

August 4, 2021

CPUC Energy Division Tariff Unit
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Re: Response of the Vehicle-Grid Integration Council to Advice Letter 6259-E of Pacific Gas and Electric Company

Dear Sir or Madam:

Pursuant to the provisions of General Order 96-B, the Vehicle-Grid Integration Council (“VGIC”) hereby submits this response to the above-referenced Advice Letter 6259-E of Pacific Gas and Electric Company (“PG&E”), *Request for Approval of PG&E’s VGI Pilots in Compliance with Decision 20-12-029* (“Advice Letter”), submitted on July 15, 2021.

I. INTRODUCTION.

With the unanimous approval of Decision (“D.”) 20-12-029 on December 17, 2020, VGIC commended the Commission for implementing vehicle-grid integration (“VGI”) strategies pursuant to SB 676 and other VGI strategies deemed reasonable by the Commission. D. 20-12-029 (the “VGI Decision”) also strove to implement some of the primary recommendations and outcomes of the lengthy and resource-intensive VGI Working Group process, which produced a Final Report of the California Joint Agencies Vehicle-Grid Integration Working Group, as well as subsequent formal party comments on VGI issues. VGIC was generally pleased to see party recommendations referenced and adopted in D.20-12-029. VGIC was encouraged by Ordering Paragraphs (“OPs”) 13, 14, and 15 directing each investor-owned utility (“IOU”) to develop with stakeholder input VGI pilots.

Subsequently, each IOU, including PG&E, presented high-level plans for VGI pilots pursuant to OP 14 during the March 16, 2021 VGI workshop. PG&E sought feedback on its pilot concepts through that workshop discussion and subsequent calls with stakeholders. On June 4, 2021, a second VGI pilots workshop was held to share updated pilot concepts with additional detail, and feedback was solicited via an online survey. Stakeholders supported the timely identification of gaps in each pilot concept and recommended alternative approaches that may better support the goals of D. 20-12-029. VGIC appreciates the IOUs’ good faith efforts and flexibility during the workshop process and development of the proposal in their Advice Letters.

In reviewing PG&E's Advice Letter, VGIC believes PG&E's proposed VGI pilots represent a significant step toward more widespread VGI products and services which can benefit both EV and non-EV customers alike. It is also an encouraging reflection of stakeholder feedback provided over the last few years. VGIC is pleased to see that PG&E remains open to various business models – an appropriate approach given the relatively nascent state of the market. Furthermore, the Advice Letter details proposals that are necessary and not duplicative of existing pilots. The proposed VGI pilots are generally consistent with the preliminary details shared previously by PG&E.

Based on these factors, VGIC largely supports the Advice Letter as filed and believes it is generally aligned with the Commission's intent per OPs 13, 14, and 15. Moreover, these pilots are an important stepping stone toward the suite of full-scale VGI programs needed to achieve the decarbonization goals embedded in Executive Order N-79-20, SB 350, ARB's in-progress 2022 Climate Change Scoping Plan, and SB 100. However, in this response VGIC highlights several critical areas that could benefit from additional clarifications or revisions before final implementation by PG&E. Specifically, VGIC recommends the following:

- The unallocated portions of the previously authorized VGI pilot budget should be applied to 1) support an independent analysis of the pilot results on behalf of the Commission, and/or 2) to supplement PG&E's proposed pilot program activities at an increased scale.
- PG&E's proposed VGI pilots should be approved expeditiously and coordinate on an ongoing basis with other policy forums to help mitigate California's pressing near- and mid-term resiliency needs and reliability concerns.
- VGIC is encouraged by PG&E's stated goal "to partner with as many technology providers as possible." PG&E should seek to institute a fair and competitive process to leverage pilot partners.
- PG&E should confirm that customers in proposed pilots #3 and #4 may opt-out of events or otherwise ensure their transportation needs are met.
- The proposed V2X LDV Residential and V2X MHDV Commercial pilots may create a gap for the V2X LDV commercial market. If not addressed in the implementation of PG&E's proposed VGI pilots, this gap should be considered as programs scale up.
- V2G Export Compensation should be explored in the VGI Pilots, for example through a dynamic export compensation rate modeled after PG&E's proposed Day Ahead Hourly Real Time Pricing rate.

VGIC believes these issues can be resolved through modest revisions to PG&E's Advice Letter and that most of the contents of the AL are ready for Commission approval. In considering PG&E's proposed approach, it is important for the Commission to recognize that the proposed pilots are not

intended to demonstrate the technical readiness of a specific VGI *technologies*. Many of the underlying technical issues are now well understood. Instead, PG&E’s proposals are geared towards piloting programmatic approaches for harnessing VGI technologies at a larger scale, including experimenting with customer incentive levels, marketing, education, outreach, and acquisition. The VGI pilots are notably an opportunity to explore coordination across the power and transportation sectors, and the control architecture needed to advance different business models for industry stakeholders, including technology providers, aggregators, service providers, and other vendors. With this in mind, VGIC stresses the criticality of ensuring any data and takeaways from the VGI pilots are accurately and fairly represented in interim and final reporting.

Finally, VGIC thus respectfully requests that implementation of VGI pilots not be unduly delayed due to the issues raised herein. VGIC offers its time and resources to Energy Division staff, Commissioners, PG&E, and other stakeholders to support addressing each issue in a timely manner.

II. DISCUSSION.

A. **The unallocated portions of the previously authorized VGI pilot budget should be applied to 1) support an independent analysis of the pilot results on behalf of the Commission, and/or 2) to supplement PG&E’s proposed pilot program activities at an increased scale.**

In reviewing the Advice Letter and SCE’s concurrent Advice Letter 4542-E *Request for Approval of Proposed Vehicle Grid Integration Pilots*, VGIC notes the total requested budget from the two IOUs is \$28.7 million. This is \$6.3 million less than the \$35 million authorized in OP 14 of the VGI Decision and is primarily the result of SDG&E’s choice to not submit an Advice Letter. During the development of these proposed pilots, VGIC expressed concerns over SDG&E’s preliminary pilot concept and recommended that the portion of funds assumed for SDG&E¹ should instead be repurposed. While SDG&E ultimately did follow our suggestion to not move forward with its pilot concept, the use of the remaining \$6.3 million in authorized pilot funds is yet to be determined.

VGIC recommends two potential uses for this unallocated funding. First, a portion of these funds could be used to support an independent consultant to evaluate the VGI pilots on behalf of the Commission. Second, the funding could be used to supplement PG&E’s current proposals to ensure they achieve sufficient scale to be meaningful. Both of these options are described below:

¹ D. 20-12-029, OP 14 states “The large electrical corporations shall identify any non-ratepayer potential funding sources and shall not request, in their combined applications, more than \$35 million.” In the March 16, 2021 and June 4, 2021 workshops, each IOU proposed VGI pilot budgets roughly proportionate to their load share. However, it is VGIC’s understanding that this was the preliminary assumed use and that funding need not necessarily be allocated according to load share.

1) Independent Evaluation of VGI Pilots

Both PG&E’s Advice Letter and SCE’s concurrent Advice Letter 4542-E explain that each VGI pilot will be reported on annually through the VGI reporting required by OP 1 of D. 20-12-029, and final reports on each VGI pilot will be produced upon pilot completion. The PG&E Advice Letter explains the need to collect data to inform cost-benefit analyses and highlights this as a primary objective for each pilot. PG&E lists several evaluation metrics for each pilot, including number of customers enrolled, customer attrition, influence of incentives on V2X purchasing decisions, incremental hardware and software costs of V2X, V2X customer revenue, value of V2X to the grid, benefits of each tested V2X application, and total cost of ownership (“TCO”) savings due to V2X. PG&E also notes that “before authorizing use of ratepayer funding to cover a long-term program of incentives, a detailed cost-effectiveness analysis is prudent in order to quantify the impact on ratepayers, utilities, customers and society.”²

VGIC is generally supportive of these data collection efforts and agrees that in the long-term, full-scale programs should demonstrate reasonable cost-effectiveness. As such, the results of the VGI pilots are of great significance to VGI stakeholders and indeed could impact the future availability of VGI as a critical tool for both managing costs and enhancing the reliability of California’s energy system.

The IOUs have expressed plans to coordinate on the development of an RFP for a third-party evaluator to assess IOUs’ VGI efforts pursuant to OP 23. While this appears to be a sensible approach, in addition to this, VGIC strongly recommends that the CPUC hire its own consultant to serve as an independent evaluator on behalf of other non-utility stakeholders. This would be similar in nature to how the Commission has approached the Distribution Investment Deferral Framework process.³ A share of the unallocated portion of the \$35 million in authorized VGI pilot funding could be used for this purpose. Furthermore, VGIC recommends that the third-party evaluation process include a Technical Review Committee that could help oversee the evaluation process conducted by the IOUs’ evaluator. This Committee could be open to participation by the IOUs, the CPUC’s hired consultant, and other key industry stakeholders.

This is especially critical with regards to any cost-benefit analysis done as part of this evaluation. For example, PG&E states, “If the cost-benefit analysis of bidirectional electric vehicles demonstrates benefits for both customers and the electricity grid, PG&E may recommend scaling the pilot to a full-scale utility program.”⁴ However, in the event that the IOUs’ evaluator determines that a pilot is not cost-effective or worth scaling into a larger program, then it is critical that other perspectives be included in the process. This is necessary to (a) verify the appropriateness of the

² Advice Letter. Section VI Evaluation of each pilot.

³ As part of the Distribution Investment Deferral Framework, the three major IOUs produce a Grid Needs Assessment (GNA) and a Distribution Deferral Opportunity Report (DDOR). An Independent Evaluator has access to the relevant grid data and runs their own simulations to validate the IOUs’ findings and provide additional feedback for the IOUs and non-utility stakeholders. See the Distribution Resource Planning proceeding R. 14-08-013.

⁴ Advice Letter. Pilot 1 – Section VI: Evaluation at 31.

evaluator’s methodology and findings, (b) ensure appropriate context is provided on any limitations of the pilots as they were executed, and (c) ensure the evaluation fully captures steps that could improve future cost effectiveness.

This Technical Review Committee structure would also have the added benefit of providing a forum to share preliminary data and technical information prior to the completion of each pilot, the thereby creating an opportunity to inform other relevant TE policy developments.⁵

2) Supplemental funding for PG&E’s proposed VGI Pilots

In addition to supporting the evaluation process, some of the remaining funds could be used to supplement PG&E’s proposed pilot budgets, thereby increasing the scale and level of effort that can be supported. VGIC believes that PG&E’s pilots are ambitious in the sense that they each attempt to tackle multiple objectives using a limited budget. Thus, additional funding may be useful to ensure that all of these objectives are met.

B. PG&E’s proposed VGI pilots should be approved expeditiously and coordinate on an ongoing basis with other policy forums to help mitigate California’s pressing near- and mid-term resiliency needs and reliability concerns.

Each proposed V2X Pilot is a promising candidate to be scaled to full program implementation in the near- and mid-term. Existing commercially available products and those that are anticipated to be available soon could significantly support both customer resilience by providing local backup power and/or system reliability by exporting energy during net load peak hours.⁶ Regarding backup power capabilities, VGIC notes that this is currently being incentivized for stationary storage through the SGIP program. However, EVs are likely to be able to provide this function at a relatively lower cost since the customer’s purchase of the battery system is already embedded into the purchase of an EV which serves another function (i.e. mobility). In addition, establishing V2X programs to enhance resiliency can help to reach customers that current SGIP funding does not reach or prioritize, thereby enhancing the overall customer acceptance and adoption of local resiliency solutions. In these ways, V2X programs intended to support resiliency will fill an important gap in the current marketplace, and can do so in the near-term based on product availability.

While IOU programs promoting V2X for resiliency applications will help drive customer adoption in the near-term, programs that promote other applications are also critical to supporting

⁵ For example, preliminary results from the VGI pilots could critically inform the development of transportation electrification plans, EV rate design, demand response portfolio applications, high DER OIR, microgrids and resiliency proceeding, streamlining interconnection of DERs proceeding, SGIP, NEM, and other DER policies.

⁶ Advice Letter at 11.

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the goals of SB 676 and establishing a more robust long-term market for VGI. Some of these applications, such as customer self-supply and greenhouse gas emissions benefits can and should be supported in the near- and long-term. This would place V2X on a level playing field with stationary energy storage, which receives technology incentives to promote customer self-supply and greenhouse gas emissions benefits.

Meanwhile, other V2X applications that support grid reliability, such as V2X exports to provide resource adequacy, likely require that more complex policy issues be addressed in the near-term to facilitate scale up in the long term. While VGIC is supportive of these applications being addressed through PG&E's proposed VGI pilots, we believe that progress in the relevant policy forums should continue in coordination with the VGI pilots, rather than wait for final pilot results before moving forward. For example, the resource adequacy ("RA") proceeding has recently seen stakeholder proposals on how to value DER exports within the RA framework. VGIC understands there may be outstanding questions related to the establishment of a qualifying capacity / export counting methodology as well as deliverability. Meanwhile, the recently issued "High DER OIR" (R. 21-06-017) will address critical grid architecture questions that will undoubtedly inform the future of VGI resources. The Energy Division's UNIDE framework proposal is another potential policy forum that may progress while the VGI pilots are underway. Given the timing of these planned policy developments, VGIC respectfully urges that the Commission expeditiously approve PG&E's VGI pilots and ensure that PG&E and stakeholders coordinate on an ongoing basis with other policy forums to help mitigate California's pressing near- and mid-term resiliency needs and reliability concerns.

C. VGIC is encouraged by PG&E's stated goal "to partner with as many technology providers as possible." PG&E should seek to institute a fair and competitive process to leverage pilot partners.

VGIC appreciates that PG&E coordinated with potential partners prior to the filing of the Advice Letter. We believe this reflects an earnest effort to collaborate with industry partners to advance VGI solutions as they exist today. Beyond the vendors that PG&E identifies, there are other VGIC members that would be eager to participate. VGIC would be eager to discuss options for how to identify and partner with other vendors, and offers itself as a resource to explore further. VGIC supports PG&E's intent to open pilot participation to the widest possible variety of potential vendors.

D. PG&E should confirm that customers in proposed pilots #3 and #4 may opt-out of events or otherwise ensure their transportation needs are met.

PG&E notes that customers in Pilot #1 and Pilot #2 will have the option to opt-out of events/participation to ensure their transportation needs are always met. VGIC agrees that customer should be offered this choice. However, Pilot #3 and Pilot #4 do not clarify that customers may opt out of individual events. VGIC recommends in that PG&E's implementation of all its proposed VGI pilots incorporate this customer perspective and ensure participants have the choice to not participate in an event or respond to a signal.

E. The proposed V2X LDV Residential and V2X MHDV Commercial pilots may create a gap for the V2X LDV commercial market. If not addressed in the implementation of PG&E's proposed VGI pilots, this gap should be considered as programs scale up.

As proposed, commercial customers would not be eligible for participation in the V2X Residential pilot. Meanwhile, the V2X Commercial pilot is "targeted at spurring the adoption of bidirectional medium- and heavy-duty vehicle ("MHDV") fleets through customer incentives."⁷ Notably, light-duty vehicles ("LDV") and LDV fleets that charge at commercial sites would not be eligible for either pilot, which could create a potential gap as pilots progress and inform program development. If not addressed in this pilot, this gap should be considered as programs scale up.

F. V2G Export Compensation should be explored in the VGI Pilots, for example through a dynamic export compensation rate modeled after PG&E's proposed Day Ahead Hourly Real Time Pricing rate.

VGIC notes that PG&E does not currently offer a clear pathway for V2G resources to be compensated for exported energy, despite the fact that V2G is now technically feasible due to recent reforms to the Rule 21 interconnection process.⁸ Since PG&E is proposing to focus on a variety of V2X pilots, VGIC believes that this presents a good opportunity to explore potential V2G compensation mechanisms. Among the potential compensation options, VGIC encourages PG&E to explore a dynamic export compensation rate similar with PG&E's recent DAHRTP pricing proposal.

III. CONCLUSION.

VGIC appreciates the opportunity to submit this response to PG&E's Advice Letter. We look forward to further collaboration with the Commission and stakeholders on this initiative.

⁷ Advice Letter at 2.

⁸ See Decision 20-09-035 in R. 17-07-007.

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Respectfully submitted,

/s/ Edward Burgess

Edward Burgess

Senior Policy Director

VEHICLE-GRID INTEGRATION COUNCIL

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Service list R.18-12-006