

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

Application of SAN DIEGO GAS & ELECTRIC  
COMPANY (U902E) for Approval of its Electric  
Vehicle-Grid Integration Pilot Program.

Application 14-04-014  
(Filed April 11, 2014)

And Related Matter.

Rulemaking 13-11-007

**SAN DIEGO GAS & ELECTRIC COMPANY'S (U902E) RESPONSE TO ASSIGNED  
COMMISSIONER AND ADMINISTRATIVE LAW JUDGE QUESTIONS**

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**TABLE OF CONTENTS**

- I. VENDOR PREQUALIFICATION AND SITE SELECTION..... 2**
  - A. Describe the Request for Information (RFI) process. What does SDG&E expect to achieve through the RFI?..... 2**
    - 1. The Request for Information (“RFI”) process..... 2**
    - 2. What does SDG&E expect to achieve through the RFI process?..... 3**
  - B. Describe the Request for Proposal (RFP) process. What is expected to be included in bids from vendors and how will vendors be evaluated to become “prequalified” to participate in the program? ..... 4**
    - 1. The Request for Proposal (RFP) process..... 4**
    - 2. What is expected to be included in bids from vendors and how will vendors be evaluated to become “prequalified” to participate in the program? ..... 5**
  - C. Through the RFP, how will SDG&E evaluate if “complementary services” are “necessary” to support the objectives of the program? How will “complementary services” impact the budget for the program and the number of sites SDG&E is able to serve? ..... 7**
    - 1. Through the RFP, how will SDG&E evaluate if “complementary services” are “necessary” to support the objectives of the program? ..... 7**
    - 2. How will “complementary services” impact the budget for the program and the number of sites SDG&E is able to serve? ..... 8**
  - D. Will SDG&E conduct marketing and outreach to potential host site participants or is this solely the responsibility of third-parties under the Settlement? ..... 8**
  - E. Will the site selection criteria articulated in the prepared direct testimony of Randy Schimka at RS-7 (Exhibit SDG&E-02) still apply under the settlement? Please specify the process SDG&E will use to evaluate and choose sites to participate in the program. .... 10**
    - 1. Will the site selection criteria articulated in the prepared direct testimony of Randy Schimka at RS-7 (Exhibit SDG&E-02) still apply under the settlement? ..... 10**
    - 2. The process SDG&E will use to evaluate and choose sites to participate in the program ..... 10**
  - F. What criteria will be used to choose sites in disadvantaged communities?... 13**
  - G. How will third party selection of sites affect the statistical significance of the pilot in determining impact of the VGI rate on the 48 prototypical circuits within the SDG&E territory?..... 14**
  - H. Please detail the RFI, RFP, site selection, and tariff enrollment processes (per the Application and as modified by the Settlement) in a process**

	<b>diagram. Identify each entity and action necessary to implement the VGI Program from the RFI to vehicle charging and customer billing. Cite to specific sections or parts in the Application or Settlement for clarity. ....</b>	<b>15</b>
<b>I.</b>	<b>What issues need to be considered to determine the proposed site host participation payment? .....</b>	<b>16</b>
<b>J.</b>	<b>How does SDG&amp;E propose that the participation payment be determined? .....</b>	<b>16</b>
<b>II.</b>	<b>INSTALLATION, OPERATIONS, MAINTENANCE AND OWNERSHIP OF CHARGING INFRASTRUCTURE .....</b>	<b>17</b>
<b>A.</b>	<b>Does the Settlement maintain SDG&amp;E’s proposal to own and rate base the charging infrastructure? If so, how is ownership of this infrastructure imperative to the success of the program? .....</b>	<b>17</b>
<b>B.</b>	<b>How will SDG&amp;E mitigate interruptions or terminations in EVSP vendor operations for EVSPs providing services to a site host under the VGI Program (e.g. if the EVSP changes business or no longer conducts business in California)? .....</b>	<b>19</b>
<b>III.</b>	<b>BILLING AND RATES .....</b>	<b>22</b>
<b>A.</b>	<b>What are the minimum requirements for the EVSE and VGI operating systems? If these are not yet determined, how will SDG&amp;E determine them? Please refer to specific national or international standards where available. ....</b>	<b>22</b>
<b>B.</b>	<b>Will availing the VGI Rate-to-Host option increase revenue requirements for the program? If so, how? .....</b>	<b>24</b>
<b>IV.</b>	<b>PROGRAM ADVISORY COUNCIL (PAC) .....</b>	<b>25</b>
<b>A.</b>	<b>Who determines entry into the PAC? How will SDG&amp;E mitigate conflicts of interest in decision-making if market participants are allowed to participate in procurement decisions, particularly if it is intended to operate “in a manner similar to the Procurement Review Group”? How will SDG&amp;E allow for entry and feedback from new market participants and ensure that the size does not become unwieldy? .....</b>	<b>25</b>
	<b>1. Who determines entry into the PAC? .....</b>	<b>25</b>
	<b>2. How will SDG&amp;E mitigate conflicts of interest in decision-making if market participants are allowed to participate in procurement decisions, particularly if it is intended to operate “in a manner similar to the Procurement Review Group”? .....</b>	<b>26</b>
	<b>3. How will SDG&amp;E allow for entry and feedback from new market participants and ensure that the size does not become unwieldy? .....</b>	<b>26</b>
<b>B.</b>	<b>How often will the PAC meet? Who determines the agenda for PAC meetings? .....</b>	<b>27</b>

C.	<b>What is the process for the PAC to make recommendations for program implementation? What is the process for the CPUC to consider and/or approve recommendations made by the PAC? .....</b>	<b>27</b>
1.	<b>The PAC process for making recommendations.....</b>	<b>27</b>
2.	<b>Role of the Guiding Principles .....</b>	<b>28</b>
3.	<b>PAC role in Data Collection Objectives and Requirements .....</b>	<b>30</b>
4.	<b>Roles and Responsibilities of the PAC .....</b>	<b>30</b>
5.	<b>What is the process for the CPUC to consider and/or approve recommendations made by the PAC? .....</b>	<b>31</b>
V.	<b>MONITORING AND EVALUATION .....</b>	<b>32</b>
A.	<b>Under a VGI rate-to host option, what is the process for evaluating the adequacy of the host’s load management plan? How will SDG&amp;E assess the impact of EV charging on distribution circuits if the site host is aggregating and managing load through, potentially, multiple strategies? .....</b>	<b>32</b>
1.	<b>Evaluating the Adequacy of the Host’s Load Management Plan.....</b>	<b>32</b>
2.	<b>Assess the Impact of EV Charging on Circuits Under the VGI Rate-to-Host Option.....</b>	<b>34</b>

- Attachment A – VGI Implementation Summary Process**
- Attachment B – VGI Deployment Plan**
- Attachment C – Site Host Enrollment Process**
- Attachment D – Site Host VGI Facility Installation Process**
- Attachment E – Rate-to-EV Driver Operations**
- Attachment F – Rate-to-Host Operations**
- Attachment G – Illustrative Draft RFI**
- Attachment H – VGI Rate-to-Host Option - How Price Affects EV Charging Demand**

**NOTE ON FORM OF CITATIONS TO THE EVIDENTIARY RECORD**

**Citations to Prepared Testimony** identified as exhibits in this case shall use the exhibit numbers assigned by the ALJs. For brevity, the prefix “SDG&E” is shortened to “SD.” Citations are as follows: Ex. [party abbreviation] [exhibit number] ([witness surname]) [page:line number(s) and/or footnote number]. *E.g.*, Ex. SD-4 (Schimka) 19:5-6 and n.2.

**Citation to the record transcript:** “[witness surname, if applicable], T. [page number(s)]: [line number(s)] (date).” *E.g.*, Mutialu, T. 1086:17-21 (May 4, 2015)

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**SAN DIEGO GAS & ELECTRIC COMPANY’S RESPONSE TO ASSIGNED COMMISSIONER AND ADMINISTRATIVE LAW JUDGE QUESTIONS**

Pursuant to the Assigned Commissioner and Administrative Law Judge’s August 5, 2015 ruling (“ruling”),<sup>1</sup> San Diego Gas & Electric Company (“SDG&E”) submits below its responses to Attachment A to the ruling. As suggested in the ruling (p. 23), SDG&E has consulted with other signatories to the settlement in preparing these responses, but these responses are submitted on behalf of SDG&E alone. The questions in the ruling’s Attachment A, and SDG&E’s responses, are set forth below, with the questions in boldface, and numbers assigned to the ruling’s bulleted items.

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<sup>1</sup> *Assigned Commissioner and Administrative Law Judge’s Ruling Regarding the Procedural Schedule for Addressing the Settlement and the SDG&E Application.* The ruling states that (p. 23):

.... the proposed settlement introduces modifications to SDG&E’s original VGI proposal that require further explanation for the Commission to have a more thorough understanding of how the proposed settlement is to be implemented. To achieve that, we have appended Attachment A to this ruling, which is a series of questions that we have about the proposed settlement. SDG&E is directed to provide responses to the questions set forth in Attachment A by August 21, 2015....

*See also*, ruling, ordering paragraph 1, p. 24.

## I. VENDOR PREQUALIFICATION AND SITE SELECTION

### A. Describe the Request for Information (RFI) process. What does SDG&E expect to achieve through the RFI?

#### 1. The Request for Information (“RFI”) process

The Settlement Agreement<sup>2</sup> modifies SDG&E’s description of its RFI process, submitted with its Application in Ex.SD-2, (Schimka) RS-8:1-16,<sup>3</sup> and further clarifies what SDG&E expects to achieve in both the RFI and Request for Proposal (“RFP”) processes. The settlement replaces the two-step screening process described in Mr. Schimka’s testimony with a more open process described in the final paragraph of Appendix A<sup>4</sup> (first sentence), which states:

.... the RFI and RFP process and vendor qualification process will remain open throughout the duration of the VGI Program to allow for and encourage participation from qualified third parties over time.

SDG&E will seek to engage the vendors in the electric vehicle service provider (“EVSP”) market in order to inform the vendor community of SDG&E’s pilot and to seek solutions and opportunities from the vendor community for consideration in a subsequent RFP (which will be issued annually, in order to keep the vendor qualification process open throughout the duration of the VGI Program). The RFP will inform vendors of the specific requirements

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<sup>2</sup> Terms used herein with initial capitalization are terms defined in the Settlement Agreement filed in this proceeding June 3, 2015, as Attachment 1 to the *Joint Motion for Adoption of Settlement Agreement*. The Settlement Agreement may also be referred to herein as the “settlement.” Unless otherwise indicated, acronyms used herein are also as defined in the Settlement Agreement. If there are any perceived inconsistencies between characterizations in this response and the Settlement Agreement, the terms and conditions set forth in the Settlement Agreement are to prevail.

<sup>3</sup> Form of citation to the evidentiary record in this proceeding is explained after the table of contents at p. iii above.

<sup>4</sup> Citations to Appendices, Sections and ¶¶ are to provisions in the Settlement Agreement. Citations to “paragraph” are to unnumbered paragraphs in the Settlement Agreement appendices. Note that this response also references an Appendix C to Mr. Schimka’s testimony (Ex. SD-2), which is different from the Appendix C in the Settlement Agreement. Citations to the Ex. SD-2 appendix will make it clear that it is a testimony reference; otherwise, all citations to an “Appendix” are to the Settlement Agreement.

necessary to qualify for selection to provide VGI equipment and services. The responses to the RFI will also inform the RFP development, which ultimately will have specific weighted scoring criteria focused on the VGI Program's technical and operational requirements. The RFI will not request pricing information, and will instead focus on relevant vendor capabilities, experience and assets. One important change from the Application in the Settlement Agreement is worth noting here – participation in the RFI process is *not* required for eligibility to participate in the RFP process. However, the RFI process does provide an opportunity for vendors to explore options, and to get them thinking about creative ways to meet program requirements. As stated in Appendix C (last paragraph, last sentence):

SDG&E will encourage discussions during the RFI process that allow vendors to explore with SDG&E the funding of innovative opportunities that may exceed the minimum implementation requirements of the VGI Program, and have the potential to enhance and improve the grid-integration outcomes of the VGI Program overall.

To illustrate the actual RFI that would be issued if the Commission approves the Settlement Agreement, Attachment G hereto is a draft version of SDG&E's RFI for the VGI Program. This draft is not intended as an actual solicitation for information at this time, and is subject to change until issued.

**2. What does SDG&E expect to achieve through the RFI process?**

*See* prior response. To further clarify what SDG&E expects to achieve through the RFI, SDG&E's original proposal expressed that the VGI Program has the potential to create opportunities for third-party EVSPs – as a pilot, it creates an opportunity to explore creative and

innovative ways to achieve the objectives of a grid-integrated future for all ratepayers.<sup>5</sup> The Settlement Agreement clarifies these objectives in Section III. ¶ O. and Appendix C. Paragraph

It is SDG&E’s aim to specify ‘what’ is required to be achieved per the objectives of the VGI Program and not ‘how’ these requirements are met. This is intended to foster innovation and enhancement to the customer’s experience.

For example, by adding the VGI Rate-to-Host option, the settlement opens the opportunity to explore creative load management solutions that directly support the VGI Program objectives (per Section III. ¶¶ A. and B.).

Also, as stated in the original proposal, and consistent with the Settlement Agreement modifications, such an approach would allow SDG&E to expand its opportunity to meet Diverse Business Enterprise (“DBE”) objectives. Section III. ¶ H. clarifies this expectation by noting:

The RFP and contract will contain a DBE subcontracting plan, which requires the bidder/contractor to list its expected annual DBE spend and list any subcontractors it plans to use to achieve its DBE goal. Bidders will be requested to provide proposals in support of SDG&E’s 40% goal.

**B. Describe the Request for Proposal (RFP) process. What is expected to be included in bids from vendors and how will vendors be evaluated to become “prequalified” to participate in the program?**

**1. The Request for Proposal (RFP) process**

Ex. SD-2 (Schimka) RS-8:17– RS-9:20, describes the RFP process,<sup>6</sup> and states (*id.*, RS-8:17-22, original emphasis);

**Pre-bid Conference** – If the VGI Pilot Program is approved, SDG&E will then hold pre-bid conferences with third parties that serve the EV customer market, such as EVSPs, vendors, contractors and subcontractors, with the goal of informing and increasing the participation in the competitive bidding process.

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<sup>5</sup> *E.g.*, Ex. SD-1 (Avery) LK-14:1-2. Please note that SDG&E witness James P. Avery adopted the testimony of Lee Krevat submitted with the Application. Ex. SD-7 (Avery) ST-4:16-ST-5:2.

<sup>6</sup> This builds off of the description of the RFI process as noted at p. 2 above and at Ex. SD-2 (Schimka) RS-8:1-16.



SDG&E proposes that contracts will be awarded to multiple bidders (to the greatest extent possible)<sup>7</sup> who meet SDG&E’s requirements set forth below.

**2. What is expected to be included in bids from vendors and how will vendors be evaluated to become “prequalified” to participate in the program?**

Ex. SD-2, (Schimka) RS-9:1-20 states (original emphasis):

**VGI RFP – Developing and Distributing the RFP for Competitive Bids** – The following summarizes SDG&E’s competitive bidding process:

- SDG&E will develop source selection criteria before the RFP is released to the marketplace.
- SDG&E Supply Management uses a centralized communication system to manage all bidder communications, and this system is used to help fairly administer bidder conferences, demonstrations, technical evaluations, and any activity associated with the RFP. All of this information will be offered equally to all suppliers under consideration.
- The RFP will be sent to known contractors in the industry, including various women-owned, minority-owned, and disabled veteran-owned business enterprises ... [DBE], as well as California Service Corps of Retired Executive (SCORE) members.
- The RFPs will be posted on a secure SDG&E website available to prospective bidders. Any questions by potential bidders about the RFP and answers to those questions will also be posted on the same website.

In addition, in line with the current SDG&E Supply Management practices, the following will be included in the VGI Pilot Program RFP:

- SDG&E Supply Management Procurement Policies and Guidelines;
- Criteria for each round of solicitation; and
- Use of SDG&E internal and department ... [DBE] resources.<sup>8</sup>

In addition, the Settlement Agreement amplifies this in Appendix C, which states:

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<sup>7</sup> “SDG&E’s proposal depends on multiple third parties offering equipment, software, operating system and network solutions. Indeed, the proposed Request for Proposal (“RFP”) process offers a chance for multiple third parties to develop innovative products, services and pricing.” Ex. SD-8 (Avery) JPA-9: 8-11.

<sup>8</sup> SDG&E has a dedicated team that focuses specifically on supplier diversity. This team strives to create a network of informed, prepared and engaged suppliers through certification, technical assistance and targeted networking. Bidders for the RFP may reach out the DBE Advisor listed therein for questions related to our Company DBE goals or support in finding CPUC certified DBE contractors or subcontractors in this industry.

SDG&E will use a multi-faceted approach to evaluating RFI responses and RFP bid proposals. All responses will be evaluated based on, but not limited to, the following criteria (not listed in order of importance):

- Total cost of ownership over the lifecycle of the EVSE<sup>9</sup> and its operating system, including all indirect and direct costs
- Responsiveness to the RFI and RFP (including response to SDG&E's Terms and Conditions included in the RFP)
- Overall product and service offering including cost, quality, warranty and capability
- Ability to meet safety, reliability, operational and VGI Program requirements
- Demonstrated ability to provide innovative functionality to enhance the VGI Program experience for the customer while meeting program objectives
- Minimum requirements met for EVSE and operating systems
- VGI Program value-added features
- Performance history
- Proposed schedule/time required to complete the required deliverables
- Prior experience in providing EVSE services as described in the RFI/RFP
- Financial strength of the service provider
- Sustainability ("green") [practices and policies]
- DBE proposals and plans to achieve stated targets<sup>10</sup>

SDG&E reserves the right to investigate the references and past performance of any bidders/vendors with respect to, among other factors, compliance with specifications, safety, completion or delivery on schedule, and lawful payment of suppliers, sub-suppliers, and workers prior to any contract award. It is anticipated that vendors meeting all the selection criteria will be qualified to participate in providing equipment and services under the VGI Program.

RFP scoring criteria and metrics, including all weighting will be objective, identified and in place prior to the issuance of the RFP, per SDG&E's standard RFP process, in order to avoid

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<sup>9</sup> "EVSE" means electric vehicle supply equipment used for charging EVs (Settlement Agreement, p. 2, citing Ex. SD-8 (Avery) JPA-4, footnote 6.

<sup>10</sup> With respect to DBE objectives, Section III.¶ H. states:

The VGI Program will be included within SDG&E's companywide Diversified Business Enterprise goal of 40%...The RFP and contract will contain a DBE subcontracting plan, which requires the bidder/contractor to list its expected annual DBE spend and list any subcontractors it plans to use to achieve its DBE goal. Bidders will be requested to provide proposals in support of SDG&E's 40% goal.

*See also*, Ex. SD-2 (Schimka) RS-9:10-13.

arbitrary scoring. Details of the scoring criteria and metrics are not shared with bidders. At the conclusion of the RFP process bidders may receive feedback regarding their proposal, if requested (*see* Appendix C, third paragraph).

**C. Through the RFP, how will SDG&E evaluate if “complementary services” are “necessary” to support the objectives of the program? How will “complementary services” impact the budget for the program and the number of sites SDG&E is able to serve?**

**1. Through the RFP, how will SDG&E evaluate if “complementary services” are “necessary” to support the objectives of the program?**

SDG&E assumes that this question refers to Section III., ¶ F. (p. 5) which states:

Third party vendors of EV supply equipment and services pre-qualified by SDG&E for the VGI Program may offer and contract with the VGI Facility site host to provide any additional or complementary services, as long as these services do not interfere with the objectives of the VGI Program.

This feature was included in the Settlement to acknowledge that vendors will be allowed to offer and provide additional services to the site host (*e.g.*, through a contract between the site host and the vendor), as long as these services do not interfere with the objectives of the VGI Program (as noted below). Furthermore, these complementary services will not be funded by the VGI Program.

The sentence that follows, in ¶ F., speaks to the evaluation criteria for determining this, and states:

Specifically, such services may not include activities, agreements, arrangements, policies or procedures that inhibit the ability of the EV driver or VGI Facility site host to respond to the pricing signal of the VGI Rate.

What would constitute a “complementary service” that would interfere with the objectives of the VGI Program? The VGI Program’s grid integration objective aims to encourage the charging of electric vehicles at VGI Facilities using the VGI Rate as a market signal during times of day when the grid would benefit from, or not be significantly impacted by,

EV loads and when the VGI prices are lowest. Conversely, the VGI Rate is designed to discourage EV charging during times of day when additional EV load would adversely impact the grid. This pricing, described in Ex. SD-3 (Fang), corresponds to system and circuit conditions, as well as the changing cost of energy throughout the day. Therefore, any “additional or complementary service” that inhibits the ability of the EV driver or VGI Facility site host to see or act on this price signal of the VGI Rate and may not allow the EV driver or VGI Facility site host to respond to the rate as intended, will not be permitted in the VGI Program.

**2. How will “complementary services” impact the budget for the program and the number of sites SDG&E is able to serve?**

Any “complementary services” will not impact the budget of the program, because, as noted above, such services will not be funded by the VGI Program. Therefore, it is not anticipated that this will impact the number of sites SDG&E will be able to serve.

**D. Will SDG&E conduct marketing and outreach to potential host site participants or is this solely the responsibility of third-parties under the Settlement?**

Yes, SDG&E plans to conduct marketing and outreach to potential host site participants and will work in concert with third-parties (vendors), some of whom may have resources deployed to engage their own VGI Program sales efforts with potential host site participants.<sup>11</sup>

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<sup>11</sup> See Section III., ¶ G. (p. 5) referencing the use of marketing materials and the shared relationship with the site host:

Competitively neutral descriptions of the VGI Rate plans will be prepared by SDG&E and shall be used by third parties; third parties shall be permitted to develop and utilize their own marketing materials at their own expense, consistent with and subject to SDG&E’s Co-branding Policy and approval process. In order to create and maintain a positive customer experience with the VGI Program, the third parties will be required to describe how they will share the initial and ongoing customer relationships with SDG&E and the VGI Facility host and EV driver.

This is important to the VGI Program for several reasons. First, as noted in Ex. SD-2 (Schimka) RS-6:16 – RS-7:3 (original emphasis):

**Customer Engagement** – SDG&E has established customer relations and channels of communication regarding EVs with service territory agencies, municipalities, trade associations and planning councils; SDG&E also has working relationships with SDG&E’s workplace and MuD customers. SDG&E has regular workshops, outreach and assigned account relationships with account executives for these customers. SDG&E also works with Smart City San Diego, CleanTech San Diego, and other general education and outreach venues.

As such, SDG&E would be remiss to not make these stakeholders, customers and communities aware of the VGI Program opportunity.

Second, as SDG&E witness James P. Avery testified, T. 33:19-26; 65:1-24 (April 27, 2015), SDG&E’s External Affairs and Community Relations organizations work with a variety of Community Based Organizations (“CBOs”) during the course of SDG&E’s everyday business. SDG&E and these local CBOs have a vital “marketing and education” role in fulfilling the Section III., ¶ I. undertaking to install at least 10% of the VGI Facilities in Disadvantaged Communities.

Finally, it is very likely that those who qualify as authorized vendors to implement the VGI Program, may not have marketing sales staff and related resources, because these resources are not required to become a qualified vendor for the program. As such, SDG&E can play a major role in referring potential VGI Program host site candidates to SDG&E’s VGI Program webpage, where a list and link to all the qualified vendors can be found.

**E. Will the site selection criteria articulated in the prepared direct testimony of Randy Schimka at RS-7 (Exhibit SDG&E-02) still apply under the settlement? Please specify the process SDG&E will use to evaluate and choose sites to participate in the program.**

**1. Will the site selection criteria articulated in the prepared direct testimony of Randy Schimka at RS-7 (Exhibit SDG&E-02) still apply under the settlement?**

Yes, the site selection criteria articulated in the cited Randy Schimka testimony (Ex. SD-2, RS-7:4-18) still apply:

Site Selection Criteria – Once a workplace or MuD host customer expresses an “indication of interest” for VGI Pilot Program siting, SDG&E will evaluate and prioritize the interested site for VGI installation in terms of the following criteria:

- Date of indicated interest (first-in-line priority);
- Current and expected volume of EV drivers;
- Number of VGI installations desired;
- Type of VGI installation (workplace, MuD);
- Nearby transformer available capacity;
- Distance between transformer and new service point;
- Site conditions related to construction feasibility (i.e., trenching surface, EV Supply Equipment (EVSE) mounting surface, condition of facility);
- Land and property ownership;
- If leasing, term and conditions of lease; and
- Existing /available Americans with Disabilities Act (ADA) accessible parking.

**2. The process SDG&E will use to evaluate and choose sites to participate in the program**

As depicted in Attachment C flow chart, Site Host Enrollment Process, it is expected that interested potential host sites will be referred to SDG&E by a number of outreach channels. SDG&E expects to achieve host site customer awareness of VGI Program services through a combination of education and outreach efforts by SDG&E’s staff, EVSP vendors, CBOs, third parties, trade organizations, and more. The VGI Program Advisory Council (“PAC”) will play a key role in providing education and outreach recommendations. Described below and as depicted in Attachment C are the steps necessary to screen and prioritize potential VGI sites,

based on the Settlement Agreement and the process it implies for the customer acquisition process:

- a. Potential site host customer candidate expresses interest in the program (*e.g.*, approaches SDG&E directly, through a qualified vendor, through an SDG&E relationship, through a CBO, through a third party, and more) at which time the candidate is contacted by SDG&E to commence the screening and enrollment process. Information is provided to the potential site host explaining the program participation criteria, steps in the enrollment process, contractual obligations, and operational terms and conditions.
- b. As part of the screening process, the candidate host customer will be asked to provide information that reflects some of the screening criteria categories noted above. For example, these will include: current and expected volume of EV drivers, number of EVSE installations desired, type of VGI installation site (workplace or MuD), land and property ownership, the host site decision-maker, relevant terms and conditions of a lease (if applicable), existing and available ADA accessible parking, and if granting an easement to SDG&E for the VGI Facility installation will be acceptable.
- c. Additional site screening activities will include site visits by SDG&E to gather some of the information (criteria) noted above. For example, these will include: nearby transformer available capacity, distance between transformer and new service point, and site conditions related to construction feasibility (*i.e.*, trenching surface, EVSE mounting surface, the condition of site).

- d. Candidate site host customer eligibility is determined and prioritized based on the information gathered in the screening process. For example, hosts that will not allow for an easement will be screened out; sites that have a high number of current EV drivers will be given a higher priority than those that do not have a high volume now but expect more EV drivers in the near future. As clarified in Section III., ¶ N. (pp. 7-8): “the Settling Parties acknowledge that some sites may be rejected due to physical limitations, unusually large construction costs and/or level of difficulty.” Also, the settlement acknowledges that along with other potential programmatic changes as advised by the PAC, site priorities may be changed based on the need for increased representation in the pilot by circuit type, Disadvantaged Community participation, equitable distribution of VGI Facilities by region, and more (Appendix A, paragraph four):

In line with input from the VGI PAC, SDG&E will make programmatic changes as needed during the course of the VGI Program (e.g., the VGI Rate - as originally proposed, or VGI host site prioritization for an equitable deployment of VGI Facilities). Programmatic changes will be made on an on-going basis, running concurrent with the VGI Program, so as not to impact its overall progress.

- e. One additional and relevant screening dimension was also recognized by the Settling Parties. As clarified in the Section III., ¶ N. (pp. 7-8):

Unless directed otherwise by the Commission...SDG&E will not sign up any additional sites as of the end of the 4th year of VGI Program implementation, except for the limited exception ... (at) sites with documented plans for new construction or major tenant improvements. For such sites the VGI Facility installation period may extend beyond the 5th year of the VGI Program proposed installation period if the site host commitment is made by the end of the 4th year of VGI Program implementation.



The Settlement Agreement included this to address concerns about the lead times unique to new construction and major tenant improvement projects. For example, in order for a VGI Facility to be considered for a MuD or workplace site new construction project, it must be considered during the design phase of a construction project, which may be at least one year or more in advance of commencing construction. Given this timeline, new construction sites signing up for the program in year four will likely be unable to complete the construction of the VGI Facility by the end of year five, as originally proposed.

**F. What criteria will be used to choose sites in disadvantaged communities?**

As noted in Section III., ¶ I. (p. 6), VGI Facilities will be installed in Disadvantaged Communities as identified by Cal EPA's EnviroScreen tool developed pursuant to SB 535 (de León, 2013).<sup>12</sup> SDG&E will work with CBOs to assist with education and outreach, as well as pre-qualifying and signing-up site hosts for participation in the VGI Program. The screening process described in the answer to Question I. E. above will apply, and priorities will be set within the Disadvantaged Community sub-segment of targeted sites. It is expected that further screening details will be refined within the PAC, once established. And, ¶ I. further states:

SDG&E will complement and coordinate with federal, state and locally funded programs, such as those being developed by the Air Resources Board pursuant to SB 1275, that are expected to grow the demand for EVs in Disadvantaged Communities (*e.g.*, EV car-sharing services)....

Screening criteria will include considerations for those Disadvantaged Communities contemplating the inclusion of EV car-sharing services (*e.g.*, within or adjacent to Disadvantaged Communities).

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<sup>12</sup> D.15-01-051 (p. 174, conclusion of law 21) recently adopted version 2.0 this screening tool to identify the environmental justice reservations specified in SB 43.

**G. How will third party selection of sites affect the statistical significance of the pilot in determining impact of the VGI rate on the 48 prototypical circuits within the SDG&E territory?**

It is important to note that third parties will not select sites for VGI Facility installations, as implied by the question. Instead third parties will have the opportunity to market to site hosts and then identify them to SDG&E as those interested in being considered for hosting a VGI Facility, which SDG&E will screen and evaluate for host site eligibility.<sup>13</sup>

As discussed in Ex. SD-7 (Schimka) ST-46:1-13 and in Appendix A to that testimony, the size of the pilot in terms of volume of VGI Facilities (*i.e.*, 550) is sufficient to allow for reasonably strong statistical representation of SDG&E's distribution circuits serving customer site host locations.<sup>14</sup> If distribution circuit type representation needs to be adjusted, then the priorities for candidate host sites may be adjusted in consultation with the PAC. As stated above in the answer to Question I. E., and as the Settlement Agreement (Appendix A, paragraph four) acknowledges, along with other potential programmatic changes as advised by the PAC, site priorities may change based on the need for increased representation in the pilot by circuit type:

In line with input from the VGI PAC, SDG&E will make programmatic changes as needed during the course of the VGI Program (e.g., VGI Rate - as originally proposed, or with VGI host site prioritization for an equitable deployment of VGI Facilities).

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<sup>13</sup> Section III., ¶¶ G. (third party marketing); Ex. SD-2 (Schimka) RS-7:4-18 (SDG&E site selection and criteria).

<sup>14</sup> Recall that the VGI Rate as seen by the customer reflects specific local circuit conditions to incentivize charging at times best suited to local circuit operating conditions. Ex. SD-3 (Fang) CF-15:8 - CF-19:8.

**H. Please detail the RFI, RFP, site selection, and tariff enrollment processes (per the Application and as modified by the Settlement) in a process diagram. Identify each entity and action necessary to implement the VGI Program from the RFI to vehicle charging and customer billing. Cite to specific sections or parts in the Application or Settlement for clarity.**

Please *see* Attachments A through F for the VGI Program process diagram requested.

Attachment A is a Summary of Processes necessary for VGI Implementation as shown in more detail in Attachments B through F, which are summarized as follow:.

Attachment B – VGI Deployment Plan depicts those activities or process development necessary in order to launch the VGI Pilot Program to potential site hosts and EV drivers. This does not include actual enrollment, design, construction or operational activities found in Attachments C through F.

Attachment C – Site Host Enrollment Process depicts those activities or processes related to recruitment and enrollment of site hosts. This process begins at site host interest and ends at signing of contract and easement documents. It includes selection of EVSP Vendor and billing rate option, preliminary site visits, preliminary cost estimates and preliminary site layouts. This process must be completed prior to moving forward to design and installation identified in Attachment D.

Attachment D – Site Host VGI Facility Installation Process depicts those activities or processes related to design and installation of VGI Facilities. This includes the Planning and Design sub-process consisting of environmental reviews, load and fusing studies, facility design, permits, estimates and assembly of a construction package. Also included is Construction and Reconciliation sub processes consisting of installation of supporting infrastructure and the installation, testing of equipment and commissioning of the VGI Facilities. This process must be completed prior to moving forward to operational processes for either the Rate-to-Host or Rate-to-EV Driver options as described in Attachments E & F.

Attachment E – Rate-to-Driver Operations and Attachment F- Rate to Host Operations depicts the data flow of operations necessary to support VGI Operations.

**I. What issues need to be considered to determine the proposed site host participation payment?**

This question references Section III., ¶ D. (pp. 4-5), which states:

SDG&E will assess a VGI Program participation payment on VGI Facility Site Hosts that elect to participate in the VGI Program. The participation payment will be waived for VGI Facilities located in Disadvantaged Communities. SDG&E shall file for approval of the proposed participation payment by way of a Tier 2 advice letter, subject to protest by any party, after consulting with the VGI Program Advisory Council (as described below).

In arriving at this provision, the Settling Parties understood that a “participation payment” should be sufficient to garner host customer commitment to the VGI Program and its objectives, yet not be so large as to pose a barrier to limit host customers from enrolling in the VGI Program. The PAC consultation process described in the Settlement Agreement should reflect the views of diverse stakeholders sensitive to both poles of the proposition. Moreover, by agreeing to the PAC process, the Settling Parties placed resolution of a difficult issue in a venue that will have time and incentive to reach an agreement subject to Commission review and approval.<sup>15</sup>

**J. How does SDG&E propose that the participation payment be determined?**

Under the Settlement Agreement, SDG&E will not unilaterally propose the amount of the participation payment. Per Section III., ¶ D, the participation payment will be developed in consultation with the PAC.<sup>16</sup>

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<sup>15</sup> See, Section III., ¶ D.

<sup>16</sup> Section III., ¶ D, states:

The Settling Parties discussed the issues that should be considered in developing a “participation payment.” This discussion is reflected in the following explanation in the Settlement Agreement (Section III., ¶ D, page 4-5):

In developing the proposed participation payment, factors that will be considered include, but are not limited, to the following: customer commitment, avoiding adverse impacts to deployment, total VGI Facility cost and customer segment.

The Settling Parties also discussed other potential factors, such as site engineering design and permitting costs,<sup>17</sup> facility utilization, and costs associated with creating an equitable deployment of VGI Facilities. Once the PAC is formed, it is likely that the “participation payment” will likely be one of the first topics addressed. The Settling Parties felt that an open, deliberative process subject to Commission resolution afforded the opportunity to fairly vet this settlement provision and to consider ideas that may not have been identified during settlement negotiations.

## **II. INSTALLATION, OPERATIONS, MAINTENANCE AND OWNERSHIP OF CHARGING INFRASTRUCTURE**

### **A. Does the Settlement maintain SDG&E’s proposal to own and rate base the charging infrastructure? If so, how is ownership of this infrastructure imperative to the success of the program?**

Yes. SDG&E addressed this question in its *Reply Comments ... on the Joint Motion to Adopt Settlement Agreement* filed July 20, 2015 (“Reply Comments”) (pp. 34-36); the settlement, including the VGI Rate-to-Host option, still requires utility ownership. As referenced in its Reply Comments, SDG&E’s logic regarding ownership under the VGI Rate-to-Host option

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SDG&E shall file for approval of the proposed participation payment by way of a Tier 2 advice letter, subject to protest by any party, after consulting with the VGI Program Advisory Council (as described below [in Appendix A]).

<sup>17</sup> For example, see the cost of Engineering Design and Permitting as described in Ex. SD-2 (Schimka) RS-10:21 - RS-11:10, RS-14:5-6.

remains the same as those under the VGI Rate-to-EV Driver option in the original proposal: utility ownership is necessary to ensure that all ratepayers, who are funding the VGI Program, are protected; and ownership with full utility responsibility for deployment, maintenance and operation increases the assurance that the assets remain used and useful over the life of the program and to realize the net benefits of the program to all ratepayers (as stated in Ex. SD-8 (Avery) JPA-4:9 - JPA-10:24). As such, since SDG&E is fully accountable to its ratepayers for these benefits, full facility ownership, end-to-end is relevant and necessary. Ownership by the regulated utility ensures that the program can repair or replace malfunctioning equipment in a timely manner regardless of the operational or financial health of the vendor or the competing capital priorities of the site host.

Conversely, without end-to-end ownership of the VGI Facility (for example, the host owning just the EVSE), SDG&E, under the Commission's oversight, cannot be held fully responsible for achieving the net benefits proposed, should the host fail to keep the EVSE in continuous operation. Also, per Section III., ¶ M., because the VGI Rate-to-EV Driver option will use the meter embedded in the EVSE or provided by the vendor as the revenue meter, this meter is the responsibility of SDG&E, under Commission's oversight, and not that of the California Division of Measurement Standards.<sup>18</sup> By SDG&E retaining ownership, and given the Commission's oversight responsibilities over SDG&E, the Commission can intervene at any point in time to create additional assurances that the net benefits can be achieved.

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<sup>18</sup> Please see <http://www.cdfa.ca.gov/dms/>, Enforcement of California weights and measures laws and regulations is the responsibility of the Division of Measurement Standards ("DMS"). The Division's activities are designed to, among other responsibilities, ensure the accuracy of commercial weighing and measuring devices.

By maintaining the foregoing rationale supporting utility ownership, SDG&E is not representing that all Settling Parties accept all or part of the rationale. Prior to settlement, some Settling Parties opposed utility ownership, and, by executing the Settlement Agreement, the Commission should not presume that all Settling Parties now support the foregoing rationale. As the Commission has recognized, a settlement is a compromise and a package.<sup>19</sup> That means that a given settling party may accept a concept it opposes to obtain the benefits of the settlement.

**B. How will SDG&E mitigate interruptions or terminations in EVSP vendor operations for EVSPs providing services to a site host under the VGI Program (e.g. if the EVSP changes business or no longer conducts business in California)?**

The vendor's contract with SDG&E to provide VGI Program services will describe the responsibilities of the contracting parties, including actions that will be taken should a vendor be unable to fulfill its contractual obligations. SDG&E expects that its contracts with vendors of equipment and services will contain provisions similar to the following standard provisions in SDG&E supply management contracts ("Agreement" in the following example refers to an equipment or service agreement, "Supplier" is a vendor, and "Company" is SDG&E):

1.1 TERMINATION

1.1. For Supplier's Default: Company may, by written notice to Supplier, terminate all or any part hereof if Supplier (1) fails to make timely delivery of the Equipment [and/or Services]; (2) abandons the work called for hereunder; (3) becomes bankrupt or insolvent, or shall assign this Agreement, or sublet any part thereof, without the written authorization of Company, or (3) violates any of material provisions of this Agreement; or (4) fails to provide any bond or insurance required by this Agreement.

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<sup>19</sup> E.g., D.11-05-018 notes (p. 16):

In assessing settlements we consider individual settlement provisions but, in light of strong public policy favoring settlements, we do not base our conclusion on whether any single provision is the optimal result. Rather, we determine whether the settlement as a whole produces a just and reasonable outcome.

1.2 Remedies: If Company terminates all or any part hereof for Supplier's default:

1.3 Company may procure, upon such terms and in such manner as Company deems appropriate, Equipment [and/or Services] similar to those specified herein, and Supplier shall be liable to Company for all direct loss, damages, and excess cost in procuring such similar Equipment; provided, that Supplier shall continue performance hereunder to the extent not terminated under the provisions of this Article.

1.4 Company may require Supplier to transfer title and deliver to Company any completed Equipment, and such partially completed Equipment and any materials, parts, tools, dies, fixtures, jigs, patterns, plans, drawings, information and intellectual property of every nature, and contract rights as Supplier has specifically produced or specifically acquired for the performance hereof or such part hereof as has been terminated (collectively, the "Specifically Acquired Materials"). Payment for completed Equipment delivered to and accepted by Company shall be at the contract price. Payment for Specifically Acquired Materials delivered to and accepted by Company shall be in an amount agreed upon by Company and Supplier, unless the Specifically Acquired Materials are included in the contract price.

1.5 For Company's Convenience: It is expressly agreed that Company may terminate all or part of this Agreement at any time and from time to time for its sole convenience. Upon termination pursuant to this Article, an equitable adjustment shall be made by agreement between Company and Supplier for the reasonable cost to Supplier of the work performed prior to termination. This equitable adjustment shall include amounts compensating Supplier for its actual cost of labor and materials, and for reasonable overhead and profit. However, no profit shall be allowed if it is apparent that Supplier would have incurred a loss had the work been completed as originally specified. In no event shall the equitable adjustment include an amount for anticipated profit on unperformed work. Termination charges will not exceed the amount specified in ... [the Agreement]. Company shall have the right to review and verify by audit termination charges claimed by Supplier.

Should termination of a vendor contract occur, SDG&E will likely bid out the transfer of the operational responsibilities to one or more of the current qualified vendors of the VGI Program, an action which the foregoing contract provisions expressly facilitates. One of the benefits of SDG&E owning all the VGI assets end-to-end, as SDG&E's testimony explains,<sup>20</sup>

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<sup>20</sup> Ex. SD-8 (Avery) JPA-4:9 - JPA-5:24.



that in these situations “SDG&E ownership of assets ensures that they will be maintained and operational in the event the equipment provider is no longer able to do so, such as in the case of poor maintenance, equipment and operating system failure, or bankruptcy.” SDG&E’s testimony also states that should an entity other than SDG&E own the VGI assets, these assets could be subject to liens, court proceedings and disputes between stakeholders – there would be little recourse, and SDG&E would be less able to ensure that these assets remain used and useful, to the benefit of all its ratepayers. Ex. SD-8 (Avery) JPA-5:10-17.

Additionally, minimum requirements may be identified as a result of the RFI process to mitigate interruptions or terminations in EVSP vendor operations or services, such as requiring implementation of certain technology interoperability standards (*e.g.*, Open Charge Point Protocol,<sup>21</sup> OpenADR,<sup>22</sup> GreenButton,<sup>23</sup> ISO/IEC 15118 protocol,<sup>24</sup> and/or IEEE Smart Energy Profile 2.0<sup>25</sup>) or requiring certain contractual protections (*e.g.*, posting a bond). Interoperability standards may help mitigate interruptions or terminations in vendor operations or service, but they do not ensure that equipment can be operated by another vendor implementing the same standards.

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<sup>21</sup> See: [https://en.wikipedia.org/wiki/Open\\_Charge\\_Point\\_Protocol](https://en.wikipedia.org/wiki/Open_Charge_Point_Protocol)

<sup>22</sup> See: [http://www.openadr.org/index.php?option=com\\_content&view=article&id=84:openadr-alliance-releases-2-0b-profile-specification&catid=21:press-releases&Itemid=121](http://www.openadr.org/index.php?option=com_content&view=article&id=84:openadr-alliance-releases-2-0b-profile-specification&catid=21:press-releases&Itemid=121)

<sup>23</sup> See: <http://www.greenbuttondata.org/learn/>

<sup>24</sup> See: [http://www.iso.org/iso/home/store/catalogue\\_tc/catalogue\\_detail.htm?csnumber=69113](http://www.iso.org/iso/home/store/catalogue_tc/catalogue_detail.htm?csnumber=69113)

<sup>25</sup> See: <https://standards.ieee.org/findstds/standard/2030.5-2013.html>

### III. BILLING AND RATES

**A. What are the minimum requirements for the EVSE and VGI operating systems? If these are not yet determined, how will SDG&E determine them? Please refer to specific national or international standards where available.**

The minimum requirements of the VGI operating system are described in Ex. SD-2 (Schimka) RS-19:5-22, in terms of the service level agreement (“SLA”) that will be between SDG&E and a third party vendor in fulfilling these operating requirements:

This will include, and will not be limited to, operational requirement responsibilities of the third party to implement the VGI operating system. Examples of these requirements include:

- System operational specifications
- Individual charging equipment repair time specifications
- Billing data transmission intervals
- Billing data reconciliation specifications
- System energy usage resolution specifications
- System per charging session billing specifications for users
- System web and phone apps specifications:
  - Maximum price willing to pay
  - Chosen hours
  - Planned departure time
  - kWh needed

Quality assurance specifications will ensure that the system installed is fully operational, within agreed-upon performance tolerances (*e.g.*, accuracy, reliability, duration of performance). Additional conditions will pertain to monitoring equipment for failure, repairing and replacing failed or damaged equipment, and related maintenance criteria.

An illustrative example modeled after SDG&E’s VGI pilot with its employees<sup>26</sup> is provided in Appendix C of Mr. Schimka’s testimony (Ex. SD-2 (Schimka) Appendix C). A simplified summary of Ex. SD-2, Appendix C was provided in Ex. SD-7 (Schimka) ST-42:7-13,

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<sup>26</sup> Ex. SD-2 (Schimka) RS-5:15-19 references SDG&E’s VGI pilot with its employees; Ex. SD-2 (Schimka) RS-18:8-10 with reference to Appendix C (footnote 7), as a high-level VGI system description to provide a “basic visual illustration of a VGI Facility.”

where Mr. Schimka summarizes the operating system minimum requirements to implement the VGI Rate:

... items encompassed within cloud-based components [reference made to a Figure characterizing the entire VGI Facility]...that provide the grid-integrated managed charging and control functions necessary to implement the VGI rate, such as:

- Receive the day-ahead pricing
- Manage the charging session to the customer price and charging requirements
- Collect price and usage data
- Send these data to SDG&E to complete the billing process

Regarding the second and third parts of this question, the requirements, as clarified in Section III., ¶ O. (p. 8):

It is SDG&E's aim to specify "what" is required to be achieved per the objectives of the VGI Program and not "how" these requirements are met. This is intended to foster innovation and enhancement to the customer's experience.

Appendix C contains a detailed exposition on the RFI and RFP process as clarified in the Settlement Agreement, including a non-exclusive list of criteria to be used in evaluating RFI responses and RFP bid proposals.

With respect to the question's request for "specific national or international standards where available" Appendix C specifies that:

Construction, installation and maintenance contractors will have Electric Vehicle Infrastructure Training Program (EVITP) certification, and SDG&E will require that all construction, installation and maintenance of VGI Facilities that is not performed by employees of SDG&E shall be performed by contractors signatory to the IBEW who hold a valid C-10 contractor's license, as defined in the governing labor agreement between SDG&E and the IBEW.

As for national or international standards, the National Electric and Safety Code and Commission General Order 95 govern the installation where applicable. Additionally, minimum interoperability requirements may be identified as part of the RFI process and defined in the RFP requirements to facilitate interface integration between multiple vendor systems and SDG&E

systems, such as requiring implementation of certain technology interoperability standards, including limited portions or modifications of such standards (*e.g.*, Open Charge Point Protocol, OpenADR, GreenButton, ISO/IEC 15118 protocol, IEEE Smart Energy Profile 2.0, and/or vendor defined interfaces).

SDG&E is asking vendors in this nascent industry to bring their innovative ideas and technology to the VGI Program. Therefore it's too soon to be overly prescriptive with program requirements. SDG&E is committed to ensuring that the equipment and services procured for the VGI Program operate safely and reliably. The RFI process will help to inform and identify interoperability solutions and standards to ensure that the VGI Facilities will be used and useful, and will operate safely.

**B. Will availing the VGI Rate-to-Host option increase revenue requirements for the program? If so, how?**

No, the VGI Rate-to-Host option will not increase the revenue requirements for the program. The VGI Program will not exceed the program expenditure cap of \$103 million.<sup>27</sup> Per the Settlement, adding the VGI Rate-to-Host option allows SDG&E to explore additional opportunities to meet the VGI Program objectives through the Load Management Plans<sup>28</sup> required under this option. This approach fosters innovation between the site host and vendor, and as stated in the last paragraph of Appendix C, encourages actions that “enhance and improve the grid-integration outcomes of the VGI Program.” Overall, it is expected that as VGI

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<sup>27</sup> At hearings, SDG&E witness Randy Schimka clarified that SDG&E is requesting authority to build up to the 550 charging stations, subject to the \$103 million cap on spending authority requested in the application (at Ex. SD-4 (Atun) JBA-4:2-7 and Table JBA-5, which shows total capital and O&M expenditures of \$102,753). SDG&E will not build over the 550 charging stations if the spending cap is not reached with that rollout level. Schimka, T. 534:5-23 (April 29, 2015).

<sup>28</sup> Load Management Plan, as used herein, refers to the “load management plan” and “load management tactics” referred to in the Settlement Agreement, Section III., ¶ B and Appendix B.

equipment is installed (under the VGI Rate-to-EV Driver or VGI Rate-to-Host options), the costs per VGI Facility installation should average out – some will be higher cost than estimated and some will be lower cost. However, if actual costs per VGI Facility are trending above the average cost estimates, this may result in SDG&E installing fewer VGI Facilities in order to stay within the program cap of \$103 million.

#### **IV. PROGRAM ADVISORY COUNCIL (PAC)**

**A. Who determines entry into the PAC? How will SDG&E mitigate conflicts of interest in decision-making if market participants are allowed to participate in procurement decisions, particularly if it is intended to operate “in a manner similar to the Procurement Review Group”? How will SDG&E allow for entry and feedback from new market participants and ensure that the size does not become unwieldy?**

**1. Who determines entry into the PAC?**

SDG&E will determine entry into the PAC, as stated in Section III. ¶ K (pp. 6-7) with details regarding the roles, responsibilities and frequency of meetings described in Appendix A (“Role, Responsibilities of the VGI Program Advisory Council”): “SDG&E will solicit the participation of a broad and diverse stakeholder advisory group (the ‘VGI Program Advisory Council’...) in planning and implementing the VGI Program....” SDG&E recognizes that the VGI Program will benefit greatly from input from a variety of experts and perspectives who also have a stake in the outcome of this pilot program, and SDG&E would be remiss if it did not take advantage of this expertise, including that of the Commission’s Energy Division. Appendix A (first paragraph, fourth sentence) states that “the PAC does not have formal decision-making authority”; SDG&E has the responsibility for program decision-making. However, Appendix A provides that the PAC is responsible for making recommendations and/or it will “provide key information and materials to the VGI Program Managers at SDG&E” to inform the decision-

making. Appendix A states that SDG&E will organize and chair PAC meetings and clarifies that (*id.*, paragraph two):

...the key role and purpose of the PAC will be to provide input to SDG&E for programmatic changes as needed during the course of the VGI Program...to improve the performance of the VGI Program, in line with the Guiding Principles [of the Settlement Agreement] and consistent with any applicable Commission orders, tariff rules, regulations, etc.”

**2. How will SDG&E mitigate conflicts of interest in decision-making if market participants are allowed to participate in procurement decisions, particularly if it is intended to operate “in a manner similar to the Procurement Review Group”?**

SDG&E will mitigate conflicts of interest in decision-making if market participants are allowed to participate in procurement decisions with the ultimate decision-making authority the Settlement Agreement vests in SDG&E over the VGI Program (subject to Commission oversight and, where appropriate, approval). In such program decisions, conflicts of interest will be acknowledged in weighing the input from the various parties. The PAC will not participate in the normal business operations or procurement (and the decision making therein).

SDG&E will not violate the protocols of the RFI and RFP processes in its dealings with PAC members who may also be actual or potential EVSE market participants. That is, it will not provide information or notice to such PAC members outside the RFI/RFP processes, or otherwise give such PAC members an advantage in VGI Program procurement.

**3. How will SDG&E allow for entry and feedback from new market participants and ensure that the size does not become unwieldy?**

Regarding the management of the growth of the PAC membership, Appendix A states that there will be one representative per member organization (item 1, under “responsibilities”), which will help manage the size of the PAC. Membership in the PAC will remain open to allow for new stakeholders to participate.

**B. How often will the PAC meet? Who determines the agenda for PAC meetings?**

Appendix A (“Roles, Responsibilities of the VGI Program Advisory Council”) spells out the frequency of meetings (closing paragraph summarizing the responsibilities of the PAC members, Item 1):

Attend all VGI Program Advisory Council meetings, planned to take place at least twice per year over the four-year VGI Program period (however, year one will include additional organizational and planning meetings to launch the PAC, as appropriate).

Regarding the agenda for PAC meetings, SDG&E will determine the agenda, organize and chair the PAC meetings. However, members of the PAC play a key role in advising SDG&E on a number of program implementation matters, including the agenda. In Appendix A, the last sentence of the first paragraph states that the PAC will make recommendations and/or provide key information and materials “to the VGI Program Managers at SDG&E, who will organize and chair the PAC meetings.”

**C. What is the process for the PAC to make recommendations for program implementation? What is the process for the CPUC to consider and/or approve recommendations made by the PAC?**

**1. The PAC process for making recommendations**

The process for the PAC to make recommendations for program implementation is described in Appendix A. Although any member of the PAC can make recommendations to SDG&E regarding program implementation for consideration by the entire PAC, the Settling Parties thoughtfully included additional features in the Settlement Agreement to help to inform the recommendation-making process to help advise SDG&E in making its VGI Program implementation decisions:

1) The creation of **Guiding Principles** (Section III., pp. 3-4) – a tool to ensure that recommendations made are consistent with the objectives of the VGI Program;

2) **Supplemental Data Collection Objectives and Requirements** (Appendix B) driven by the anticipated decision-making needs of VGI Program implementation and program assessments,<sup>29</sup> and

3) Defining the **Roles and Responsibilities of the PAC** (Appendix A), which also describes the process for making recommendations.

## 2. Role of the Guiding Principles

With respect to the Guiding Principles (Section III, pp. 3-4), not only were they foundational for the development of the Settlement Agreement, they were also positioned as a forward-looking framework for making recommendations to SDG&E in future VGI Program implementation. To this end, Appendix A, second paragraph states:

Overall, the key role and purpose of the PAC will be to provide input to SDG&E for programmatic changes as needed during the course of the VGI Program (*e.g.*, VGI Rate – as originally proposed, or with VGI host site prioritization for an equitable deployment of VGI Facilities), to improve the performance of the VGI Program, in line with the Guiding Principles and consistent with any applicable Commission orders, tariff rules, regulations, etc. SDG&E will give careful consideration to all programmatic modifications recommended by the PAC at their meetings and implement such changes deemed feasible and necessary.

Indeed, the Settlement Agreement’s introduction to the Guiding Principles, and the principles themselves (Section III, pp. 3-4) states (emphasis added):

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<sup>29</sup> As noted in the first paragraph of Appendix B:

Data collection and VGI 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 Settlement Agreement’s modifications to SDG&E’s VGI Program proposal. Data collection identified in this testimony specifically relate to measuring VGI 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).



The Settling Parties have developed the following Guiding Principles, which *informed the proposed modifications* [to SDG&E’s application] and *should guide VGI Program implementation*:

1. Must support the Governor’s and California state goals to:<sup>30</sup>
  - a. Achieve installation of grid-integrated infrastructure to support 1 million zero emission vehicles by 2020;
  - b. Accelerate the adoption of 1.5 million zero emission vehicles by 2025;
  - c. Support clean air and climate change objectives.
2. Must be structured to provide net benefits to all ratepayers.
3. Must protect ratepayers by ensuring that assets continue to be used and useful.
4. Must provide EV drivers the opportunity to maximize fuel cost savings relative to conventional transportation fuels.
5. Must provide equitable deployment of services to all ratepayers, including statutory requirements and directives to serve disadvantaged communities and increase access to clean transportation.<sup>31</sup>
6. Must provide customer choice.
7. Must support broad-based investment in electric vehicle charging equipment and services by public, private and utility entities and avoid anticompetitive impacts on the markets for EV charging equipment and related services.
8. Must incorporate learning-by-doing and make adjustments to the VGI Pilot Program as needed.
9. Must provide data to help inform State policy.
10. Must utilize rate design and load management practices to facilitate the integration of renewable energy resources, as well as deliver other grid benefits.

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<sup>30</sup> Please *see* links [HTTP://GOV.CA.GOV/NEWS.PHP?ID=17472](http://gov.ca.gov/news.php?id=17472), third ordering paragraph, first bullet, and the sixth bullet that orders that “electric vehicle charging will be integrated into the electricity grid.”; and, [http://opr.ca.gov/docs/Governor's\\_Office\\_ZEV\\_Action\\_Plan\\_\(02-13\).pdf](http://opr.ca.gov/docs/Governor's_Office_ZEV_Action_Plan_(02-13).pdf).

<sup>31</sup> *See*, SB 535 (De León, 2013), SB 1275 (De León, 2014).

11. Must align with SDG&E's companywide Diversified Business Enterprise ("DBE") goal of 40% and request subcontractors to provide proposals in support of the 40% goal.

In summary, recommendations from PAC members – and SDG&E's program implementation - must be consistent with these Guiding Principles.

### **3. PAC role in Data Collection Objectives and Requirements**

The Settlement Agreement specifically provides for the PAC's recommendations to be fact based, and driven by actual program performance data and analysis. As such, items 2 and 3 in the Appendix A summary of PAC responsibilities state:

2. Examine the VGI Program data and findings presented by SDG&E and the PAC members in order to make informed recommendations.
3. Timely vet recommendations for VGI Program modifications.

Recognizing the importance of making "informed recommendations," Appendix B, first paragraph, further emphasizes the role of data collection and a fact-based process:

Data collection and VGI 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 Settlement Agreement's modifications to SDG&E's VGI Program proposal.

Finally, the closing paragraph of Appendix B also includes the option for the PAC to request additional data collection (based on stated objectives for these data) to help to make informed recommendations:

The VGI PAC will have the flexibility to determine if additional VGI 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.

### **4. Roles and Responsibilities of the PAC**

Appendix A specifies PAC's the role and responsibilities:

The PAC will make recommendations and/or provide key information and materials to the VGI Program Managers at SDG&E...Overall, the key role and purpose of the PAC will be to provide input to SDG&E for programmatic changes as needed during the course of the VGI Program (e.g., VGI Rate – as originally proposed, or with VGI host site prioritization for an equitable deployment of VGI Facilities), to improve the performance of the VGI Program, in line with the Guiding Principles and consistent with any applicable Commission orders, tariff rules, regulations, etc. SDG&E will give careful consideration to all programmatic modifications recommended by the PAC at their meetings and implement such changes deemed feasible and necessary. Programmatic changes will be made on an on-going basis, running concurrent with the VGI Program, so as not to impact its overall progress.

Also, regarding the PAC's role in requesting additional data and information, Appendix A states (third paragraph): "The VGI PAC will employ a process for examining the data described in Appendix B to determine if a program modification should be implemented to improve the performance of the VGI Program."

**5. What is the process for the CPUC to consider and/or approve recommendations made by the PAC?**

As noted above, within the PAC process, recommendations are made to SDG&E for PAC discussion and for SDG&E's consideration – the PAC serves in an advisory capacity. As stated in the first paragraph of Appendix A, "The PAC does not have formal decision-making authority." Although any member of the PAC is free to discuss recommendations with the Commission at any time, any required formal requests regarding changes to program implementation will be made to the Commission through SDG&E. The Commission advice letter process provides for comments and protests to advice letters, wherein PAC members may express their views to the Commission. PAC members may also contact the Commission's Energy Division with comments or complaints.

## V. MONITORING AND EVALUATION

### A. Under a VGI rate-to host option, what is the process for evaluating the adequacy of the host's load management plan? How will SDG&E assess the impact of EV charging on distribution circuits if the site host is aggregating and managing load through, potentially, multiple strategies?

#### 1. Evaluating the Adequacy of the Host's Load Management Plan

The VGI Rate-to-Host option requires the site host to submit a Load Management Plan,<sup>32</sup> per Section III., ¶ B. (p. 4), “the site host, or its selected vendor, will be required to submit to SDG&E the load management tactics it will implement at this VGI Facility....” Per Section III., ¶ F (p. 5), SDG&E will evaluate this plan determine if the site host has arranged for a way to respond to the VGI Rate that is consistent with achieving the VGI Program objectives. That is, consistent with Section III., ¶ F. (page 5) and ¶ B (p. 4), the plan should include measures, services or procedures that allow VGI Facility site host to respond to the pricing signal of the VGI Rate. The VGI Program objective (that is, electric vehicle grid-integration) is to encourage the charging of electric vehicles at VGI Facilities, and per the VGI Rate, during times of day when the VGI prices are lowest, and conversely, avoid charging during times of day when the VGI prices are highest. This pricing, as described in Ex. SD-3 (Fang), corresponds to system and circuit conditions, as well as the changing cost of energy throughout the day. Therefore, any Load Management Plan that promotes or allows for the VGI Facility site host to see this price signal of the VGI Rate and respond to it will be acceptable to SDG&E. Since the VGI Facility is individually metered as a separate service, this allows SDG&E to observe directly the load response to the hour by hour price signal of the VGI Rate to determine the effectiveness of the Load Management Plan.

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<sup>32</sup> Load Management Plan, as used herein, refers to the “load management plan” and “load management tactics” referred to in the Settlement Agreement, Section III., ¶ B and Appendix B.

As noted in the answer to Question III. B., above, this option fosters innovation and the development of creative ways to achieve the efficient integration of EV loads with the grid, in line with VGI Program objectives. The range of load management tactics expected is best answered and demonstrated by a combination of site hosts and EV service providers<sup>33</sup> or vendors who qualify to participate in the program. The RFI and RFP process will help identify load management solutions currently available (or newly developed) through qualifying vendors; this process will ask potential vendors to specify load management tactics, software, and equipment in their RFI/RFP responses. Any examples offered here by SDG&E are necessarily speculative, and cannot anticipate the range of creative approaches site hosts and EV service providers might employ. Those envisioned by SDG&E could include, but are certainly not limited to, the following examples (subject to confirmation by service providers and site hosts):

- Requesting the service provider to decrease the rate of charge (or curtail charging) for each EV during hours of the day with high pricing, and correspondingly, increasing the rate of charge during hours of the day with low pricing.
- Sending an email alert to EV drivers who use a given VGI Facility to voluntarily avoid or limit charging during hours of the day with high pricing, and correspondingly, increase the rate of charge during hours of the day with low pricing.
- Integrating stationary energy storage systems interconnected with the VGI Facility to provide the stored energy during hours of the day with high pricing, and correspondingly, increasing the rate of charge during hours of the day with low pricing.

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<sup>33</sup> “Service provider” is used here and in the Settlement Agreement to make reference “vendors” who provide services and equipment to support EV charging that have the potential to be a third party to SDG&E in the implementing the VGI Program.

SDG&E will not specify the tactics, technologies or results for any given site or Load Management Plan. However, SDG&E will monitor site usage patterns and work with site hosts who are not achieving project objectives to improve their plans. SDG&E will not terminate a site host's VGI Program participation because its Load Management Plan turns out to be ineffective.

## **2. Assess the Impact of EV Charging on Circuits Under the VGI Rate-to-Host Option**

In both the VGI Rate-to-EV Driver option and VGI Rate-to-Host option, each VGI Facility will be metered so the overall facility response to the VGI Rate in aggregate can be measured. By comparing the VGI Facility meter data to that facility's the Load Management Plan (as well as comparing each VGI Facility under the VGI Rate-to-EV Driver option) the effects of these plans can be measured on a daily basis, or any level frequency of interest. It is expected that there will be a variety of Load Management Plans, and with enough volume, there will be enough data to help determine the effectiveness of these in aggregate, and by circuit if desired.

Attachment H illustrates how the VGI Rate and associated EV charging demand can be measured to assess the impact on EV charging under the VGI Rate-to-Host option. The Attachment H graphs contrast two VGI-like pricing conditions:<sup>34</sup>

- 1) The top graph shows EV charging demand on a day with a high prices for some of the hours that correspond to a Critical Peak Pricing ("CPP") day, reflecting peak system

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<sup>34</sup> The graphs depict data from charging behavior by SDG&E employees at VGI Facilities at SDG&E workplaces. SDG&E's robust workplace charging participation and VGI pricing are described at Ex. SD-2 (Schimka) RS-5:15-19 and Schimka, T. 500:5 – 502:2 (April 29, 2015).

conditions, as described in Ex. SD-3 (Fang) CF-2:14-16, and illustrated on Ex. SD-3 (Fang) CF-5:14-15 (Diagram CF-1: Proposed VGI Pilot Rate).

- 2) The bottom graph shows EV charging demand on a day *without* Critical Peak Pricing reflecting lower pricing throughout the day.

Note that the maximum EV charging demand is the same for both days, but the top graph shows EV charging demand is reduced and shifted away from the hours of the day with higher prices. Contrast this with the EV charging demand shown in the bottom graph that is higher during those same hours due to the lower prices. The graphs illustrate on a VGI Facility level how impacts will be assessed at VGI Facilities under the VGI Rate-to-Host option. VGI Facilities under the VGI Rate-to-Host option can be aggregated by circuit to assess circuit impacts.

This ends SDG&E's response to the Assigned Commissioner and Administrative Law Judge questions.

Respectfully submitted,

*/s/ E. Gregory Barnes*

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E. Gregory Barnes

Attorney for

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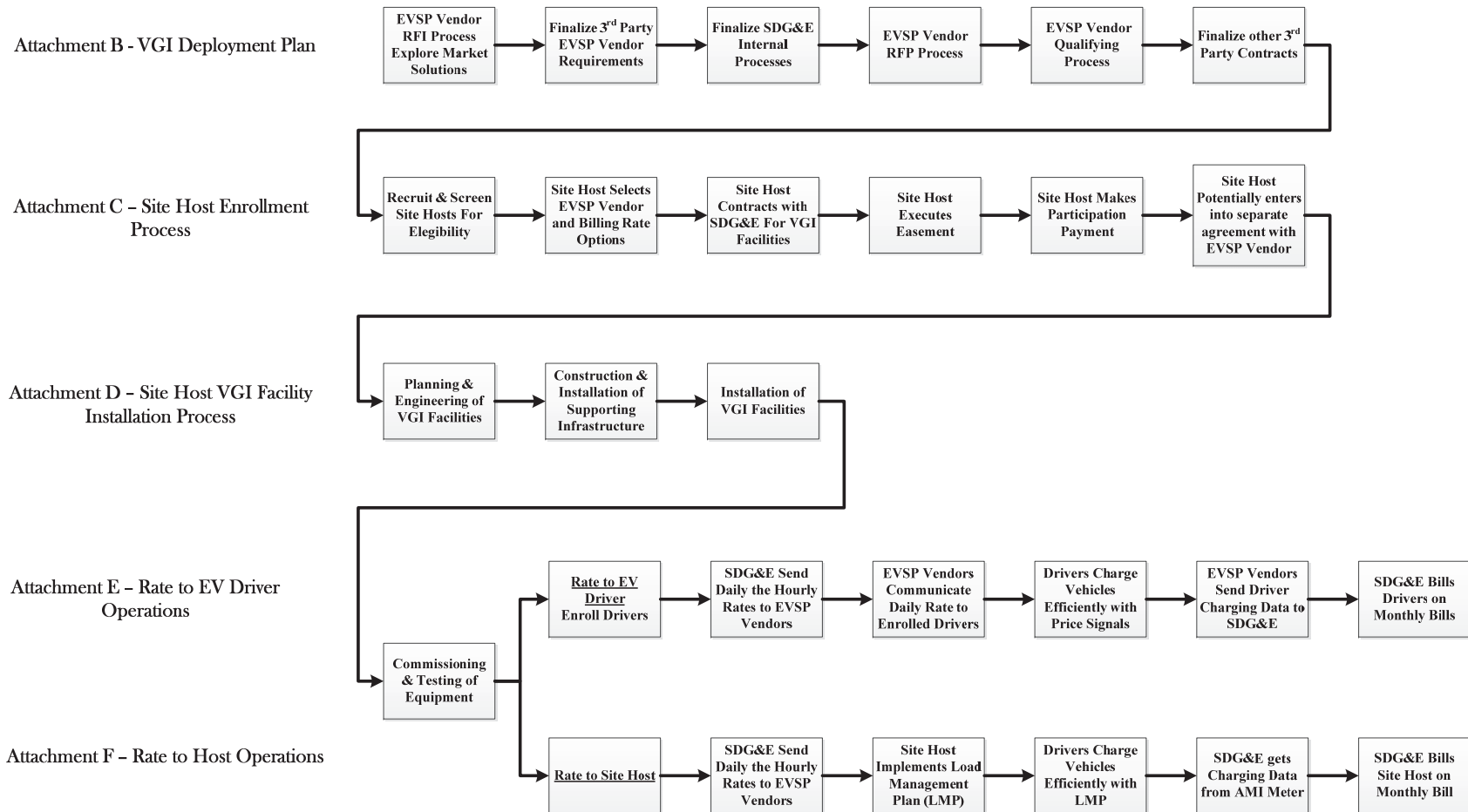
Email: [gbarnes@semprautilities.com](mailto:gbarnes@semprautilities.com)

August 21, 2015

**Attachment A**  
**VGI Implementation Summary Process**

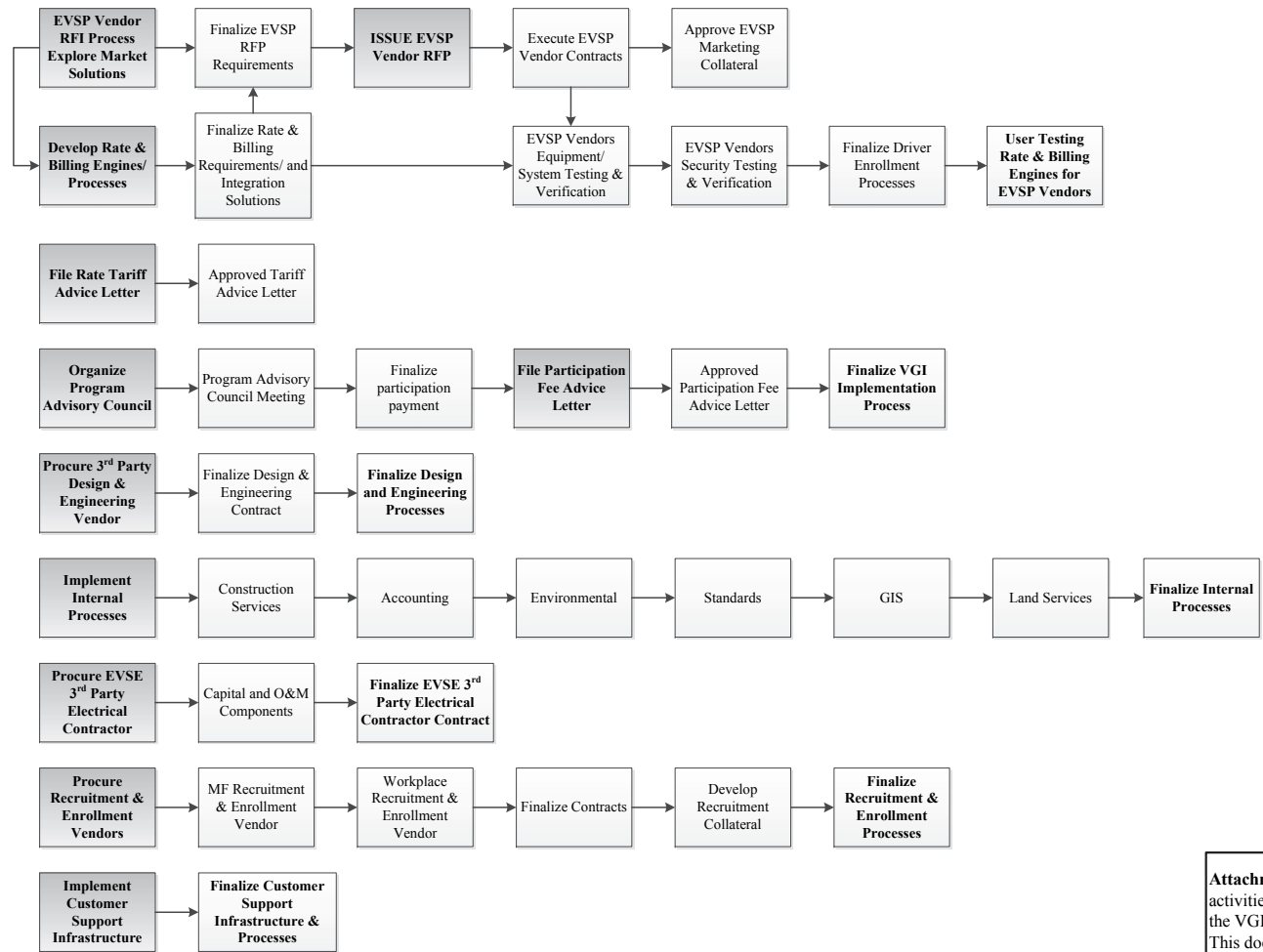


# Attachment A - VGI Implementation Summary Process



**Attachment B**  
**VGI Deployment Plan**

# Attachment B - VGI Deployment Plan

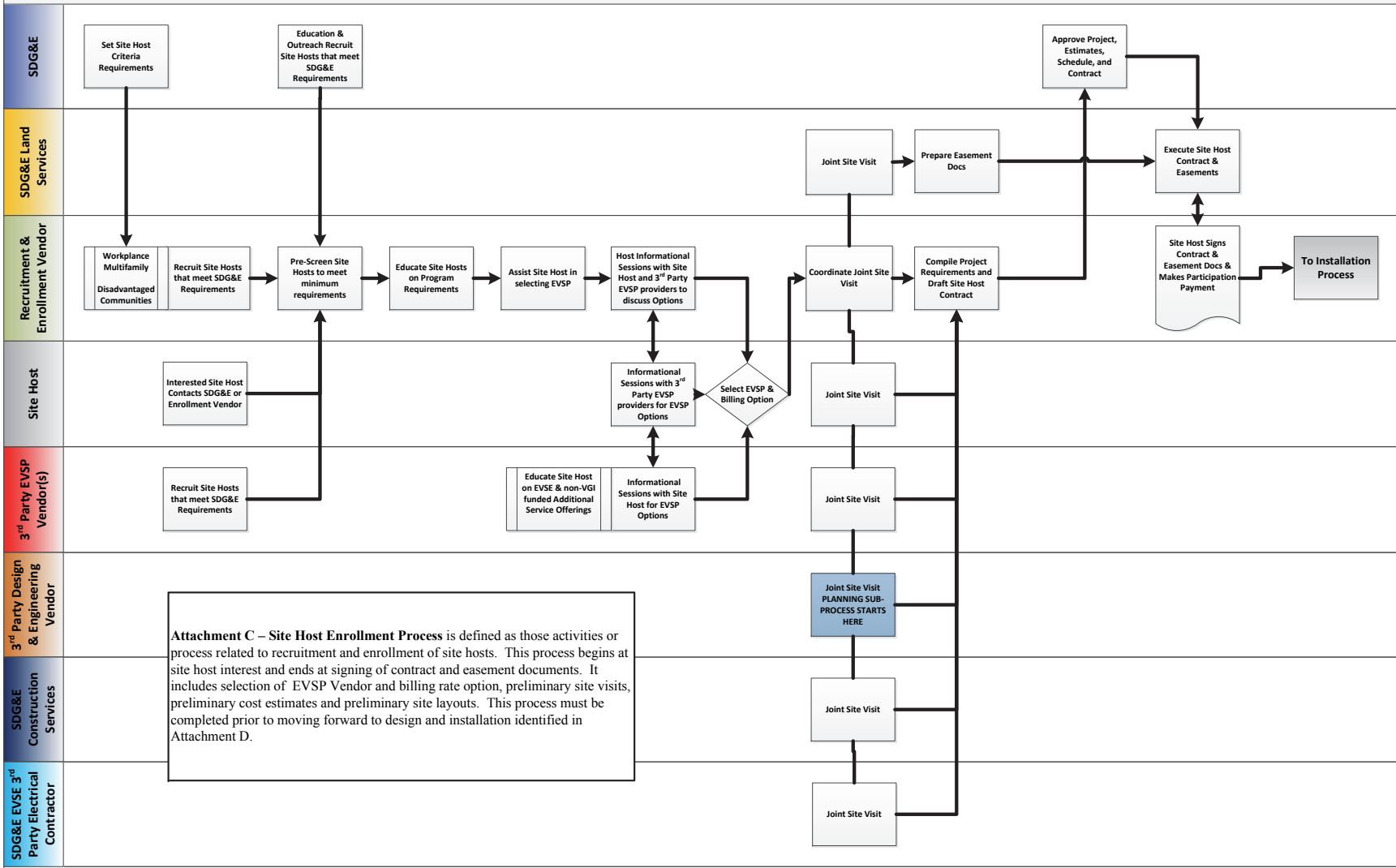


**Attachment B – VGI Deployment Plan** is defined as those activities or process development necessary in order to launch the VGI Pilot Program to potential site hosts and EV drivers. This does not include actual enrollment, design, construction or operational activities which can be found in Attachments C through F.

**Attachment C**  
**Site Host Enrollment Process**

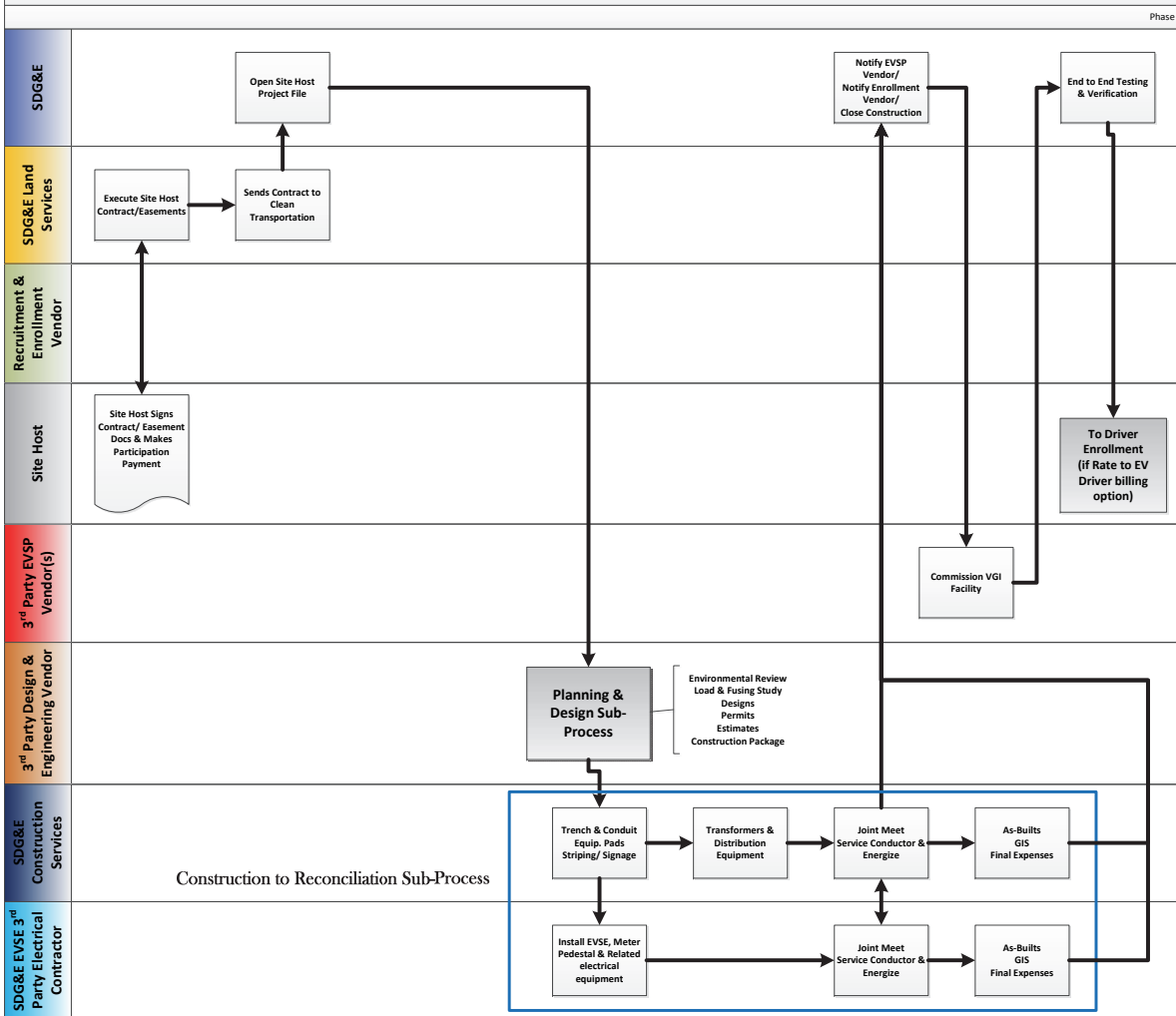
# Attachment C - Site Host Enrollment Process

Phase



**Attachment D**  
**Site Host VGI Facility Installation Process**

# Attachment D - Site Host VGI Facility Installation Process

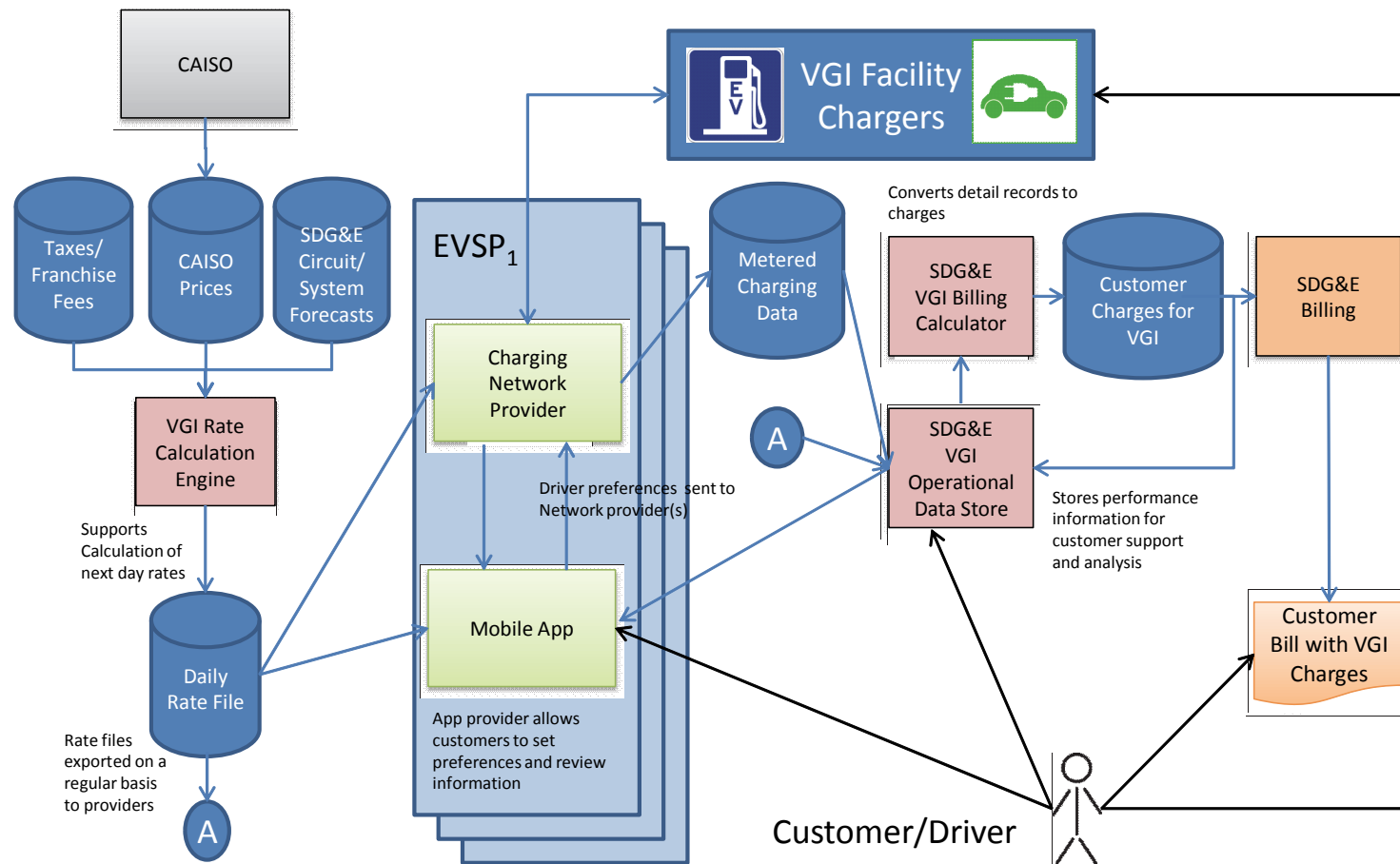


Attachment D – Site Host VGI Facility Installation Process is defined as those activities or process related to design and installation of VGI Facilities up to and including commissioning and testing of EVSP equipment. This process must be completed prior to moving forward to operations processes for either Rate-to-Host or Rate-to- EV Driver options as described in Attachments E & F.

**Attachment E**  
**Rate-to-EV Driver Operations**



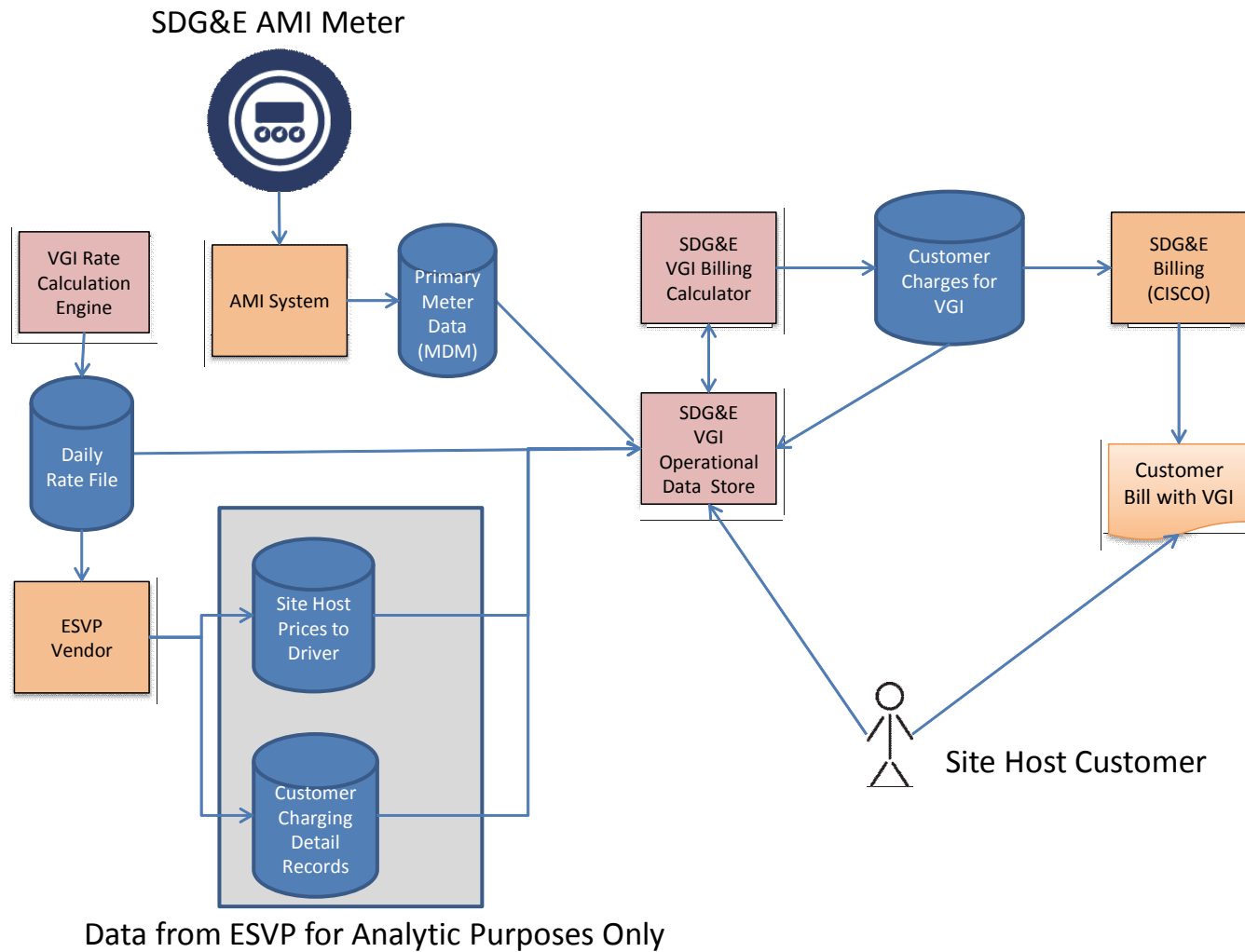
# Attachment E – Rate-to-EV Driver Operations



# **Attachment F**

## **Rate-to-Host Operations**

# Attachment F – Rate-to-Host Operations



**Attachment G**  
**Illustrative Draft RFI**

**DRAFT – for illustrative purposes only**



Request for Information (RFI)

# San Diego Gas & Electric - Electric Vehicle Supply Equipment and Services RFI

[Date]

## **Table of Contents**

<b>1</b>	<b>Introduction</b>	<b>3</b>
1.1	Corporate Background	3
1.2	RFI Background and Objective	3
1.3	RFI Questions, Response Submission, and Schedule	4
1.4	RFI Conditions	4
<b>2</b>	<b>VGI Pilot Program Key Components</b>	<i>Error! Bookmark not defined.</i>
2.1	General	<i>Error! Bookmark not defined.</i>
2.2	Installation Goals	<i>Error! Bookmark not defined.</i>
2.3	Program Progress	<i>Error! Bookmark not defined.</i>
2.4	Technical Requirements	<i>Error! Bookmark not defined.</i>
<b>3</b>	<b>Request For Information Questionnaire</b>	<i>Error! Bookmark not defined.</i>

## **1 Introduction**

### **1.1 Corporate Background**

San Diego Gas & Electric (SDG&E) is a regulated public utility that provides safe and reliable energy service to 3.4 million consumers through 1.4 million electric meters and more than 850,000 natural gas meters in San Diego and southern Orange counties. The utility's area spans 4,100 square miles. Exceptional customer service is a priority of SDG&E as it seeks to enhance the region's quality of life. SDG&E is a regulated subsidiary of Sempra Energy (NYSE: SRE). Sempra Energy, based in San Diego, is a Fortune 500 energy services holding company.

### **1.2 RFI Background and Objective**

Currently, SDG&E has an open proceeding with the California Public Utilities Commission (CPUC) seeking approval its Electric Vehicle-Grid Integration (VGI) Pilot Program application to own, operate, and maintain grid-beneficial electric vehicle (EV) charging. SDG&E proposes introducing EV **charging infrastructure that uses an innovative time-variant rate to promote the efficient integration of EV charging loads with SDG&E's grid.**<sup>1</sup> The proposed VGI Pilot Program will provide benefits to all SDG&E customers by encouraging charging during times of the day that are compatible with grid conditions, and maximize the use of renewable energy resources. To implement the pilot program, SDG&E will pre-qualify and use third party vendors of EV supply equipment and services in coordination with SDG&E's customer contact personnel and program operations.

SDG&E will target the VGI Pilot Program offering **exclusively in workplace and multifamily community sites – locations with frequently used, long duration parking.** These are two critical customer segments ideally suited for grid-integrated charging and have the greatest potential to demonstrate the benefits of VGI, including increasing zero emission miles driven per EV.

**Please note that the CPUC has not yet decided whether to grant SDG&E's application. The CPUC may approve the application, it may reject the application, or it may approve the application with modifications. SDG&E cannot publish any**

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<sup>1</sup> For more background on SDG&E's application before the CPUC please see <http://www.sdge.com/regulatory-filing/10676/sdge-electric-vehicle-grid-integration-pilot-program>.

**Requests for Proposals or enter into any contracts related to program implementation until and unless the CPUC approves the application.**

### **1.3 RFI Questions, Response Submission, and Schedule**

- All questions regarding the content of this RFI must be submitted to Patrick Webb, category manager in supply management and diverse business enterprises at SDG&E, via the messaging tab for this RFI within PowerAdvocate ([www.poweradvocate.com](http://www.poweradvocate.com)). All questions must be received no later than 12:00 PM PST on [Date].
- All questions received from recipients will be summarized and answers to questions will be shared with all recipients via the messaging tab within PowerAdvocate by [Date].

**All responses must be uploaded into PowerAdvocate ([www.poweradvocate.com](http://www.poweradvocate.com)) by 12:00 PM PST on [Date].**

SDG&E, at its sole discretion, may elect to issue a formal Request for Proposal to a subset of RFI respondents (Respondents), work directly with Respondents on an agreement, or not proceed any further.

### **1.4 RFI Conditions**

- Responses will be opened privately; no abstract or evaluation tabulation will be made available to Respondents.
- SDG&E reserves the right to take any action it believes to be in SDG&E ratepayers' best interests.
- No obligation, either expressed or implied, exists on the part of SDG&E to award a contract based upon the issuance of this RFI.
- All costs incurred by the Respondent in the preparation, delivery and presentation of the RFI response or in submitting any further responses, presentations, or materials related to this RFI shall be the sole responsibility of the Respondent. All documentation submitted as part of this RFI shall become the property of SDG&E.
- The Respondent shall not make public information releases, or otherwise publish any information obtained or produced by it as a result of, or in connection with this RFI, the performance of services or providing products to SDG&E without prior written authorization from SDG&E.



## **2 VGI Pilot Program Key Components**

### **2.1.1 General**

- 1) SDG&E will install, own and maintain all EV charging infrastructure and associated equipment for up to 5,500 electric vehicle chargers at 550 VGI Facilities at participating host sites.
- 2) Host sites will be limited to workplace and multifamily (also referred to as multi-unit dwellings or MuDs) communities, that are frequently used locations where cars are parked for long durations (roughly, a minimum of four hours per day).
- 3) Host sites will NOT be public charging facilities.
- 4) SDG&E will be sourcing with multiple third party vendors of EV supply equipment and services pre-qualified by SDG&E (*Vendors*) to provide site host locations (VGI Facilities) with both EVSE hardware, VGI services and energy management choices.
- 5) The VGI Pilot Program will offer grid integrated charging with innovative hourly rate (VGI Rate) to drivers that will incentivize grid-integrated charging behavior; as noted in the Metering & Billing section below. *Vendors* will be required to communicate the VGI Rate to either the EV driver and/or the VGI site host, fulfill EV charging requirements in response to the VGI Rate, and gather the usage data to be sent to SDG&E via back-office integrations for billing purposes. The billing aspect will be handled by SDG&E.
- 6) The VGI Rate is an hourly dynamic rate that varies by site.
- 7) *Vendors* will provide phone and web apps that allow VGI customers (i.e., enrolled drivers or site hosts) to conveniently and efficiently manage their EV charging using the VGI Rate.

### **2.1.2 Billing Options**

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- 1) VGI Facility site hosts (e.g., property manager/owner of a multifamily community or workplace settings) will have the choice of two billing options:
  - a. *VGI Rate-to-EV Driver* – the VGI Rate offered directly to the EV driver; or
  - b. *VGI Rate-to-Host* – the VGI Rate offered to the site host.
- 2) *Vendor* will be responsible for transmitting SDG&E's VGI daily dynamic hourly pricing to drivers and/or site hosts depending on the billing option chosen. The VGI daily hourly rates could vary from site to site. *Vendor* will be responsible for transmitting driver usage data to SDG&E for billing purposes. Drivers or site hosts will be billed by SDG&E on their SDG&E monthly bills.
- 3) Where the VGI Facility site host opts to receive the VGI Rate (i.e., the VGI Rate-to-Host pricing plan), the site host, or its selected vendor, will be required to submit to SDG&E the load management tactics it will implement at its VGI Facility, including the incremental costs and equipment required to implement the load management tactics, the prices or fees that it intends to levy on VGI Facility users (EV drivers), and any vehicle or Electric Vehicle Supply Equipment (EVSE) communication systems necessary to implement the load management tactics. Site hosts that do not submit load management plans consistent with the Guiding Principles (see the Settlement, June 3, 2015, <http://www.sdge.com/regulatory-filing/10676/sdge-electric-vehicle-grid-integration-pilot-program>) will be asked by SDG&E to revise accordingly and will be ineligible to participate in the Program until SDG&E determines that the load management plan is consistent with the Guiding Principles.

Participation in the VGI Rate-to-Host option will not be unreasonably withheld. As with VGI Facility site hosts that opt for the VGI Rate-to-EV Driver pricing plan, site usage patterns will be monitored, and in addition, site host determined prices or fees (to use the VGI Facility) will be tracked for those site hosts that opt for the VGI Rate-to-Host pricing plan. These data will be used to inform CPUC policy.

- 4) After the first year of participation in the VGI Pilot Program, the VGI Facility site host shall have an annual option to switch VGI Rate plans (i.e., the VGI Rate-to-EV drivers pricing plan or VGI Rate-to-VGI host pricing plan). In the event that ownership or control of a VGI Facility site changes, the new site host shall have the option to select a VGI Rate plan, consistent with current utility tariff and billing practices.

### **2.1.3 Electric Vehicle Supply Equipment**

- 1) VGI Facility site hosts will choose electric vehicle supply equipment (EVSE) and related VGI services from a list of *Vendors* pre-qualified by SDG&E to provide such services for the VGI Pilot Program. SDG&E's VGI Pilot Program is limited to Level 1 and Level 2 EVSE and does not include the installation of DC Fast Charging equipment.

### **2.1.4 Additional Services**

- 1) *Vendors* may offer and contract with the VGI Facility site host to provide any additional or complementary services, as long as these services do not interfere with the objectives of the VGI Pilot Program. Specifically, such services may not inhibit the ability of the EV driver or VGI Facility site host to respond to the pricing signal of the VGI Rate. The costs of these additional services will not be borne by the VGI Pilot Program, unless they are complementary services necessary to support the VGI Pilot Program objectives. SDG&E will encourage discussions during the RFI process that allow vendors to explore with SDG&E the funding of innovative opportunities that may exceed the minimum implementation requirements of the VGI Pilot Program, and have the potential to enhance and improve the grid-integration outcomes of the VGI Pilot Program overall.

### **2.1.5 Potential Site Host Marketing by *Vendors***

- 1) *Vendors*, in coordination with SDG&E customer contact personnel, may market and sign up potential VGI Facility site hosts to participate in the VGI Pilot Program in the two targeted customer segments (multifamily communities and workplace settings), including customer sub-segments such as Disadvantaged Communities or sites that support car-sharing

entities. All sites are subject to SDG&E approval. Some sites may be rejected due to physical limitations, unusually large construction costs and/or level of difficulty as determined by SDG&E.

- a. Competitively neutral descriptions of the VGI Rate plans will be prepared by SDG&E and shall be used by *Vendors*;
- b. *Vendors* shall be permitted to develop and utilize their own marketing materials at their own expense, consistent with and subject to SDG&E’s Co-branding Policy and approval process.
- c. In order to create and maintain a positive customer experience with the VGI Pilot Program, *Vendors* will be required to describe how they will share the initial and ongoing customer relationships and services with SDG&E and the VGI Facility host and EV driver.
- d. *Vendors* will be permitted to contract directly with site hosts for services as long as these services do not interfere with the objectives of the VGI Pilot Program.

#### **2.1.6 Diversified Business Enterprises**

- 1) The VGI Pilot Program will be included within SDG&E’s companywide Diversified Business Enterprise (DBE) goal of 40%. The contracts with *Vendors* will contain a DBE subcontracting plan, which requires the bidder/contractor to list its expected annual DBE spend and list any subcontractors it plans to use to achieve its DBE goal. Bidders of all VGI Pilot Program contracts, including *Vendors*, will be requested to provide proposals in support of SDG&E’s 40% goal.

#### **2.1.7 Disadvantaged Communities**

- 1) At least 10% of VGI Facilities will be installed in Disadvantaged Communities as identified by Cal EPA’s Enviroscreen tool developed pursuant to SB 535 (de León, 2013). SDG&E will work with community based organizations to assist with education and outreach, as well as pre-qualifying and signing-up site hosts for participation in the VGI Pilot Program. In addition, SDG&E will:
  - a. Scale up deployment of VGI Facilities at qualified locations above the 10% target to support accelerated EV adoption in Disadvantaged Communities.

- b. SDG&E will complement and coordinate with federal, state and locally funded programs, such as those being developed by the Air Resources Board pursuant to SB 1275, that are expected to grow the demand for EVs in Disadvantaged Communities (e.g., EV car-sharing services).
- 2) All contractors shall have hiring goals to support opportunities to increase hiring from Disadvantaged Communities, including first-source hiring and targeted-hiring goals for projects in Disadvantaged Communities. The Program Advisory Council (PAC) will also monitor and provide recommendations, including specific numerical targets for meeting hiring targets, to contractors or subcontractors associated with the increase of hiring from Disadvantaged Communities, including best practices for hiring in Disadvantaged Communities.

#### **2.1.8 Metering & Billing**

- 1) Metering at the EVSE level must be compatible with SDG&E billing and metering requirements (i.e., accuracy, tolerances, accessibility, testability, and re-calibration, as needed). SDG&E will be testing and validating EV equipment including but not limited to power quality meter, communications modules, intelligence, and software, this process will be part of vendor validation process. SDG&E reserves the right to make exceptions as conditions of the VGI Pilot Program warrant.
  - a. Minimum acceptable metering tolerance is anticipated to be 1%. To meet meter testing and re-calibration requirements, removal (and replacement) of the entire EVSE will be acceptable and is preferred. SDG&E and its contractors will be responsible for removal and replacement of EVSE, and *Vendors* will be required to maintain a system for identification of and notification to SDG&E of failing or faulty equipment including meters.
  - b. Minimal acceptable metering time interval is fifteen minutes. The kWhr usage must be record for each time interval on the quarter hour starting at the top of the hour (i.e., 12:00, 12:15, 12:30, 12:45, 1:00, ...)
  - c. Under the VGI Rate-to-Driver option, the meter associated with each EVSE will be the revenue (billing) meter and must be able to be used by multiple EV drivers (e.g., individual EV Driver

usage can be tracked across multiple chargers and time intervals).

- d. Under the VGI Rate-to-Host option, only one meter per VGI Facility is necessary for billing purposes, and this will be an SDG&E meter. However, under this option the *Vendors* shall continue to provide meter data associated with each EVSE on a per enrolled driver basis as the VGI Rate-to-Driver option.
- e. VGI billing will be provided by SDG&E to enrolled drivers (VGI Rate-to-Driver) or site host (VGI Rate-to-Host) on existing SDG&E bills using energy usage (kWh) data provided by *Vendors*. Energy usage data will be provided to SDG&E by the *Vendors* to SDG&E's specifications in a manner and format to be informed conceptually through this RFI.
- f. VGI minimum operational requirements are to send VGI hourly rate on a day-ahead basis, allow customer (site host or EV driver) to set charging needs, meet their charging needs at the lowest possible cost, collect usage data and send data to SDG&E for billing processing.
- g. For instances when a non-SDG&E customer is allowed to temporarily charge a vehicle by the VGI facility site host on the VGI Rate-to-EV Driver pricing plan VGI facility, 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.

## **2.2 Installation Goals**

VGI Pilot Program sign-ups and contracting are proposed to take place over four years, and installations to take place over four to five years, with a goal of VGI installations **at a blend of workplace and multifamily community host sites as follows (this is an estimated rate of installation and can vary by year, but will not exceed the program cap of 5,550 EVSE at 550 VGI Facilities – there can be multiple VGI Facilities at a host site):**

- 1) Year 1 (2016) – 50 site installations of 10 charging stations each
- 2) Year 2 (2017) – 100 site installations of 10 charging stations each
- 3) Year 3 (2018) – 200 site installations of 10 charging stations each
- 4) Year 4 (2019) – 200 site installations of 10 charging stations each

## 2.3 Program Process

VGI Pilot Program participation is driven by customer demand, that is, site hosts, who can approach SDG&E directly to request to participate in the program. In addition, site hosts may also be recruited by *Vendors*, SDG&E and others, screened for eligibility, and enrolled in the VGI Pilot Program by SDG&E. Site hosts will have the choice to participate in one of the two billing options (described in Billing Options above), as well as a choice of SDG&E pre-qualified *Vendors* which will include the available option of EVSE and services. *Vendors* may offer additional services to site hosts, as long as these services do not interfere with the objectives of the VGI Pilot Program. However, any additional services by *Vendors* will not be funded by the VGI Pilot Program and must be a separate private agreement between the *Vendor* and the site host.

Once the site host is enrolled in the VGI Pilot Program and selection of the *Vendor* is complete, SDG&E will enter into a contract with the site-host allowing SDG&E to install, own and maintain the EVSE and associated equipment. Once installed by SDG&E the *Vendor* will test and commission the charging units, enroll drivers, provide training and support to site-hosts and drivers, and will be responsible for operating the VGI system to SDG&E's specifications (as described in Metering & Billing, above). While the *Vendors* will provide customer support to site hosts and drivers at locations utilizing their respective equipment and system services to operate the VGI system, SDG&E will be the primary point of contact for deployment and follow up for all customer support for all site hosts and drivers enrolled in the program. SDG&E may route site host and customer inquiries and issues to applicable *Vendors* who will be required to provide support services within a 24-hour turnaround time.

## 2.4 Technical Requirements

### 2.4.1 Hardware Requirements

1. Compliance with NEMA 3R or NEMA 4 for indoor/ outdoor use
2. Title 20 and Title 24 compliant (including California Electric Code compliant)
3. Compliance with SAEJ1772 AC L1 and L2 requirements
4. Stationary (i.e. attached to floor, ground, ceiling or wall)
5. Underwriters Laboratories (UL) listed or other approved Nationally Recognized Testing Laboratories
6. Cable couplers compliant with SAE J1772TM

7. Power supply to be 60 Hertz, 120v for Level 1 (15 amps maximum), 208v – 240v for Level 2 (40 amps maximum)
8. Maximum EVSE standby draw of 10 Watts
9. Meet power quality parameters as defined in SAE J2894/1
10. Meter accuracy within 1% in accordance to ANSI C12 requirements

#### **2.4.2 Functional Requirements**

1. Billing grade metering (as described in the Metering & Billing section above) through internal or onboard metrology device able to measure or calculate the following
  - a. kWh consumption at 15 minute intervals per EV Driver
  - b. Total kWh consumption per charging session per EV driver
  - c. Accumulated kWh consumption per **EV Driver and per EVSE charger port or head.**
2. Return to post-configuration state after loss of power
3. Reset options to return the device to its pre-charge state
4. Provide explicit error messages for a range of device and communication failures.
5. Health checking functionality, reporting, logging and bi-directional alerting capabilities
6. Support customer charging preferences through app or other internet based applications
7. Have EV Driver authentication capabilities
8. Have a remote reset capability for support purposes
9. Have remote software/firmware upgrade functionality

#### **2.4.3 System Requirements**

1. Meet SDG&E data interfaces requirements for day ahead pricing and billing data transfers
2. Meet Sempra Energy Security and Customer Privacy Requirements
3. Inform customer of day ahead pricing
4. Inform customer with state of charge (SOC)
5. Inform customer in real time of any charge failure, error, and send appropriate alarms and notifications
6. Inform customer of usage and billing data on granular and aggregate levels



7. Have remote software/firmware upgrade functionality
8. Support delivery of messages in near real time
9. Acknowledge receipt of messages
10. Acknowledge execution failure of requests
11. Have communication options independent of existing site host communications infrastructure

### 3 Requests for Information

Through this Request for Information (RFI, SDG&E seeks to **inform a future Request for Proposal (RFP process)** for selection of multiple *Vendors* to provide EVSE equipment and charging management solution service providers in order to provide selected workplace and multifamily community site-hosts a range of options to meet their individual needs. SDG&E encourages vendors who may only offer partial services requested within this RFI to partner with other vendors or make partial submittals in order to inform SDG&E to the greatest extent possible what services they have to offer. In general, qualified *Vendors* would:

- Provide EVSE charging equipment for installation by SDG&E or its contractors
- Test and commission installed EVSE equipment for use
- Enroll drivers into the VGI Pilot Program per SDG&E requirements as a managed, coordinated process with SDG&E and site hosts
- Provide site-host and driver training on use of installed EVSE and related services (e.g., phone or web app)
- Provide Internet-accessible driver and site-host services to support the goals of the VGI Pilot Program, while providing drivers with a cost effective, efficient, convenient, easy-to-use and reliable vehicle charging management system
- Interface with SDG&E to provide enrolled drivers with day-ahead, hourly pricing information
- Interface with SDG&E and Site Hosts to provide manage enrollment processes
- Provide SDG&E necessary billing and customer service data
- Interface with SDG&E as needed to support presentment of historical charging data
- Provide maintenance and support for communications hardware
- Provide on-going customer support for site-hosts and drivers

- Provide methods to monitor and identify inoperative or malfunctioning equipment or system operations prior to or in real-time and report to SDG&E immediately.

**Please describe your abilities as it relates to the role of the *Vendors* in the VGI Pilot Program including but not limited to the following questions:**

**3.1 General**

- 1) Overall product and service offering including quality, warranty and capability.

[Please respond here.](#)

- 2) Ability to meet safety, reliability, operational and VGI Pilot Program requirements

[Please respond here.](#)

- 3) Demonstrated ability to provide innovative functionality to enhance the VGI Program experience for the customer while meeting program objectives

[Please respond here.](#)

- 4) Ability to meet minimum requirements for EVSE and operating systems

[Please respond here.](#)

- 5) Your capabilities for VGI Pilot Program value-added features

[Please respond here.](#)

- 6) Your EVSE Performance history

[Please respond here.](#)

- 7) Your prior experience in providing EVSE services as described

Please respond here.

- 8) Describe your organization's financial strength

Please respond here.

- 9) Provide information related to sustainability (green) initiatives or programs at your company

Please respond here.

- 10) How does your firm plan to support SDG&E Diverse Business Enterprise goal of 40% for this project?

Please respond here.

### **3.2 Metering**

- 1) How do you support metering capacity necessary or scaling for VGI (e.g. internal or onboard metrology device, telemetry points, as noted in the Metering & Billing section)?

Please respond here.

- 2) What solutions do you support that have metering capacity through metrology device(s) able to measure or calculate the following:
- a. Accumulated consumption kWh (e.g., by charging session, by driver, by charger, and by 15-minute interval)

Please respond here.

- b. 15-minute interval defined as quarter hours starting at the top of the hour (i.e., at 12:00 AM, 12:15 AM, 12:30 AM, 12:45 AM, ...)

Please respond here.

### **3.3 Systems**

- 1) How do you support system recovery after loss and resumption of system power, (e.g., return to prior configuration state, persist communication and registration configurations, restart/continue an authorized charging session after)?

Please respond here.

- 2) How do you provide system reset options, which returns the charging device to its pre-charge state (e.g., back office initiated, administrator or customer authorization card, pin, physical button or switch)?

Please respond here.

- 3) How do you support telemetry network traffic and mitigate scaling or bandwidth congestion issues?

Please respond here.

- 4) How do you support equipment failure detection (hardware & software)?

Please respond here.

- 5) How do you support customer real time notifications?

Please respond here.

### **3.4 Security & Customer Privacy**

- 1) How do you support key cybersecurity controls such as authentication, authorization, accounting, confidentiality (if sending confidential information), and integrity?

Please respond here.

### **3.5 Driver Enrollment**

- 1) What process do you use to enroll and disenrollment of the driver/customer?

Please respond here.

- 2) How would you associate multiple drivers to a single customer account?

Please respond here.

### **3.6 Integration Capabilities**

- 1) What methods (e.g. web services, file transfer) do you have to:
  - a. Receive a daily rate information containing hourly prices per kWh that is location specific to the each VGI site as conceptually described in exhibit 1 (below)?

Please respond here.

- b. Send daily consumption information as conceptually described in exhibit 2 (below)?

Please respond here.

- c. Receive session, YTD, and historical driver charging information (e.g. costs and kWh) as described in exhibit 3 (below)?

Please respond here.

- d. Send and receive enrollment data between Company and service provider?

Please respond here.

- e. Send and receive information on active vs inactive (e.g. do or do not have authorization to charge) customer accounts (both the company and the site host can turn a customer as inactive)?

Please respond here.

- f. Send diagnostic information on EVSE state of health?

Please respond here.

- 1) What specific national and/or international standards do you support (e.g., Open Charge Point Protocol, Open ADR, GreenButton, ISO/IEC 15118, IEEE Smart Energy Profile 2.0, etc...)? For each standard implemented please describe specific areas of coverage within the standard, extensions and modifications you have made (if any), certifications received, and testing completed with 3<sup>rd</sup> party vendors.

Please respond here.

- a. Describe the specific standards you implement for the purposes of 3<sup>rd</sup> party data exchange for the following types of data: Rates, Metering, Driver Enrollment and Site Host Enrollment. Describing the extent and scope of your implementations for each category of data exchange.

Please respond here.

### **3.7 Site Host and Driver Support**

- 1) What driver/customer support capabilities do you have for:
  - a. Enrollment of driver/customer? Or Enrollment of site host?

Please respond here.

- b. Set up/update of price based charging preferences?

Please respond here.

**DRAFT – for illustrative purposes only**

- c. Authorization/ De-authorization of drivers associated with one account?

Please respond here.

- d. Override of driver default charging preferences to meet immediate charging needs (e.g., charge now capabilities)?

Please respond here.

- e. Remotely modify charging preferences.

Please respond here.

- f. For driver/customer presentment of charging preferences and charging history (e.g., current session, month-to-date, and prior charging history)?

Please respond here.

- g. Address customer/driver billing inquiries (e.g., charging kWh disputes)?

Please respond here.

- 2) What customer support channels do you provide (e.g., web, mobile phone and tablets, call center – please provide hours of operation)?

Please respond here.

- 3) For the above driver/customer support capabilities, which are available through each customer support channel? Describe any capability differences between channels.

Please respond here.

- 4) What site host support capabilities do you have for:
  - a. Authorization of driver/ customer to use site host EV equipment?

Please respond here.

- b. De-authorization of driver/ customer?

Please respond here.

- c. Authorization of related drivers within an account?

Please respond here.

- d. Site host driver/customer presentment (e.g. web, mobile phone, tablets, call center) capabilities? How often can you support pricing changes in your presentment capabilities?

Please respond here.

- 5) What site host support channels do you provide (e.g., web, mobile phone and tablets, call center)?

Please respond here.

- 6) For the above site host support capabilities, which are available through each site host support channel? Describe any capability differences between channels.

Please respond here.

- 7) What service level (e.g., 99.99% uptime) does your charging system support?

Please respond here.

- 8) How do you support\respond to equipment failure and what is the process to mitigate them and in what timeframe.

Please respond here.

### **3.8 Load Management Capabilities**

- 1) Describe your capabilities and services to assist site hosts with load management solutions for those site hosts who select a Rate-to-Host option.



Please respond here.

### **3.9 Innovation**

- 2) Describe innovative opportunities that may exceed the minimum implementation requirements of the VGI Pilot Program, and have the potential to enhance and improve the grid-integration outcomes of the VGI Pilot Program overall.

Please respond here.

### **Exhibit 1. Daily Rate Information**

The following conceptual format for exchanging daily rate information between SDG&E and ESVP's is presented below. It is assumed that this format will be further refined as part of SDG&E's VGI RFP process.

<VGI Rates>

<!-- A sequence of daily rate records -->

<Issue Date Time> "Date time of rate being published to support rate revision/update process"

<VGI Rate Record>

<Applicable Circuit Number> "Circuit Identity associated with the daily rate"

<Applicable Zip Code> "Applicable zip code to identify differences in taxes and franchise fee rates"

<Effective Date> "Date upon which the rate is effective"

<Intervals>

<!-- A sequence of rates for intervals which is assumed to be one hour initially -->

<Interval>

<Start Time> "Interval start time for rate"

<End Time> "Interval end time for rate"

<Energy Charge Rate> "Rate per kWh in dollars and cents"

<Tax Rate> "Rate per kWh in dollars and cents"

<Franchise Fee Rate> "Rate per kWh in dollars and cents"

</Interval>

<!-- As many intervals as needed to cover the day fully -->

</Intervals>

</VGI Rate Record>

<!-- As many rate records as needed to cover requirements -->

</VGI Rates>

## **Exhibit 2. VGI Daily Consumption Information**

The following conceptual format for exchanging consumption information between SDG&E and EV service provider's (EVSPs) is presented below. It is assumed that this format will be further refined as part of SDG&E's VGI RFP process.

<VGI Charges>

<EVSP ID> “The identity of the EVSP providing the information”

<!-- A sequence of charge detail records -->

<VGI Charge Detail Record>

<Charging Site ID> “Unique Site ID”

<Charging Station ID> “Unique ID of the charge post associated with the charging session”

<Customer ID> “ID of the customer responsible for the charge session”

<Driver ID> “ID of the driver who was responsible for the charge session”

<Start Date-Time> “start date-time of the charge session”

<End Date-Time> “end date-time of the charge session”

<Total Cost> “Total cost in dollars and cents presented to the charge customer and driver”

<Total Energy> “Total energy in kWh provided during the session”

<Intervals>

<!-- A sequence of intervals making up the session. Charging session intervals may be every 15 minutes -->

<Interval>

<Start Date-Time> “start date time of charging in the interval”

<End Date-Time> “end date time of charging in the interval”

<kWh> “Energy delivered in the interval”

<Interval Cost> “Total cost of the charge in the interval in dollars and cents including taxes and fees”

</Interval>

**DRAFT – for illustrative purposes only**

<!-- As many intervals as needed to make up the total session -->

</Intervals>

</VGI Charge Detail Record>

<!-- As many detail records as needed to cover set of charge detail records -->

</VGI Charges>

### **Exhibit 3. Historical Charging Information**

The following conceptual format for exchanging historical charging information between SDG&E and EVSP's is presented below. It is assumed that this format will be further refined as part of SDG&E's VGI RFP process.

<Customer Charging Histories>

<!-- A sequence of customer charging histories -->

<Customer Charging Session History>

<!-- The charging session history of a customer -->

<Customer> “This is a unique identifier which is used to indicate the customer associated with this charging history”

<Customer Sessions>

<!-- A set of charge sessions associated with the customer account -->

<Customer Session Detail>

<Driver> “The ID of the driver who initiated the charging session – not necessarily the customer ID”

<Site Location ID> “Unique ID of the site where session took place”

<Charging Station ID> “Unique ID of the individual charge post”

<ESVP ID> “ID of the ESVP managing the site”

<Total Cost> “Cost in dollars and cents”

<Energy Charge> “Cost in dollars and cents”

<Taxes> “Cost in dollars and cents”

<Franchised Fee> “Cost in dollars and cents”

<Delivered Energy> “Energy delivered in kWh”

**DRAFT – for illustrative purposes only**

<Start Date-Time> “date time of the session starting time”

<End Date-Time> “date time of the session ending time”

</Customer Session Detail>

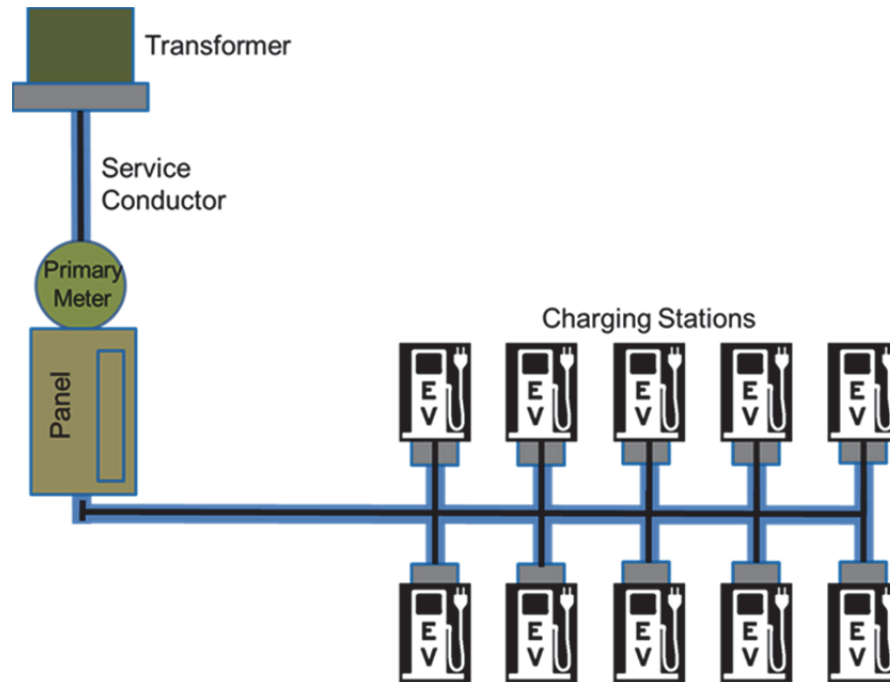
<!-- repeats with as many sessions as needed -->

</Customer Charging Session History>

<!-- repeats with as many customers as needed -->

</Customer Charging Histories>

**Exhibit 4. Host Site Configuration illustration**

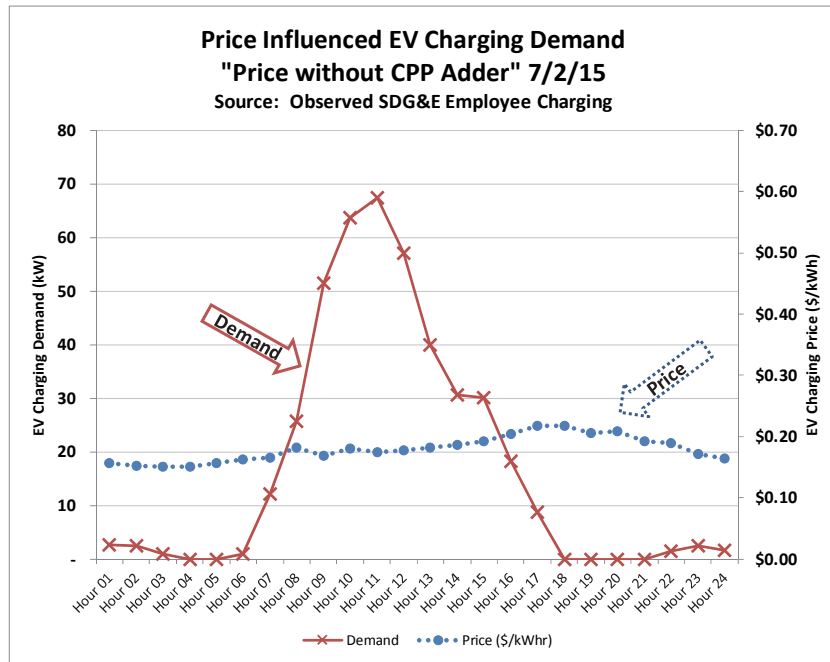
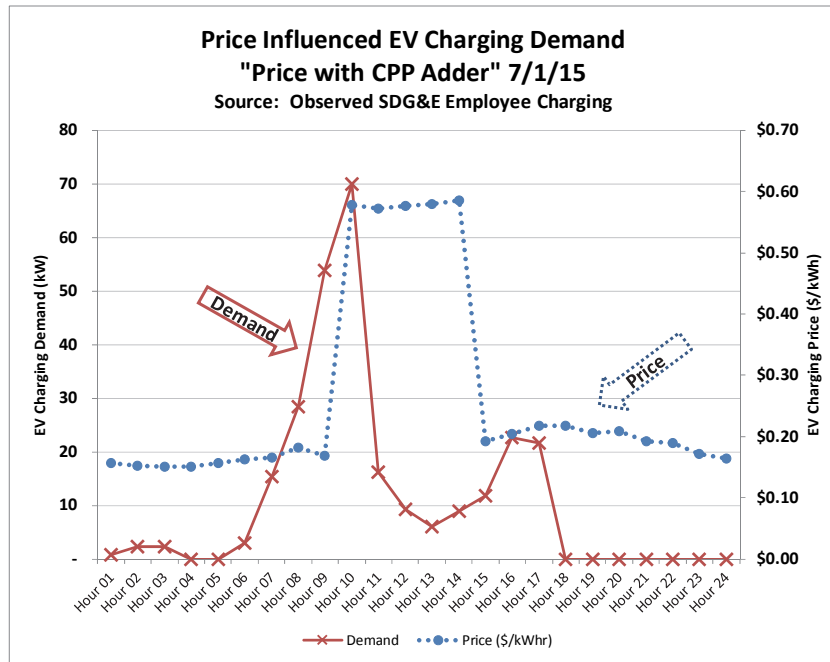




**Attachment H**  
**VGI Rate-to-Host Option - How Price Affects EV**  
**Charging Demand**

## Attachment H

### VGI Rate-to-Host Option - How Price Affects EV Charging Demand



The two graphs above illustrate how hourly prices for EV charging influence hourly EV charging demand. The top graph shows a day where a Critical Peak Pricing (CPP) adder increases prices in hours 10 through 14, resulting in lower EV charging demand compared the bottom graph without a CPP price adder.

These graphs are observed EV charging by SDG&E employees using a VGI system and pricing implemented at SDG&E workplaces.