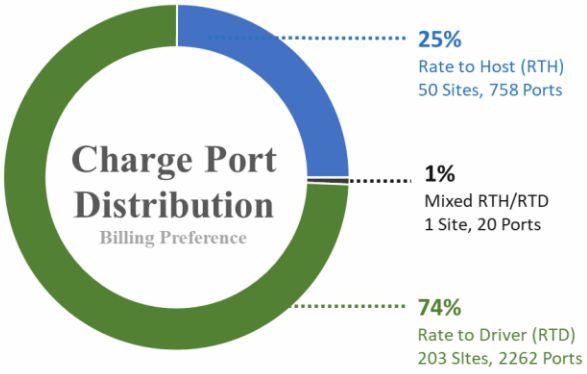
As of January 31, 2020, SDG&E completed and energized installations at 254 sites, which includes 3,040 charging ports.

D. Billing Option Preferences

SDG&E tracks the billing options that customers may select as part of the Program. The billing option metric shows the billing option selected by the customer, broken down by workplace, multifamily and disadvantaged communities. There are two billing options available within the Program: Rate-to-Driver, where the EV driver receives the rate directly,

which is billed to the EV driver's residential bill/account; and Rate-to-Host, where the site host receives the rate, which is billed to the site host's commercial bill/account. Both options refer to separately metered service which is not comingled with another load such as building load. Selection of the Rate-to-Host option requires customer submission of a load management plan. As of January 31, 2020, out of the 51 contracted sites that have selected Rate-to-Host as a billing preference, 27 have selected a load management plan of powering down or shutting off charging during high priced intervals, 7 sites have elected to use facility management to only allow charging during certain time periods, 14 sites have elected to send alert emails to drivers on high priced days, 2 sites have elected to not have any action taken, and one site is still determining their load management plan. This site is in the process of a redesign; the finalization of the load management plan will be completed as a part of the site closeout activities.

Figure 8: Billing Preference for Sites with Signed Agreements



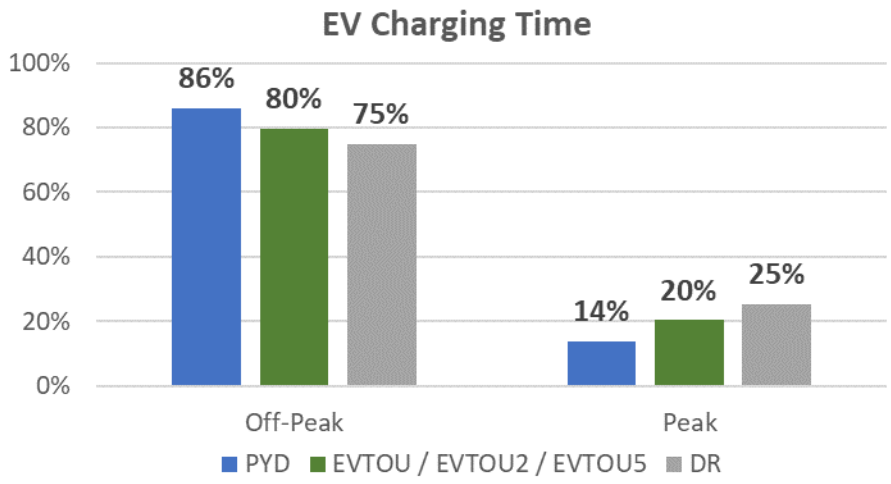
E. Timing Patterns of EV Charging

The charging patterns captured by the usage data are an important indicator of the overall effectiveness of the Program at encouraging EV charging during periods of lower grid utilization. The Program seeks to influence charging behavior through the implementation of the hourly VGI rate which is calculated for each circuit based on projected demand and communicated to enrolled drivers daily for the following day. Since the rate is hourly, it is designed to be more flexible than typical off-peak and on-peak Time-of-Use rate schedules. The rate aims to incentivize charging at times that will optimize overall grid and circuit utilization, which will benefit all SDG&E ratepayers.

EV Charging: Comparison with Time of Use Periods

An alternative method to display the timing patterns of EV charging is to compare the percent of EV load that occurs during SDG&E's peak pricing hours of 4:00 p.m. – 9:00 p.m. The chart below illustrates load shifting to off-peak hours. The VGI rate appears to be effective at incenting charging outside of SDG&E's peak. The numbers for the tiered rate ("DR"), EV TOU 2 and EV TOU 5 are for whole home usage of EV drivers and the EV TOU rate is for sub-metered EV usage.

Figure 9: Percent of load occurring during Off-Peak and Peak hours



F. Usage Rates

SDG&E began receiving usage data from the first site on June 29, 2017. As of January 31, 2020, 254 sites have been energized and a total of 3,770 EV drivers are enrolled in the Program. Usage volume for the reporting period comprised nearly 300,000 unique charging sessions and nearly 3 million kWh delivered. Site utilization summarized by quartile is in Appendix A of this report.

G. Spend

The table below shows the costs of both the construction and full Program costs per site and per port. It also compares the estimates from the original filing to the actual costs of the Program. As shown in the table in the Executive Summary, the actual costs of the Program exceeded both the filing assumptions and the project estimates post Decision by approximately $25 million.

Figure 10: Power Your Drive Costs by Site and Port

Average Estimated Costs	*Original Filing Assumptions (Direct)*	*Inception-to-date as of 1/31/2020 (Direct)*	*Inception-to-date as of 1/31/2020 (Fully Loaded)*
Construction Cost per Site *(Design, Construction, Materials)*	*$99K – $109K* *(10 ports/site up to 550 sites)*	*$191K* *($48m for 254 sites)*	*$200K* *($51m for 254 sites)*
Construction Cost per Port *(Design, Construction, Materials)*	*$9.9K - $10.9K* *($54M for up to 5,550 ports)*	*$15.9K* *($48M for 3,040 ports energized)*	*$16.7K* *($51M for 3,040 ports energized)*
Program Cost per Site	*$116K - $128K* *($64M up to 550 sites)*	*$249K* *($63M for 254 sites)*	*$277K* *($70M for 254 sites)*
Program Cost per Port	*$11.6K - $12.8K* *($64M for up to 5,500 ports)*	*$20.8K* *($63M for 3,040 ports energized)*	*$23K* *($70M for 3,040 ports energized)*

V. Supplemental Data Collection & Monitoring

This section presents the most recent data for the Power Your Drive supplemental metrics designed to aid in the evaluation of the overall Program performance. The data that is presented in this section is summarized in Appendix A of this report.

A. Programmatic Changes

SDG&E continues to review and refine PYD site information throughout the Program close out and post construction processes. Site information is subject to change as part of this ongoing effort to maintain high quality data. For example, some site addresses have been reviewed and adjusted to reflect the most accurate information. These types of updates could potentially result in changes to site classifications (e.g., DAC status, site type, etc.).

B. Fuel Cost Savings Estimate

This section provides estimates of fuel cost savings achieved by the displacement of gasoline in favor of electric charging at PYD sites, grouped by Rate-to-Driver and Rate-to-Host billing options. The estimation method is based on the total cost of the electricity usage at PYD sites from Program data, compared to the estimated total cost of fuel consumption by equivalent Internal Combustion Engines ("ICE") vehicles required to travel equivalent distance. The estimated savings also reflect current market conditions in the relative fuel efficiency of EVs compared to ICE vehicles and the average price of gasoline.

Figure 11: Estimated Fuel Cost Savings

	Rate-to-Driver	Rate-to-Host
Usage (kWh)	1,392,362	1,501,303
Average $/kWh	$0.18	$0.24
Total Cost	$248,818	$360,723
Approx. Gas Equivalent (Gallons)[3]	167,083	180,156
Average $/gal[4]	$3.25	$3.25
Total Cost	$543,021	$585,508
Estimated Savings	$294,203	$224,786
Average Savings per kWh	$0.21	$0.15

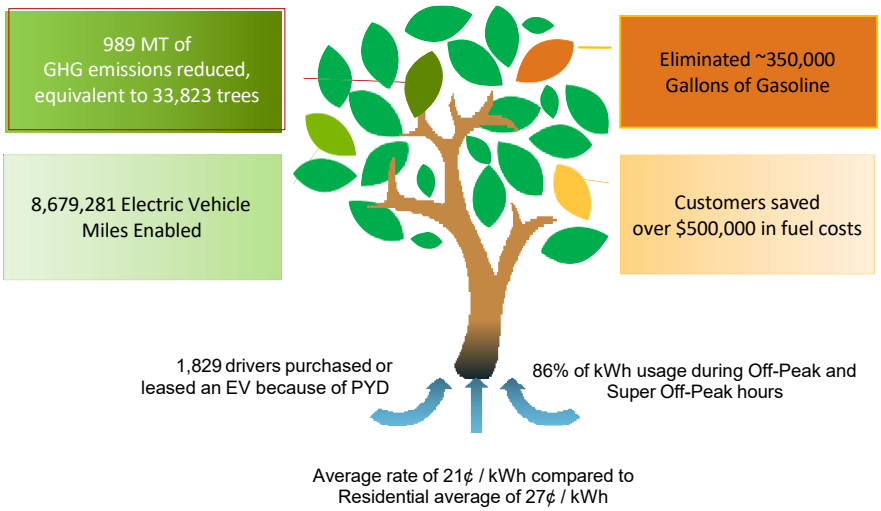
[3] Calculated using EPA average 24.9 MPG ICE vehicle and 3 mi/kWh EV

[4] San Diego 2019 average

C. Power Your Drive Data Trends

The following graphic shows the measurable trends and correlations that have been identified to date in the Program based on data collected as of January 31, 2020.

Figure 12: Summary of Program Benefits



To assess incremental EV adoption due to the presence of PYD ports, SDG&E calculated the number of drivers that have charged in the Program 90-days after the commissioning of a site. SDG&E assumes that drivers who charge prior to the 90-day window were likely already on the path to acquire an EV regardless of the presence of PYD ports. Applying this method, 1,829 of the 3,770 drivers purchased EVs due to the presence of PYD ports. This represents about 49% of all drivers registered and about 0.6 new EVs added for every port installed under the Program.

Regarding emissions benefits, the Program has enabled nearly 9 million miles[5] to zero emission miles. This represents about 1,000 metric tons of GHG emissions reduced[6], the equivalent to about 34,000 trees[7].

Alignment with Renewables

While SDG&E's overall renewable portfolio is ~45% renewable[8], PYD has a significantly better load profile compared to SDG&E's overall load profile. PYD is 73% renewable when comparing energy procurement and generation to usage from January 1, 2019 through January 31, 2020. This does not use the same process to calculate as the Power Content Label but provides a similar benchmark of SDG&E's alignment with renewables. Workplace usage is 74% renewable and MUD usage is 67% renewable. This difference is primarily due to the timing of usage at workplaces aligning with the high volume of renewables available. Secondarily, the VGI rate has higher pricing during hours with less renewable generation; since it appears that drivers are shifting their load away from these higher prices, they are aligning their consumption with lower cost hours that have more renewables.

[5] Calculated using EPA average 24.9 MPG ICE vehicle and 3 mi/kWh EV
[6] Chapter 8 – Prepared Direct Testimony of J.C. Martin: Air Quality Impacts and Cost Effectiveness
[7] EPA GHG Equivalencies Calculator
[8] SDG&E 2018 Power Content Label

Monthly Load Patterns

The load patterns for workplaces and MUD sites have expectedly different shapes. At workplaces, holidays and weekends show almost no load, with Mondays showing increased demand. There also is a slight increase in the highest hourly load on Fridays that does not result in a larger daily load. It may be that some drivers are willing to pay more and ensure they are fully charged before the weekend. The increased charging on Mondays and Fridays may be due to some drivers that rely solely on workplace.

Figure 13: Workplace Load in October 2019

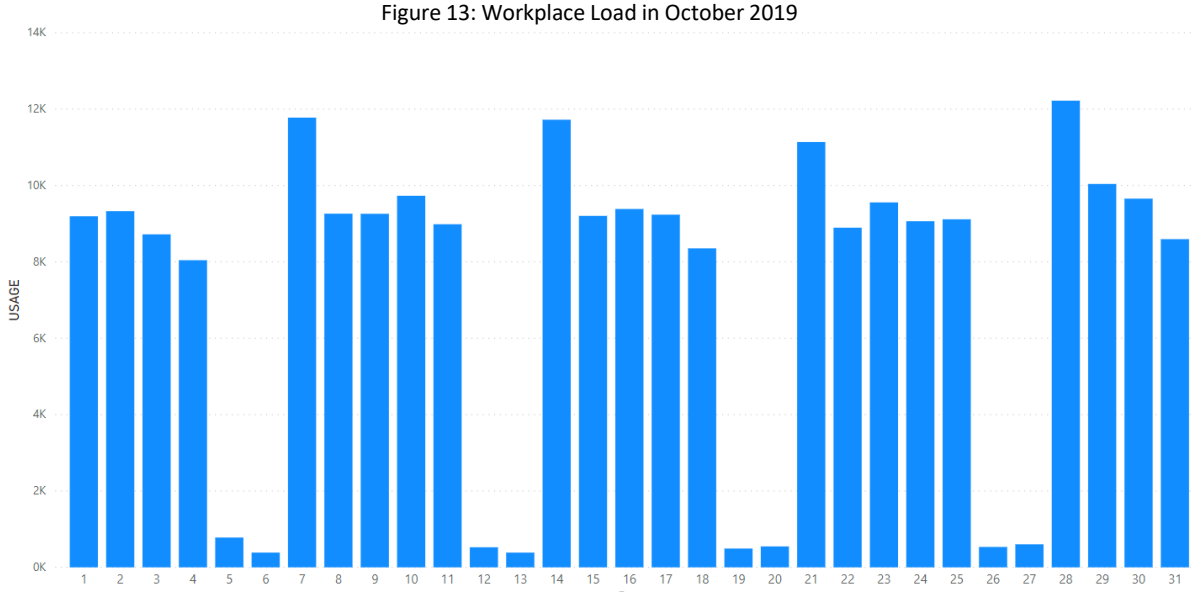
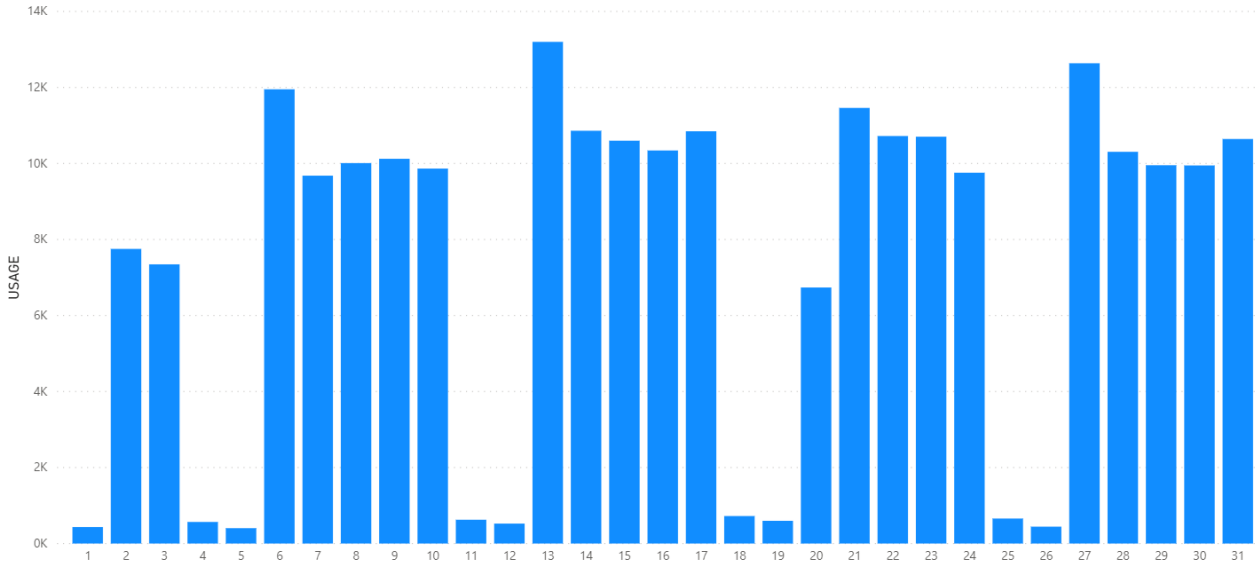


Figure 14: Workplace Load in January 2020



At MUD sites, load is relatively stable throughout the weeks with occasional spikes.

Figure 15: MUD Load in October 2019

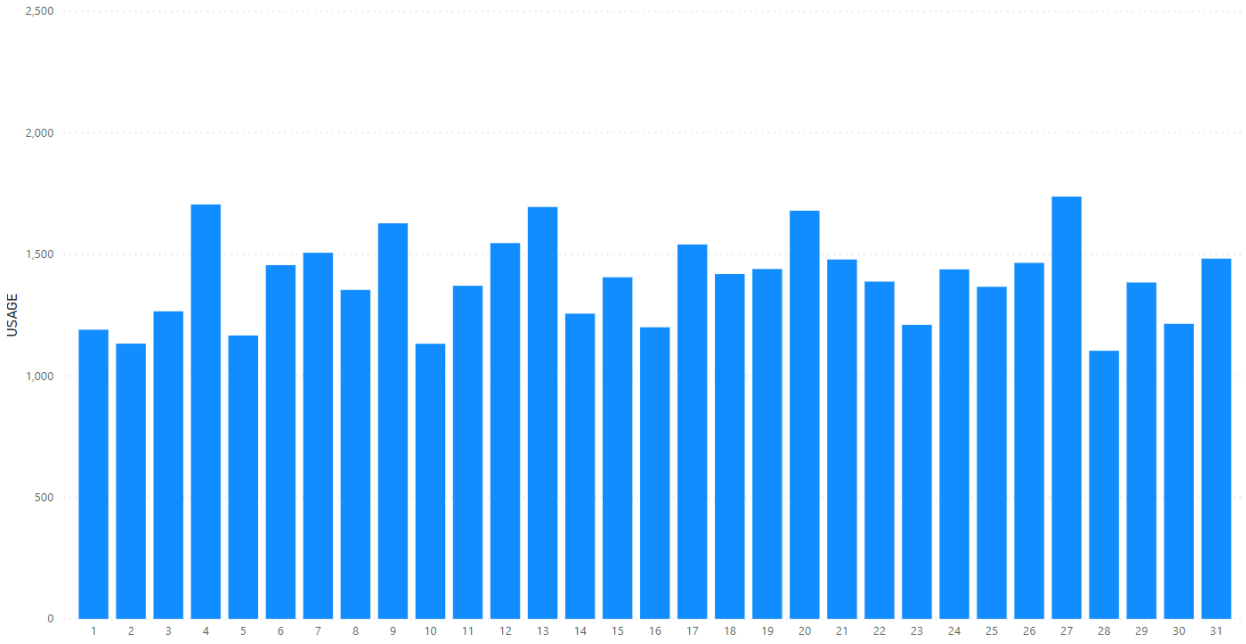
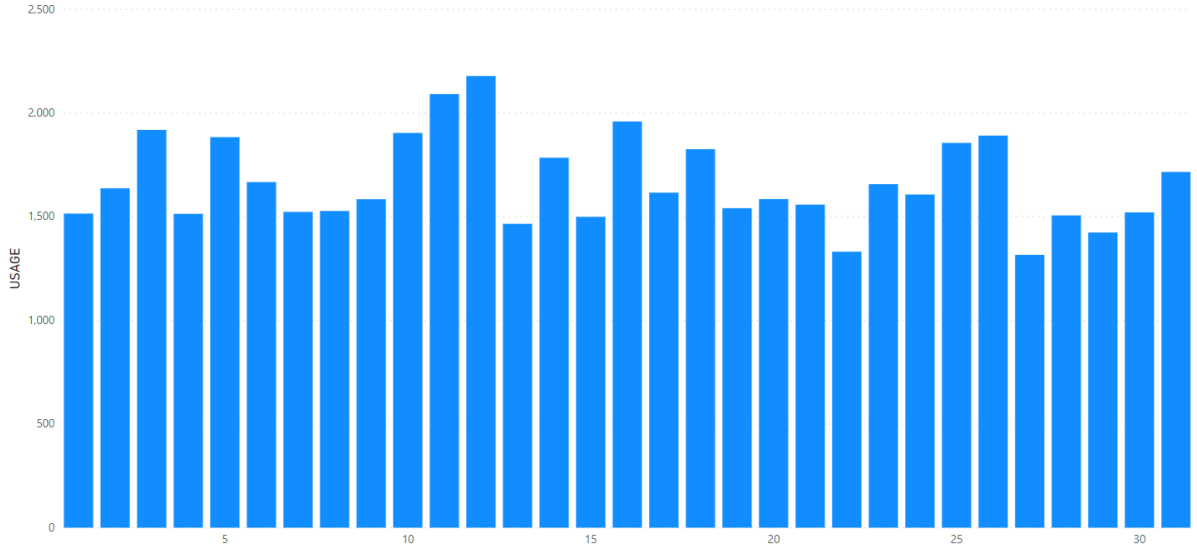


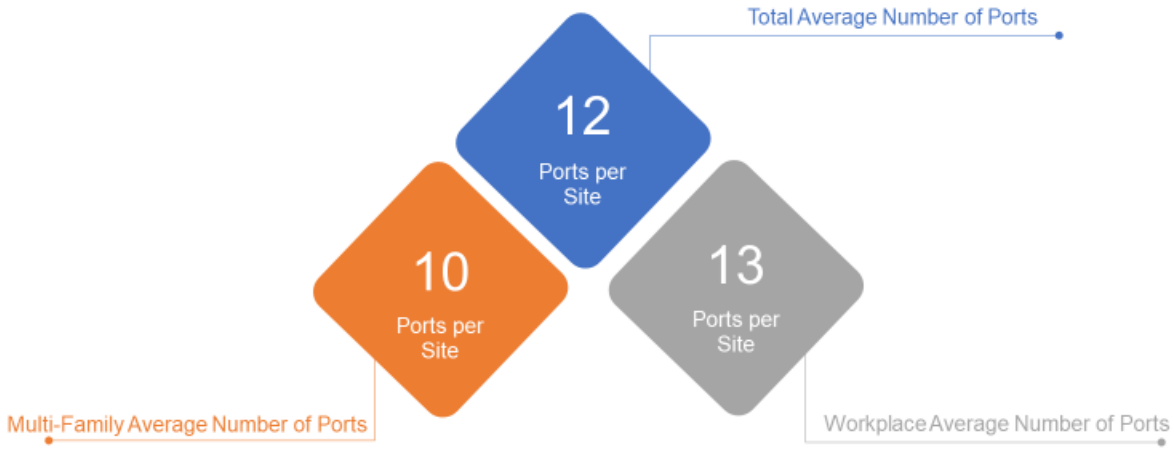
Figure 16: MUD Load in January 2020



Number of Charging Ports

When SDG&E filed the application for PYD, it assumed an average of 10 charger ports per installation across all projects. However, the average number of charger ports was 12 ports per site (10 ports for multifamily sites and 13 for workplace sites). Many of the costs to deploy a site are related to the characteristics of the site rather than the port count, and having more ports allows for a lower cost per port.

Figure 17: Average number of ports per site type



VI. Summary and Conclusion

The Program has transitioned from site deployment to maintenance and operation of the existing charging infrastructure. Additionally, SDG&E continues to focus on engaging with site hosts and drivers and increasing charger utilization. One of the significant accomplishments of the Program has been to deploy highly visible charging stations to reduce barriers to EV adoption. SDG&E has experienced increases in utilization and unique EV drivers in a relatively short period of time and expects increases to continue.

SDG&E energized over 250 sites and over 3,000 ports, all utilizing the VGI rate, the first of its kind for a utility EV charging program. Customers are utilizing these chargers and data shows that they are charging at optimal times.

Overall, the presence of these chargers continues to influence EV adoption, as electric vehicles are being purchased due to the Program. The hourly rate shows that customers are modifying charging behavior to incorporate pricing incentives and higher renewables. Additionally, there was more customer interest in the Program than SDG&E could accommodate. SDG&E continues to have customers reach out asking if they can be part of the Program. Therefore, in October 2019 SDG&E filed a program extension for an additional 2,000 chargers (with modifications based on lessons learned), which is pending at the CPUC, to deploy additional ports to satisfy a portion of the existing demand. This will serve as a bridge to a more robust future program.

Appendix A: Semi-Annual Report Summary

Reporting Requirement	Update	
1) Interest in EV site installations at MUDs and workplaces *[Interest List: Number of host sites by]*	MUD not in DACs	331
	MUDs in DAC among sites in review[9]	127
	WP not in DAC	310
	WP in DAC among sites in review[10]	159
2) Number of EV Site installations that were approved, or that are in the pipeline for deployment	Reviewed by SDG&E, but needed signed contracts	0
	Site Host Agreements Executed	254
	Installations in progress	0
3) Site selection criteria used in selecting the sites that will host the EV site installations *[within MUD, WP & DAC segments]*	» Interest list sign up via https://www.sdge.com/residential/electric-vehicles/power-your-drive/interest-list or ev@sdge.com » Customer submits application » Date of indicated interest (first-in-line-priority) » Current and expected volume of EV drivers » Number of installations desired » Type of installation (workplace, multi-unit) » Disadvantaged Community status » Customer's goals align with Power Your Drive criteria (i.e. no public charging, willingness to use VGI rate, etc.) » Nearby transformer available capacity » Distance between transformer and new service point	

[9] Total number of MUD sites in review: 107.
[10] Total number of WP in review: 166.

	» Site conditions related to construction feasibility and cost (i.e., trenching surface, EVSE mounting surface, condition of facility) » Americans with Disabilities Act (ADA) requirements » If leasing, term and conditions of lease » Land and property ownership » Signature of site agreement required to proceed to engineering of site		
4) Number of EV site installations	254 (installed and energized)		
5) Rate *[billing]* option that the site host have chosen *[number of hosts by option, number of drivers]*	Overall List of Sites (includes customers with unsigned Site Host Agreements)[11]	Rate-to-Driver	N/A
		Rate-to-Host	N/A
		Undecided	N/A
	Sites Host Agreements Signed	Rate-to-Driver	203
		Rate-to-Host	50
		Mixed/RTH & RTD	1
6) How the Rate-to-Host option *[load management plan]* is being implemented by the site *[number of host sites per load management plan type; categories of load management plan types will expand as they are reviewed and approved]*	Powering Down/off	27	
	No election	2	
	Facility Mgmt	7	
	Other (i.e. email to drivers)	15	

[11] Rate option is not determined until the latter part of the project.

7) Usage *[facility utilization]* rates at EV site installations and charging stations *[frequency per quartile of drivers / charging sessions volume and kWh sold per facility]*	Quartile	Volume		kWh Sold	
	25%	192 Drivers / 9,324 Sessions		51,483	
	50%	383 Drivers / 30,740 Sessions		237,282	
	75%	765 Drivers / 68,007 Sessions		508,967	
	100%	2,430 Drivers / 185,716 Sessions		2,095,361	
	Total[12]	3,770 Drivers / 293,787 Sessions		2,893,094	
8) Timing patterns of EV charging and the degree to which these times correlate to VGI rate categories *[kWh consumed by price range: min, average, max]* Times are based on EV-TOU rate	Time	kWh	Min $/kWh	Avg $/kWh	Max $/kWh
	Summer Peak	114,557	0.1395	0.2748	1.7338
	Summer Off-Peak	1,225,445	0.1313	0.2363	1.7017
	Summer Super-Off Peak	192,285	0.1289	0.1838	1.7338
	Winter Peak	101,666	0.1374	0.2318	0.9067
	Winter Off-Peak	1,088,168	0.1311	0.2143	0.8366
	Winter Super Off-Peak	170,794	0.1321	0.1846	0.9067
	Totals	2,892,915			
	Single Event	191,599			
	Dual Event	7,086			
9) The amount of the CPUC allocated budget for the Program spent	Spend since July 31, 2019	$691,850			
	Spend to Date as of January	$70,253,053			

[12] Some drivers may charge at multiple sites. This means that this single driver will show up in different sites and, therefore, will be double counted in how this quartile breaks out. The sessions and kWh are not duplicated.

during the last reporting period and the cumulative amount spent	31, 2020	
10) Observable trends or correlations between the number of EV site installations deployed compared to EV charging use and growth in the number of EVs	Discussion of observable trends included in the body of the report.	
Decision, Attachment 2, Appendix B – Combined with the Quarterly Report for the Semi-Annual Report (served to R.13-11-007 and A.14-01-014 service lists)		
A) Estimates of fuel savings through the use of the VGI facility, under both the VGI Rate-to-Driver and VGI Rate-to-Host pricing plans	Rate-to-Host	$224,786
	Rate-to-Driver	$294,203
B) Deployment of VGI Facilities *[number of]* within Disadvantaged Communities (DAC), including EV Car-sharing deployment	DAC - Workplace	57 sites
	DAC - MUD	24 sites

C) Status of Program Implementation to date	Embedded in this report
D) Comparing the installations of non-utility EVSE to VGI EVSE	This is outside the scope of the VGI Pilot Program, which is not responsible for tracking the installation of charging stations by others outside of the VGI Pilot Program. Furthermore, there was no funding in Decision 16-01-045 to perform this type of analysis. There are public sources of this information regarding the deployment of public (not private) charging stations (e.g. PlugShare).
E) Surveys of customer and driver decisions to adopt PEVs	Will be provided when implemented
F) Rate of achievement of supplier diversity and workforce objectives	40.1%[13]
G) Description of any programmatic changes implemented by SDG&E prior to the date of the report	Programmatic changes are included in the body of the report (See Section VII B)

[13] As of 07/31/2019.

Appendix B: Program Advisory Council Company/Organizational Representation

Advanced Energy Economy
AeroVironment, Inc.
Black & Veatch
California Apartment Association
California Energy Commission
California Governor's Office of Business and Economic Development
California PEV
Collaborative Center for Sustainable Energy
ChargePoint
City of Chula Vista
Clean Fuel Connection
Collins Group, Inc.
CPUC Energy Division
CPUC Office of Ratepayer Advocates (ORA)
Electric Power Research Institute (EPRI)
Environmental Defense Fund
General Motors
Greenlining
Greenlots
HG Fenton Company
Honda Motor Co., Inc.
Hyundai-Kia America Technical Center, Inc. (HATCI)
IBEW Local 569
Intel Corporation
JRP Charge
Kn Grid
National Resources Defense Council (NRDC)
National Strategies
Plug In America
Powertree Services Inc.
Proterra
Recargo
RWE
San Diego Association of Governments (SANDAG)
San Diego Green Building Council
San Diego Unified School District
Shell
Siemens Digital Grid
Southern California Edison
Strategy Integration, LLC & The Energy Collaborative
The Utility Reform Network (TURN)
Utility Consumers' Action Network (UCAN)
Vote Solar

Appendix C: Circuit Taxonomy

Operational Definitions for Circuit Taxonomy

Circuit Attributes	Count
Total SDG&E Circuits	1,040
Circuits with Attributes	860
Circuits without Attributes	180*
**4kV circuits not included in distribution*	

Circuit Type	Count
Residential (R)	196
Mixed (M)	451
Commercial & Industrial (C&I)	213
Circuit Type is classified as Residential, Mixed, or Commercial & Industrial if 70% of the total consumption on that circuit is from that class.	

Summer Week Day Peak Hour	Count
11:00-14:59	203
15:00-19:59	185
18:00-18:59	168
20:00-21:59	298
**6 Circuits (0.7% of population) with summer weekday peak hours between 22:00 and 10:59 are not included.*	

Load Factor	Count
(H) High = > 46.0%	443
(L) Low = < 45.99%	417
(Average Hourly kWh / Peak kw)	

Solar Penetration	Count
(H) High = > 4.0%	426
(L) = < 3.99%	434
(Solar Capacity / Circuit Capacity)	

Note: circuit profile will remain unchanged throughout the 3-year sign-up period.

VGI Pilot - Circuit Sampling Distribution

As of 7/31/2019

Circuit Type	Solar Penetration	Circuit Peaking Hours: Hours 11 thru 14[1] – High Load Factor	Hours 11 thru 14[1] – Low Load Factor	Hours 15 thru 17 – High Load Factor	Hours 15 thru 17 – Low Load Factor	Hours 18 thru 19 – High Load Factor	Hours 18 thru 19 – Low Load Factor	Hours 20 thru 21 – High Load Factor	Hours 20 thru 21 – Low Load Factor
Residential Dominant	High Solar Penetration	1 0 0	2 0 0	3 0 0	4 1 1	5 1 0	6 33 15	7 21 8	8 101 28
	Low Solar Penetration	9 0 0	10 2 0	11 0 0	12 2 0	13 1 0	14 5 2	15 10 4	16 18 4
Res. and C&I Mixed	High Solar Penetration	17 7 3	18 2 0	19 21 8	20 22 10	21 30 13	22 61 11	23 41 11	24 62 21
	Low Solar Penetration	25 45 17	26 19 7	27 56 13	28 14 5	29 18 5	30 13 2	31 38 8	32 2 0
Commercial & Industrial Dominant	High Solar Penetration	33 9 3	34 6 2	35 8 1	36 3 0	37 0 0	38 1 0	39 2 1	40 0 0
	Low Solar Penetration	41 57 14	42 56 18	43 44 13	44 14 3	45 3 2	46 2 1	47 3 0	48 0 0

Distribution Cell #

SDG&E Circuit Count

In-Service Sites

[1] 6 Circuits (0.7% of sample set) with SWD_Pk_Hr between 22:00 and 10:59 are not included in this record count

Circuits to Fill

- Equally Represented
- Under Represented
- Over Represented

Note: The VGI sampling chart does not include newly added circuits