

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

Order Instituting Rulemaking to Consider
Alternative-Fueled Vehicle Programs, Tariffs, and
Policies.

Rulemaking 13-11-007
(Filed November 14, 2013)

**ELECTRIC VEHICLE-GRID INTEGRATION PILOT PROGRAM (“POWER YOUR
DRIVE”) 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@semprautilities.com

September 6, 2016

TABLE OF CONTENTS

I.	OVERVIEW	2
II.	REGULATORY REQUIREMENTS AND KEY IMPLEMENTATION ACTIVITIES.....	2
A.	Required Advice Filings	2
1.	Letter of Acceptance (OP 3.b, p. 181):	2
2.	VGI Balancing Account – Advice Letter (“AL”) 2868-E (OP 3.d, p. 182):	2
3.	Disadvantaged Community Definition – AL 2876-E (OP 3.h, p. 182):	3
4.	VGI Memorandum Account – AL 2881-E (OP 3.g, p. 182):	3
5.	VGI Rate Schedule – AL 2877-E (OP 3.c, p. 182):	3
6.	Program Participation Payment – AL 2886-E (OP 3.f, p. 182):	3
B.	Program Advisory Council Meetings	4
1.	March 7, 2016 - San Diego	4
2.	March 24, 2016 - Conference Call.....	4
3.	August 10, 2016 - San Francisco	5
C.	Electric Vehicle Service Provider (“EVSP”) Request for Information and Request for Proposal Schedule	5
D.	Site Host Customer Screening Process	7
III.	REPORTING REQUIREMENTS	8
A.	Site Host Customer Program Interest	9
B.	Number of Installations.....	9
C.	Site Selection Criteria – Screening and Site Prioritization	9
D.	Number of Installations Deployed and Fully Operational	10
E.	Billing Option Preferences by Site Hosts	10
F.	VGI Rate-to-Host Load Management Plans	11
G.	Usage Rates.....	11
H.	Timing Patterns of EV Charging	12
I.	Amount of Program Spend	12
J.	Observable Trends	12
IV.	CUSTOMER ENGAGEMENT	13
A.	Power Your Drive Customer Engagement and Integrated Communication.....	13
B.	Integration with Relevant Regional Programs, Education and Outreach	13

C.	Community Partnerships.....	14
D.	Employee Involvement.....	14
V.	DATA COLLECTION AND MONITORING.....	15
A.	Overall Program Evaluation.....	15
B.	Estimates of Fuel Cost Savings.....	16
C.	Deployment of Facilities within Disadvantaged Communities.....	16
D.	Surveys of EV Drivers Regarding Decision to Adopt an EV.....	16
E.	Programmatic Changes.....	17
VI.	SUMMARY AND CONCLUSION.....	17
APPENDIX A	PROVISIONS IN THE DECISION THAT ADDRESS VGI PILOT PROGRAM REPORTING.....	19
APPENDIX B	SEMI-ANNUAL REPORT SUMMARY.....	21
APPENDIX C	PROGRAM ADVISORY COUNCIL COMPANY/ORGANIZATIONAL REPRESENTATION.....	25
APPENDIX D	SITE HOST SCREENING TOOL.....	26
APPENDIX E	CIRCUIT TAXONOMY.....	29
APPENDIX F	SUPPLEMENTAL DATA COLLECTION OBJECTIVES, REQUIREMENTS AND 2016 VGI PILOT PROGRAM ASSESSMENT CRITERIA.....	31
APPENDIX G	RESEARCH PLAN – DATA COLLECTION AND ANALYSIS.....	32

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

Order Instituting Rulemaking to Consider
Alternative-Fueled Vehicle Programs, Tariffs, and
Policies.

Rulemaking 13-11-007
(Filed November 14, 2013)

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

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") Semi-Annual Report. This report will refer to the VGI pilot program as the Power Your Drive program (or "program").

¹ See, Decision, p. 139; finding of fact ("FOF") 80, p. 173, ordering paragraph ("OP") 3.k, p. 183:

We will also require SDG&E to file in 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 [note that the Decision (pp. 156, 161, 183) closed A.14-04-014].

Id., FOF 80, p. 173:

The alternative program terms shall include the following: SDG&E shall have quarterly check-in meetings with the Commission's Energy Division to provide the staff with updates concerning the information set forth in today's decision; SDG&E shall file semi-annual reports in R.13-11.007, or a successor proceeding, containing the information described in today's decision, and in the manner described in today's decision; and parties may file and serve opening and reply comments on the semi-annual reports in the manner described in today's decision.

Id., OP 3.k., p. 183:

If SDG&E decides to accept and to implement the 2016 VGI Pilot Program, SDG&E shall comply with all the meeting and reporting requirements as set forth in this decision and in Attachment 2.

I. OVERVIEW

The principal components of the reporting requirements as outlined in the Decision (*see* Appendix A), are reported in tables found in this report's Appendix B, with a narrative describing each component outlined below. In addition, this report summarizes relevant program activities beyond the formal reporting requirements, such as regulatory actions, implementation updates and customer engagement activities.

II. REGULATORY REQUIREMENTS AND KEY IMPLEMENTATION ACTIVITIES

The following summarizes regulatory actions required by the Decision, as well as reporting the progress on key implementation activities (citations below are to the Decision's ordering paragraph, unless otherwise indicated):

A. Required Advice Filings

1. Letter of Acceptance (OP 3.b, p. 181):

SDG&E shall have 30 days from today's date to accept the alternative VGI program terms, and to proceed with the 2016 VGI Pilot Program. To accept these alternative VGI program terms, SDG&E shall send a letter of acceptance to the Commission's Executive Director, which shall also be served on the service list in these proceedings, accepting the alternative VGI program terms, and stating that it will implement the 2016 VGI Pilot Program on the terms and conditions set forth in Attachment 2 of this decision, and as described in this decision.

- Submitted: March 1, 2016

2. VGI Balancing Account – Advice Letter (“AL”) 2868-E (OP 3.d, p. 182):

If SDG&E decides to accept and to implement the 2016 VGI Pilot Program, SDG&E shall within 30 days of its letter of acceptance, file a Tier 2 advice letter to establish its one-way, interest bearing, Vehicle-grid Integration Balancing Account (VGIBA) which shall be capped by the authorized start up budget amount of \$45 million.

- Submitted: March 2, 2016

- Approved: April 14, 2016 (effective April 1, 2016).²

3. Disadvantaged Community Definition – AL 2876-E (OP 3.h, p. 182):

If SDG&E decides to accept and to implement the 2016 VGI Pilot Program, SDG&E shall within 30 days of its letter of acceptance, file a Tier 1 advice letter concerning the use of the broader definition for determining the eligible disadvantaged communities that are to be targeted.

- Submitted: March 31, 2016
- Approved: April 28, 2016 (effective March 31, 2016).³

4. VGI Memorandum Account – AL 2881-E (OP 3.g, p. 182):

If SDG&E decides to accept and to implement the 2016 VGI Pilot Program, SDG&E shall within 120 days of its letter of acceptance, file a Tier 2 advice letter to establish a memorandum account to apply the participation payments it receives from the 2016 VGI Pilot Program to offset the operations and maintenance costs incurred from this program.

- Submitted: April 25, 2016
- Approved: May 23, 2016 (effective May 25, 2016).⁴

5. VGI Rate Schedule – AL 2877-E (OP 3.c, p. 182):

If SDG&E decides to accept and to implement the 2016 VGI Pilot Program, SDG&E shall within 30 days of its letter of acceptance, file a Tier 2 advice letter establishing the 2016 VGI Pilot Program, and the pricing formula that goes into calculating the VGI Rate.

- Submitted: March 31, 2016 (approval pending).

6. Program Participation Payment – AL 2886-E (OP 3.f, p. 182):

If SDG&E decides to accept and to implement the 2016 VGI Pilot Program, SDG&E shall within 120 days of its letter of acceptance, file a Tier 2 advice letter to establish the criteria upon which the participation payment to be paid by the site host is to be calculated.

² Approved via disposition letter.

³ Approved via disposition letter.

⁴ Approved via disposition letter.

- Submitted: April 25, 2016 VGI Rate (approval pending)

B. Program Advisory Council Meetings

The following are the dates, agenda and locations of the Program Advisory Council (“PAC”) Meetings. The PAC is composed of a diverse body of stakeholders, at the state and local level.⁵ Appendix C to this report lists the entities that have participated in the PAC meetings.

1. March 7, 2016 - San Diego

Agenda:

- PAC Roles and Responsibilities
- Overview of the Decision, and the Power Your Drive program
- Program Timeline
- Customer Engagement Plans
- Program Participation Payment – solicitation of input.⁶

2. March 24, 2016 - Conference Call

Agenda:

- Review and discuss Program Participation Payment input from PAC members

⁵ See, Decision, Attachment 2, ¶ 17., p. 9, and Appendix B: “SDG&E will solicit the participation of a broad and diverse stakeholder advisory group (the “VGI Program Advisory Council” or “PAC”) in planning and implementing the VGI Program following its approval by the Commission. The VGI PAC will include representatives from local and state government (including representation from the Energy Division), industry, labor and other stakeholder participants, ratepayer and environmental advocates, and representatives of Disadvantaged Communities. SDG&E shall also seek the participation of the San Diego Association of Governments on the PAC.” Appendix A, p.13-14 describes Roles and Responsibilities of the PAC.

⁶ See, Decision, Attachment 2, ¶ 10., p. 6 and Appendix B: “SDG&E shall file for approval of the proposed participation payment, after consulting with the VGI Program Advisory Council ... by way of a Tier 2 advice letter.”

3. August 10, 2016 - San Francisco

Agenda:

- Power Your Drive Progress Report
- Customer Engagement Update
- Geographic Information System (“GIS”) Mapping⁷
- Reporting

C. Electric Vehicle Service Provider (“EVSP”) Request for Information and Request for Proposal Schedule

Critical to the implementation of Power Your Drive, SDG&E’s will pre-qualify multiple EVSPs (“vendors”) who will be authorized to provide Power Your Drive operating systems and related hardware to control EVSE⁸ networks to implement the program’s basic requirements.

The use of multiple vendors is intended to foster innovation and enhance the customer’s experience and ensure customer choice of vendor, equipment and services. The first step in the qualifying process was the issuance of a Request for Information (“RFI”). This step was necessary to help develop and refine the Request for Proposal (“RFP”) process that followed.

Under the RFP process, potential bidders will be scored and ranked based on the degree to which the proposals met the technical and operational specifications of the Power Your Drive program.

As described in the Decision (*e.g.*, Attachment 2, ¶ 19, p.10) the minimum requirements for qualified vendors include but are not limited to the following: (1) be able to send the VGI Rate on a day-ahead basis to the site host or EV driver, (2) allow the site host or EV driver to set

⁷ See, Decision, pp. 141-142, section 5.7.8.: “SDG&E shall work with the PAC to select a geographic information system (GIS) based tool and interface that the public and other utilities can use to track the progress and attributes of the deployment.”

⁸ Electric Vehicle Service Equipment.

charging needs with the vendor, and (3) meet these charging needs, collect the EV charging usage data, and then send these data to SDG&E for billing processing.

The RFP process is currently underway, with the following milestones:

- RFI Issued: February 9, 2016
- RFI Closed: March 8, 2016
- RFI Vendor Debriefing: March 15, 2016
- RFP Issued: May 26, 2016
- Bidder's Conference: June 9, 2016
- RFP Closed: July 12, 2016
- Bid Evaluation: July 12, 2016 – in progress

The vendor validation process follows bid evaluations in order to evaluate and test capabilities, and to qualify vendors. This process includes a preliminary meter testing, by an independent third party to qualify to continue with the RFP process. What follows is a detailed testing of equipment and interface testing of various data exchange scenarios with simulated and actual EV loads to determine if the Power Your Drive requirements can be met by a vendor's proposed equipment and operating system. For example, the tests will examine the vendor's ability to receive and send the VGI Rate on a day-ahead basis to the site host or EV driver, to fulfill EV charging needs, to collect the EV charging usage data, and the ability to send these data to SDG&E to complete the billing processing. The testing process will evaluate various data exchange and data recovery, as well as charging operating scenarios.

D. Site Host Customer Screening Process⁹

SDG&E's has commenced its Power Your Drive site screening process, as described in prepared direct testimony.¹⁰ The site screening process will accommodate host site construction, tenant improvement timelines and situational needs. Some sites may be rejected due to physical limitations, unusually large construction costs and/or level of difficulty. The following describes the screening process steps:

- Step One – The potential site host customer learns about program through a variety of channels and expresses interest in participating in the Power Your Drive program by signing up on the online “Interest List” at www.sdge.com/PowerYourDrive. An automated response tells the customer their information was received. Some of the key ways customers learn about the program are through SDG&E's account executives, regional public affairs, community relations, residential or new construction teams, by presentations given to trade organizations by SDG&E's Clean Transportation Team or through referrals by other multifamily communities and workplaces that have joined the interest list. Pre-qualified vendors are also permitted to market the Power Your Drive program.
- Step Two – SDG&E's Clean Transportation team receives the response in their ev@sdge.com inbox and sends a personalized email to the customer offering some dates and times for them to choose from for a 30-minute follow-up call. The follow-up call

⁹ See, Decision, OP 3.i., p. 182: “The three year sign-up period for the 2016 VGI Pilot Program, as established by this decision, shall commence after the advice letters described in this Ordering Paragraph 3 have been approved by the Commission.” Since two advice filings are awaiting approval, the contract signings have not commenced during the timeframe of this report.

¹⁰ See, Decision, p. 29, Attachment 2, ¶ 15, p. 8, , ¶ 21, p. 11 (referencing screening criteria identified in Ex. SDG&E-2, Schimka, p. RS-7 lines 4-18).

serves three purposes: 1) to learn about the customer's EV charging needs, 2) to let the customer know that a completed EV survey should be completed before a site walk is performed, and, 3) to confirm if the customer should move to the next step in the process of a site walk. A sample survey is provided to all those signing up on the interest list to determine how many EVs are currently at the site and how many EVs the site could potentially grow to if charging was installed (please find the survey in Appendix D to this report).

- Step Three – Once the survey results are received, a site walk is performed to gather information to develop an engineering design and cost estimate. Those participating in the site walk include the site host customer, a Power Your Drive program representative and design engineering staff. Prior to the site walk, SDG&E performs initial research regarding the host site in order to make the site walk itself as productive as possible. During the site walk SDG&E collaborates with the customer to determine a location for the charging stations, amount of charging stations, and answer questions about the Power Your Drive program.
- Step Four – Weekly evaluation meetings are held with SDG&E staff to qualify Power Your Drive candidate customers. Sites are prioritized based on the screening criteria described in this report.

III. REPORTING REQUIREMENTS¹¹

The follow describes the Decision's reporting requirements.

¹¹ Decision, OP 3.k. p. 183; pp. 138 – 142, section 5.7.8; and, Attachment 2, ¶ 23, p. 11.

A. Site Host Customer Program Interest

This reports the number of customers or site hosts who have expressed interest in participating in the program, reported by site type: Multi-unit Dwelling (“MuD”) or workplace, and whether located within a Disadvantaged Community as defined and approved in AL 2876-E. While enrollments cannot proceed until all advice letters have been approved, as of August 16, 2016, 284 customers of SDG&E have indicated their interest in participating in Power Your Drive, 35% of which are in Disadvantaged Communities. Of the total customers on the interest list, 24% are MUD sites and 76% are at workplace locations.

B. Number of Installations

This section will report the number of potential sites that are advancing toward Power Your Drive facility installation. These will be reported in three steps of progression: signed contract with site host, facility installation in-progress and facility installation complete.¹²

C. Site Selection Criteria – Screening and Site Prioritization

This reports the site selection criteria used in prioritizing and selecting the sites that will host a Power Your Drive facility installation. Three key screening criteria are contemplated:

- Number of EV drivers currently and number of drivers who would consider buying or leasing an EV if charging was installed;
- Cost of Installation (embodies feasibility, level of difficulty);
- Circuit Type – please see circuit taxonomy found in Appendix E of this report, which summarizes the number of potential program customers who have

¹² *Id.*, OP 3.j., p. 183: “If SDG&E decides to accept and to implement the 2016 VGI Pilot Program, SDG&E shall in accordance with this decision, maintain a publicly available website of a database of all the hourly vehicle-grid integration (VGI) rates being charged on all of its circuits that have a VGI rate, and a circuit map, and this database of the VGI rates shall be made available to the Commission upon demand.”

expressed interest in participating in, and have been pre-screened for, the program. Circuit types are classified by key variables (residential, commercial, mixed, PV density, time of peak demand and load factor) and numbered. Because the VGI Rate includes a component that reflects peaking load conditions of a given circuit, Power Your Drive endeavors to achieve representation of the variety of circuit types, as depicted in the circuit taxonomy depicted in Appendix E.

Adjustments to the site prioritization will be made over time based on the installation targets established in the Decision for multi-unit dwellings (“MuDs”) and Disadvantaged Communities. SDG&E will track and record in aggregate the rationale associated with site host customers who are screened out (by SDG&E or the site host customer) or determined to be ineligible to participate in the Power Your Drive program. As a pilot, this could help to inform policy and the refinements of future programs of this nature.

D. Number of Installations Deployed and Fully Operational

This section will report the number of fully operational Power Your Drive facilities, reported by workplace, MuDs and Disadvantaged Communities.

E. Billing Option Preferences by Site Hosts

This section will report billing option selected by the site host, reported by workplace, MuDs and Disadvantaged Communities. There are two billing options available within the Power Your Drive program: VGI Rate¹³-to-EV Driver, where the EV driver participant receives

¹³ Program customers have two billing options for the VGI Rate – VGI Rate-to-EV Driver, and VGI Rate-to-Host. *See*, Decision, Attachment 2, ¶ 19., p. 10: “...VGI bills will be sent directly to the SDG&E EV driver (SDG&E customer, as originally proposed) receiving the VGI Rate or to the VGI Facility site host receiving the VGI Rate under the VGI Rate-to-Host pricing plan. Data will be provided to SDG&E by the qualified third party to SDG&E’s specifications in a manner acceptable to

the (separately metered) VGI Rate directly and is billed to the EV driver's residential bill/account; and, VGI Rate-to-Host, where the site host receives the (separately metered) VGI Rate as is billed to the hosts commercial bill/account. During the current pre-contractual stage of Power Your Drive, SDG&E will only report customer initial intentions, including "undecided," and these should not be construed as the final decisions of the site host customers.

F. VGI Rate-to-Host Load Management Plans

Conditions for site host eligibility for the VGI Rate-to-Host option requires the site host to submit a load management plan. This section will report the various load management (and execution) plans, proposed and approved within the Power Your Drive program. Results will be reported to summarize the effectiveness of the various load management plans (*e.g.*, tactics utilized to avoid or reduce EV charging during system and circuit on-peak periods).

G. Usage Rates

Usage rates reported in this section are designed to reflect the growth in use of the Power Your Drive facility in total, by workplace, MuD and Disadvantaged Community locations measured for total program and by average per Power Your Drive facility, kWh usage and number of EV drivers.

both parties to allow for this billing (*see* SDG&E's prepared direct testimony, Ex. SDG&E-2 (Schimka) p. 20 lines 1-19). Billing specifications per SDG&E's prepared testimony, Ex. SDG&E-7 (Schimka, Martin) p. ST-42 lines 8-13, are to send VGI rate on a day-ahead basis, allow customer (site host or EV driver) to set charging needs, meet these charging needs, collect usage data and send data to SDG&E for billing processing. For exceptional instances when a non-SDG&E customer is allowed by the VGI Facility site host at a site that is on the VGI Rate-to-EV Driver pricing plan to use the VGI Facility for vehicle charging temporarily, the site host will have the option to be the VGI Rate customer (*i.e.*, enrolled in the VGI Rate), and will be billed for this usage, similar to how the site host is billed under the VGI Rate-to-Host pricing plan."

H. Timing Patterns of EV Charging

Measuring EV charging patterns are central to the Power Your Drive program because it is intended to optimize grid and circuit utilization to benefit all ratepayers, not just Power Your Drive customers. The VGI Rate is designed to encourage EV charging at times that correlate to times of low VGI Rates (prices). Since the VGI Rate does not have static or fixed pricing per typical off-peak and on-peak Time-of-Use rate schedules, kWh consumption will be reported by price grouping depicting a range between off-peak to on-peak hours of the day. For example, consider four price groupings: 1) Off Peak Night / Early Morning Prices, 2) Off Peak Morning / Afternoon Prices, 3) Single CPP Event Prices (system or circuit), and 4) Double CPP Event Prices (system and circuit). Each of these price groups will be further defined with the actual recorded prices within each grouping once implementation commences and price and usage data are available.

I. Amount of Program Spend

This section will report the amount of program funds spent to date and during the specified time period.

J. Observable Trends

As described in the Decision, this section will endeavor to report observable trends or correlations between the number of EV site installations deployed compared to EV charging use and growth in the number of EVs. For example, one approach would be to measure the impact of the presence of Power Your Drive EV charging facilities at a given location on EV adoption at that specific location (*i.e.*, workplace or MuD settings). Currently, during the formative stages of Power Your Drive program implementation, it is too early in the program to report such trends.

IV. CUSTOMER ENGAGEMENT

Maintaining an excellent Power Your Drive customer experience is vital during all touch points of customer engagement. SDG&E has received a strong and positive response from customers and the community regarding the program. This is demonstrated by the number of customers who have signed up on the program interest list, as well as requests from community partners to learn more about the program. An integrated approach to the program's communication efforts helps leverage the work the utility is already doing in the region and helps ensure customers and stakeholders are informed about the EV charging opportunities and benefits Power Your Drive offers.

A. Power Your Drive Customer Engagement and Integrated Communication

SDG&E has a long history of customer and community education and outreach on a variety of energy topics, issues and programs. Electric transportation education and outreach topics, per the Guiding Principles of D.11-07-029 (issued July 25, 2011) have been included in such efforts, including EV time-of-use rates, metering options, safety, reliability, electric vehicle supply equipment installation, and the benefits of electric transportation. Power Your Drive program information and opportunities have been added to the already robust mix of transportation electrification topics.

B. Integration with Relevant Regional Programs, Education and Outreach

SDG&E has partnered with many community organizations to help get the word out about Power Your Drive. Some of these partnerships include:

- Plug In America works with SDG&E to host ride-and-drives featuring Power Your Drive and to launch a dealership education and outreach program to educate EV salespeople on general EV knowledge, as well as Power Your Drive as a charging opportunity for those purchasing or leasing EVs.

- For those that don't qualify for the Power Your Drive program, SDG&E has teamed up with the existing Plug-In SD program managed by the San Diego Association of Governments ("SANDAG") and the Center for Sustainable Energy ("CSE"), and funded by a grant from the California Energy Commission. This program offers information and technical assistance to customers looking to install charging. An example of a Power Your Drive customer referred to Plug-In SD could be a customer interested in installing convenience (short dwell time) charging that is not covered under the Power Your Drive program. SDG&E will follow-up with Plug-In SD to track the outcome of these referrals.
- SDG&E has also partnered with Cleantech San Diego to implement a general education and outreach campaign promoting the benefits of driving electric.

C. Community Partnerships

On May 16, 2016, SDG&E announced that its shareholders will invest \$7.5 million over the next five years to develop and implement a new education campaign to create awareness and knowledge about electric transportation, expand interest in electric vehicle adoption and lead the charge to help cities to advance and support transportation electrification. The educational objectives and the desired result of this effort are: to reduce harmful air emissions, promote the use of EV charging and increase utilization of power from renewable energy, and to foster a strong commitment to electric transportation within San Diego and south Orange Counties. The grant program encourages nonprofits to bring their best EV ideas forward. To date, more than 60 groups have been awarded grant funding.

D. Employee Involvement

In 2015, SDG&E launched its "Race to 500" with the goal of having 500 employees driving electric cars by 2020. As of July 1, 2016, SDG&E and its headquarters has 266

employees driving EVs, and has installed over 180 grid-integrated EV charging stations at its 17 sites. By implementing an employee education and outreach program to inform all SDG&E departments about electric transportation and the Power Your Drive program, SDG&E employees have become important clean transportation ambassadors for the region, and are prepared to inform customers about Power Your Drive when out in the community.

V. DATA COLLECTION AND MONITORING¹⁴

The Decision describes its “Supplemental Data Collection Objectives, Requirements and 2016 VGI Pilot Program Assessment Criteria” as follows:

Data collection and 2016 VGI Pilot Program assessment criteria used by the VGI Program Advisory Council to determine the need for any programmatic change are identified in the Research Plan (Data Collection and Analysis) described in SDG&E’s prepared direct testimony Ex. SDG&E-6 (Martin) p. JCM-35 line 9 – p. 37 line 13, and will be supplemented as described below pursuant to the modifications to SDG&E’s VGI Program proposal as a result of D.16-01-045. Data collection identified in this testimony specifically relate to measuring 2016 VGI Pilot Program performance and cost-effectiveness. With the addition of the VGI Rate-to-Host option, there is a need for additional data collection in order to compare and contrast the performance of the two VGI options (i.e., VGI Rate-to-EV Driver and VGI Rate-to-Host).

Although there is little data to report at this early date, the sections below describe the data elements requested for the Research Plan, adopted by the Decision and described in Appendices F and G to this report.

A. Overall Program Evaluation

The Research Plan proposed by SDG&E to evaluate Power Your Drive provides a methodology for testing the effects of grid-integrated EV charging as modeled in SDG&E’s cost-effectiveness exhibit. As EV charging data and cost information becomes available through the

¹⁴ See Decision, Attachment 2, Appendix B, p. 15 – Data collection that could be combined with the Quarterly Report for the Semi-annual Report.

program deployment and operations, observed results will replace hypothesized assumptions used in order to evaluate the cost-effectiveness of the program.

B. Estimates of Fuel Cost Savings

This section will report estimates of fuel cost savings through the use of the Power Your Drive facility, under both the VGI Rate-to-EV Driver and VGI Rate-to-Host options. Once the program commences an estimation method will be applied based on kWh consumed at the Power Your Drive facilities. Fuel cost savings are impacted by the hours and price the EV driver chooses to charge at VGI facilities, the miles per gallon of the vehicle the EV driven is replacing, and the price of gasoline or diesel being displaced.

C. Deployment of Facilities within Disadvantaged Communities

This section will report the number of Power Your Drive facilities installed within Disadvantaged Communities, including EV car-sharing deployment. These will be reported by those in workplace and MuD settings, as described and reported in Section III. Currently, 35% of customers (*i.e.*, host sites) that have expressed an interest in participating are located in Disadvantaged Communities.

D. Surveys of EV Drivers Regarding Decision to Adopt an EV

Surveys of EV drivers are planned as part of SDG&E's Research Plan. There are a number of factors that these surveys will measure. For example, as identified in the Research Plan (Data Collection and Analysis):¹⁵

- Estimated percentage of EV purchases related to the VGI Pilot Program (gathered through surveys of EV customers using the VGI facilities);

¹⁵ See, Decision, Attachment 2, Appendix B, p. 15: "Supplemental Data Collection Objectives, Requirements and 2016 VGI Pilot Program Assessment Criteria."

- Estimated VGI Pilot program-related increases in ZEV miles traveled per EV (gathered through surveys of EV customers using the VGI facilities); and
- EV customer input on the VGI mobile and web applications, the VGI Rate and overall convenience and ease of use of the VGI facility (gathered through surveys of EV customers using the VGI facilities).

E. Programmatic Changes

This will describe any programmatic changes implemented by SDG&E during the reporting period. These changes, if any, will be provided after they are vetted with the Program Advisory Council. At present, there have been no such changes.

VI. SUMMARY AND CONCLUSION

SDG&E's Power Your Drive program has made significant progress in the start-up phase. All necessary Advice Letters have been submitted with remaining approvals expected in the near term. Once all approvals have been obtained, SDG&E and its partners will begin formally marketing the program and enrolling customers. In the meantime, as of August 16, 2016, 284 customers have already expressed interest in participating with strong representation from Disadvantaged Communities.

With respect to obtaining EVSE from third party vendors – the crux of the program's effort to obtain innovative and cost-effective charging solutions – SDG&E successfully conducted a Request for Information process that informed the pending Request for Proposal process (the closing date for RFP bids was July 12). Proposals submitted in response to the RFP are currently being analyzed and equipment is being tested to ensure it meets the Power Your Drive program requirements. After the initial RFP process is completed SDG&E will be able to determine when the next RFP solicitation will be launched for Power Your Drive.

SDG&E is in regular consultation with Energy Division staff and has met with its Program Advisory Council three times since the Commission approved the Decision. SDG&E

appreciates the input it has received, particularly with regard to development of the Participation Payment and looks forward to continued stakeholder interest.

Respectfully submitted,

/s/ Michael Schneider

Michael Schneider
Vice President, Operations Support and
Sustainability, and Chief Environmental Officer

SAN DIEGO GAS & ELECTRIC COMPANY
8330 Century Park Court
San Diego, CA 92123
Telephone: (858) 654-1590
Facsimile: (619) 699-5027

September 6, 2016

APPENDIX A
PROVISIONS IN THE DECISION THAT ADDRESS
VGI PILOT PROGRAM REPORTING¹⁶

Decision, OP 3.k: If SDG&E decides to accept and to implement the 2016 VGI Pilot Program, SDG&E shall comply with all the meeting and reporting requirements as set forth in this decision and in Attachment 2.

Id., Attachment 2, ¶ 23. In order to provide an assessment of the 2016 VGI Pilot Program consistent with the Guiding Principles, six months after the 2016 VGI Pilot Program is launched, and every six months thereafter until February 1, 2021. SDG&E shall file an interim progress report in R.13-11-007 or in a successor proceeding, and shall post the report on its website and serve a notice of availability on the service lists in A.14-04-014 and R.13-11-007. The interim progress report shall include the information described in D.16-01-045, the data as described in Appendix B of this Attachment, and a description of any programmatic changes implemented by SDG&E prior to the date of the report. 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 may file and serve reply comments within 50 days of the service of the report.

- a. SDG&E shall be required to have a check-in meeting (in person or by telephone) with the Commission’s Energy Division staff every three months to provide the staff with updates regarding the information described in D.16-01-045.

5.7.8. Monitoring, Reporting, and Data Collection¹⁷

As part of the alternative VGI program terms, we will require SDG&E to have a check-in meeting with the Commission’s Energy Division staff every three months to provide the staff with updates regarding the following: (1) the amount of interest in siting EV site installations at MUDs and workplaces; (2) the number of EV site installations that were approved, or that are in the pipeline, for deployment; (3) the site selection criteria used in selecting the sites that will host the EV site installations; (4) the number of EV site installations and EV charging stations that SDG&E has deployed under the approved alternate VGI program terms; (5) the rate option that the site hosts have chosen; (6) how the VGI-Rate-to-Host option is being implemented by the site hosts; (7) the usage rates at these EV site installations and charging stations; (8) the timing patterns of EV charging and the degree to which these times correlate to times of low VGI rates; (9) the amount of program funds spent during the quarter, and the cumulative amount spent; and

¹⁶ Decision, OP 3.k, p. 183 and Attachment 2, ¶ 23, p. 11.

¹⁷ Decision, pp. 138 – 142, per section 5.7.8., only the language associated with “reporting” is noted here. Language pertaining to monitoring, data collection and program evaluation is not referenced here.

(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.

We will also require SDG&E to file in 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...

Regarding the type of data that is to be reported, Appendix B to the Proposed Settlement addresses the supplemental data collection. This supplemental data collection is in addition to the data collection and analysis referenced in Exhibit SDG&E-6 at 35-37. Attachment 2 of this decision, and Appendix B of Attachment 2 replicate the type of data to be reported. As discussed above, we have modified the Proposed Settlement by the alternative VGI program terms. The alternative terms add quarterly updates for SDG&E to provide information on 10 issues, and accelerate the time in which the reports are to be filed...

We recognize, however, that the format of the monitoring, data reporting, and collection is crucial. There is a need to report data in a manner that ensures that the Commission can conduct an analysis of EV charging technologies that will work in a harmonious manner across the utilities' service territories. (*See* Public Utilities Code Section 740.2(e)). Due to the common geospatial nature of the proposed pilot programs of SDG&E, SCE, and PG&E, SDG&E shall work with the PAC to select a geographic information system (GIS) based tool and interface that the public and other utilities can use to track the progress and attributes of the deployment.¹⁸ The task of selecting a GIS tool has been included as part of the modifications to the alternative VGI program terms in Attachment 2 of this decision. As discussed earlier, the Commission also encourages SDG&E to use this data to help inform SDG&E's DRP efforts pursuant to Public Utilities Code Section 769 in which SDG&E identifies the VGI Rate design as a means of optimizing the use of grid assets on the local distribution system.

¹⁸ H&S Code § 44268.2(b) requires that an EV charging provider disclose to the National Renewable Energy Laboratory the geographic location of the charging station and other information.

**APPENDIX B
SEMI-ANNUAL REPORT SUMMARY**

**VGI (Power Your Drive) Interim Progress Report¹⁹
September 1, 2016
Quarterly Report Results as of August 16, 2016**

Reporting Requirement	Update	
1) Interest in siting EV site installations at MUDs and workplaces <i>[Interest List: number of host sites by Disadvantaged Community (DAC) locations]</i>	MUD	68
	MUD DAC	16
	WP	216
	WP DAC	84
2) Number of EV site installations that were approved, or that are in the pipeline for deployment	Pre-screened by SDG&E	29
	Contract & Easements Executed ²⁰	0
	Installations in-progress	0
3) Site selection criteria used in selecting the sites that will host the EV site installations	<ul style="list-style-type: none"> • Volume of EV interest (current & planned out 3 years) • Cost of Installation (embodies feasibility, level of difficulty) 	

¹⁹ Reporting requirements are identified in Decision, Section 5.7.8, p. 139 and in Attachment 2, Appendix B, p.15.

²⁰ *See, id.*, OP 3.i., p. 182: “The three year sign-up period for the 2016 VGI Pilot Program, as established by this decision, shall commence after the advice letters described in this Ordering Paragraph 3 have been approved by the Commission.” Since two advice filings are awaiting approval, the contract signings have not commenced during the timeframe of this report.

<i>[within MUD, WP & DAC segments]</i> ²¹	<ul style="list-style-type: none"> • Circuit Type (residential, commercial, mixed, PV density) – see attached circuit taxonomy in Appendix E 	
4) Number of EV site installations and EV charging stations that SDG&E has deployed under the approved alternate VGI program terms [<i>“deployed” means fully operational</i>]	0	
5) Rate [<i>billing</i>] option that the site hosts have chosen ²² [<i>number of hosts by option, number of drivers</i>]	Bill to Driver	171
	Bill to Host	9
	Undecided	104
6) How the VGI-Rate-to-Host option [<i>load management plan</i>] is being implemented by the site hosts [<i>Number of host sites per load management plan type; categories of load management plan types will expand as they are reviewed and approved</i>]	Powering Down/off	Will be provided when implemented.
	Host Pricing	Will be provided when implemented.
	Facility Mgmt.	Will be provided when implemented.
	Other	Will be provided when implemented.

²¹ Decision, section 5.7.3, pp. 129 - 132. Also see prepared direct testimony Ex. SDG&E-2 (Schimka) p. RS-7, lines 4 – 18, there adopted by the Decision.

²² During the current pre-contractual stage of Power Your Drive, SDG&E will only report customer initial intentions, including “undecided,” and these should not be construed as the final decisions of the site host customers.

7) Usage [<i>facility utilization</i>] rates at these EV site installations and charging stations [<i>frequency per quartile of EV driver volume and kWh sold per facility</i>]	Quartile	Volume	kWh sold
	25%		
	50%		
	75%		
	100%		
8) Timing patterns of EV charging and the degree to which these times correlate to times of low VGI rates [<i>kWh consumed by price range: low, medium and during a peaking event</i>]	Off Peak Night / Early Morning Prices	Will be provided when implemented.	
	Off Peak Morning / Afternoon Prices	Will be provided when implemented.	
	Single Event Prices (system or circuit)	Will be provided when implemented.	
	Double Event Prices (system and circuit)	Will be provided when implemented.	
9) The amount of program funds spent during the quarter, and the cumulative amount spent	Quarter Spend (April / May / June 2016)	Capital – \$0 O&M - \$0	
	Spend to Date (as of July 31, 2016)	Capital – Approximately \$347k O&M - \$0	
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	Will be provided when implemented.		

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 cost savings through the use of the VGI Facility, under both the VGI Rate-to-EV Driver and VGI Rate-to-Host pricing plans	Once program commences an estimation method will be applied based on kWh sold at VGI facilities. Fuel cost savings are impacted by the hours and price the EV driver chooses to charge at VGI facilities, the miles per gallon of the vehicle the EV driven is replacing, and the price of gasoline or diesel being displaced.
B) Deployment of VGI Facilities <i>[number of]</i> within Disadvantaged Communities (DAC), including EV car-sharing deployment	DAC – Workplace
	DAC – MuD
C) Status of program implementation to date	Embodied 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 or funded to track the installation of charging stations by others outside of the VGI pilot program. 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	Will be provided when known.
G) Description of any programmatic changes implemented by SDG&E prior to the date of the report	Will be provided after proposed changes are vetted with the PAC.

APPENDIX C
PROGRAM ADVISORY COUNCIL
COMPANY/ORGANIZATIONAL REPRESENTATION

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

**APPENDIX D
SITE HOST SCREENING TOOL**

Site Host Screening Record	
Property/Business Name	<input type="text"/>
Attachments	 File Attachment
Facility POC Name	<input type="text"/>
Facility POC Title	<input type="text"/>
Facility Address	<input type="text"/>
Facility POC Phone Number	<input type="text"/>
Facility POC Mobile Number	<input type="text"/>
Facility POC Email Address	<input type="text"/>
All Other POCs	<input type="text"/>
Workplace/Multifamily	<input type="text"/> 
Multifamily Type	<input type="text"/> 
Workplace Type	<input type="text"/> 
Number of Employees or Residents	<input type="text"/>
How Did You Hear about the Program	<input type="text"/>
Estimated Number of EV Drivers	<input type="text"/>
Date of First Contact	<input type="text"/> 
Referral	<input type="text"/> 
Account Executive:	<input type="text"/> 
Regional Public Affairs:	<input type="text"/> 
Community Relations:	<input type="text"/> 
Customer Comments/Questions	<input type="text"/>
Follow-up Interview Conducted	<input type="text"/> 
Date of Follow-up Interview	<input type="text"/> 
Property/Business General Description	<input type="text"/>

Interest in Program	<input type="text"/>
Average Parking Duration (hrs)	<input type="text"/>
Expected Number of Future EV Drivers	<input type="text"/>
How many total parking spaces	<input type="text"/>
# of charging stations Requested	<input type="text"/>
Incentives Offered to EV Drivers	<input type="text"/>
Company commitment to sustainability	<input type="text"/>
Is this person a decision maker	<input type="text"/> <input type="checkbox"/>
Authority to Sign Easements	<input type="text"/> <input type="checkbox"/>
Company Decision Maker/Authority	<input type="text"/>
Reviewed Agreement Terms	<input type="text"/> <input type="checkbox"/>
Reviewed Easement Terms	<input type="text"/> <input type="checkbox"/>
Willing to Sign Agreement for 10 Years	<input type="text"/> <input type="checkbox"/>
Willing to Allow Access for Installation & Maintenance	<input type="text"/> <input type="checkbox"/>
Willing to provide employee/tenant access to chargers	<input type="text"/> <input type="checkbox"/>
Willing to promote EV adoption	<input type="text"/> <input type="checkbox"/>
Willing to attend EV Workshop	<input type="text"/> <input type="checkbox"/>
Willing to distribute collateral	<input type="text"/> <input type="checkbox"/>
Understands Additional Services Policy	<input type="text"/> <input type="checkbox"/>
Understands Participation Fee Arrangement	<input type="text"/> <input type="checkbox"/>
Understands ADA Requirements	<input type="text"/> <input type="checkbox"/>
Understands Billing Options	<input type="text"/> <input type="checkbox"/>
Initial Billing Preference	<input type="text"/> <input type="checkbox"/>
Outcome of Follow-up	

	<input type="text"/>
Date Sight Walk Scheduled	<input type="text"/>
Site Walk Conducted?	<input type="text"/>
Date Site Walk Conducted	<input type="text"/>
Site Walk Conducted By	<input type="text"/>
Results of Site Walk	<input type="text"/>
Site Walk Report	<input type="text"/>
. Notes/Comments .	<input type="text"/>
Circuit Info	<input type="text"/>
Zip Code	<input type="text"/>
Disadvantaged Community	<input type="text"/>
Census Tract	<input type="text"/>
Cost Estimate	<input type="text"/>
Cost Per Charger	<input type="text"/>
Pre-Screening Disposition:	<input type="text"/>
	Summarize the decision to Qualify/Disqualify Site during Screening Process. (Stage - Reason)

APPENDIX E CIRCUIT TAXONOMY

VGI Pilot - Circuit Sampling Distribution									
As of 8/15/2016		Circuit Peaking Hours							
		Hours 11 thru 14*		Hours 15 thru 17		Hours 18 thru 19		Hours 20 thru 21	
Circuit Type	Solar Penetration	Load Factor	Load Factor	Load Factor	Load Factor	Load Factor	Load Factor	Load Factor	Load Factor
Residential Dominant	High Solar Penetration	1 0 0 0	2 0 0 0	3 0 0 0	4 1 0 0	5 1 0 0	6 33 10 0	7 21 11 5	8 101 26 2
	Low Solar Penetration	9 0 0 0	10 2 0 0	11 0 0 0	12 2 0 0	13 1 0 0	14 5 5 0	15 10 4 1	16 18 8 1
Res. and C&I Mixed	High Solar Penetration	17 7 0 0	18 2 0 0	19 21 6 0	20 22 5 0	21 30 13 1	22 61 17 2	23 41 16 1	24 62 23 2
	Low Solar Penetration	25 45 17 2	26 19 6 1	27 56 21 1	28 14 7 0	29 18 10 0	30 13 2 0	31 38 8 2	32 2 0 0
Commercial & Industrial Dominant	High Solar Penetration	33 9 5 0	34 6 5 0	35 8 2 0	36 3 1 0	37 0 0 0	38 1 0 0	39 2 2 0	40 0 0 0
	Low Solar Penetration	41 57 15 2	42 56 14 1	43 44 8 1	44 14 2 0	45 3 1 0	46 2 2 1	47 3 0 0	48 0 0 0

Distribution Cell #	
SDG&E Circuit Count	
Interested Sites	Pre-Screened Sites

* 6 Circuits (0.7% of the taxonomy) with summer weekday peak hours between 22:00 and 10:59 are not included.

Operational Definitions for Circuit Taxonomy

<u>Attributes</u>	<u>Count</u>	
Total SDG&E Circuits	1,040	
Circuits with Attributes	860	
Circuits without Attributes	180	Note: SDG&E does not have 4kV circuit capacity data readily available

<u>Circuit Type</u>	<u>Count</u>
Residential	196
Mixed	451
Commercial & Industrial	213

Circuit Types are classified as Residential, Mixed or Commercial & Industrial if 70% of total consumption is from that class.

Summer Week Day Peak **Circuit**

<u>Hour (Average)</u>	<u>Count</u>
11:00 – 14:59	203*
15:00 – 17:59	185
18:00 – 19:59	168
20:00 – 21:59	298

* 6 Circuits (0.7% of the taxonomy) with summer weekday peak hours between 22:00 and 10:59 are not included.

Annual Load Factor (as Percentage of Load) =
Average Hourly kWh / Peak (kW)

<u>Load Factor</u>	<u>Count</u>
(H) High => 46.0%	443
(L) Low =< 45.99	417

Solar Penetration (as percentage) =
Solar Capacity / Circuit Capacity

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

APPENDIX F²³
SUPPLEMENTAL DATA COLLECTION OBJECTIVES, REQUIREMENTS
AND 2016 VGI PILOT PROGRAM ASSESSMENT CRITERIA

Data collection and 2016 VGI Pilot Program assessment criteria used by the VGI Program Advisory Council to determine the need for any programmatic change are identified in the Research Plan (Data Collection and Analysis) described in SDG&E's prepared direct testimony Ex. SDG&E-6 (Martin) p. JCM-35 line 9 – p. 37 line 13, and will be supplemented as described below pursuant to the modifications to SDG&E's VGI Program proposal as a result of D.16-01-045. Data collection identified in this testimony specifically relate to measuring 2016 VGI Pilot Program performance and cost-effectiveness. With the addition of the VGI Rate-to-Host option, there is a need for additional data collection in order to compare and contrast the performance of the two VGI options (*i.e.*, VGI Rate-to-Driver and VGI Rate-to-Host). To accomplish this, the data collection in the Research Plan will include, but will not be limited to:

- Customer (EV drivers and site Hosts) enrollment by site and VGI pricing plan (*i.e.*, VGI Rate-to-Driver and VGI Rate-to-Host)
- Under the VGI Rate-to-Host, load management plans and pricing or fees, including those measures taken that encourage the facilitation of the integration of renewable energy
- Estimates of fuel cost savings through the use of the VGI Facility, under both the VGI Rate-to-Driver and VGI Rate-to-Host pricing plans
- VGI Facility utilization rates
- Deployment of VGI Facilities within or adjacent to a Disadvantaged Community, including EV car-sharing deployment

There is also a need for data collection adequate to provide a description of the 2016 VGI Pilot Program's status and activities, and an assessment of the 2016 VGI Pilot Program's progress consistent with the Guiding Principles in the Interim Progress Report. To accomplish this, additional data collection will include, without limitation, data related to:

- Status of program implementation to date
- Comparing the installations of non-utility EVSE to VGI EVSE
- Surveys of customer and driver decisions to adopt PEVs
- Rate of achievement of supplier diversity and workforce objectives

The VGI PAC will have the flexibility to determine if additional 2016 VGI Pilot Program related measurement and evaluation objectives are of interest and will help to inform Commission policy. The VGI PAC will then articulate the purpose behind these objectives, specify these additional data collection requirements, and determine how they will be funded and resourced.

²³ See, Decision, Attachment 2, Appendix B, p. 15.

APPENDIX G RESEARCH PLAN – DATA COLLECTION AND ANALYSIS²⁴

The Research Plan described below provides a link between the hypothesized assumptions described in section I and results illustrated in section IV. The realized VGI Pilot Program results will be available upon completion of the VGI Pilot Program. As customer EV charging data and cost information becomes available through the VGI Pilot Program deployment and operation, observed results will replace hypothesized assumptions used above in order to more rigorously evaluate the cost-effectiveness of SDG&E's completed VGI Pilot program. Data collection will begin the first year of the pilot (2015), load impact analysis and reporting will begin after two years of implementation (2017), and a cost-effectiveness analysis 18 months after the final VGI facility is installed (2019).

SDG&E will perform a cost-effectiveness analysis eighteen months after the last VGI facility is installed and operational, using the data gathered during the VGI Pilot Program. SDG&E will report the results of the analysis to the Commission and interested parties. This time frame allows six months for SDG&E to analyze at least one year's data for each VGI facility. The following data collection and analysis is planned for the VGI Pilot Program:

- Actual VGI installation costs (total and average per site);
- Actual VGI operating costs (over the fleet of VGI facilities);
- Charging load profiles (from the VGI facility metered data for MUD and workplace locations, in aggregate and by circuit);
- Estimated percentage of EV purchases related to the VGI Pilot Program (gathered through surveys of EV customers using the VGI facilities);
- Estimated VGI Pilot program-related increases in ZEV miles traveled per EV (gathered through surveys of EV customers using the VGI facilities);
- EV customer input on the VGI mobile and web applications, the VGI Rate and overall convenience and ease of use of the VGI facility (gathered through surveys of EV customers using the VGI facilities);
- VGI kWh usage by price, over time (gathered through the SDG&E VGI billing data);
- Where available, EV related kWh usage at home will be reviewed with VGI kWh usage at workplace VGI facilities (gathered through the SDG&E VGI billing data); and
- Where possible, determine whether EV-TOU or EV-TOU2 adoption has increased as a result of the VGI Pilot.

²⁴ See, Decision, Attachment 2, Appendix B, p. 15, "Supplemental Data Collection Objectives, Requirements and 2016 VGI Pilot Program Assessment Criteria" supplemental to the Research Plan (Data Collection and Analysis) as described in SDG&E's prepared direct testimony Ex. SDG&E-6 (Martin) p. JCM-35 line 9 – p. 37 line 13.

SDG&E intends to conduct measurement and evaluation studies on the VGI Pilot Program. If, after two years of implementation, the extent to which the VGI Pilot Program produces load impacts, load impact studies will be conducted according to the Load Impact Protocols that were adopted in D.08-04-051. These protocols provided rules that specified required output data that must be included in all measurement and evaluation reports. For example, these protocols require that every load impact measurement and evaluation report include hourly ex-post load impact results for each event day for the entire program, as well as on average per customer. In addition, each load impact report is required to contain a 10-year hourly forecast of expected future load impacts for 24 different temperature scenarios. D.08-04-051 further required that every demand response activity be evaluated every year and that the load impact reports be filed with the CPUC on April 1st of each year. The decision specified that the load impact protocols applied to all demand response activities, which includes both demand response programs and dynamic rates.