



Order Instituting Rulemaking to Continue the Development of Rates and Infrastructure for Vehicle Electrification.

Rulemaking 18-12-006 (Filed December 13, 2018)

OPENING COMMENTS OF THE VEHICLE-GRID INTEGRATION COUNCIL ON THE TRANSPORTATION ELECTRIFICATION FRAMEWORK (SECTIONS 2, 3.1, 3.2, 3.3, 4, AND 5)

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Dated: March 6, 2020

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking to Continue the Development of Rates and Infrastructure for Vehicle Electrification.

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In accordance with Rules of Practice and Procedure of the California Public Utilities

Commission ("Commission"), the Vehicle-Grid Integration Council ("VGIC")¹ hereby submits

its opening comments on certain sections of the draft Transportation Electrification Framework

("Draft TEF") in Rulemakings ("R.") 18-12-006 on February 25, 2020. Pursuant to

Administrative Law Judge's Ruling Adding Staff Proposal for a Draft Transportation

Electrification Framework to the Record and Inviting Party Comments ("Ruling") and E-mail

Ruling Setting Updated Schedule for Party Comment on the Draft Transportation Electrification

Framework, issued by Administrative Law Judge Patrick Doherty on February 3, 2020 and

February 14, 2020, respectively, VGIC timely files these comments on March 6, 2020 in R. 18
12-006. VGIC was granted party status in this proceeding on January 28, 2020.

¹ VGIC member companies and supporters include American Honda Motor Co., Inc., Enel X North America, Inc., Fiat Chrysler Automobiles, Ford Motor Company, General Motors Company, and Nuvve Corporation. The views expressed in these Comments are those of VGIC, and do not necessarily reflect the views of all of the individual VGIC member companies or supporters. (https://www.vgicouncil.org/).

I. INTRODUCTION.

A. Overview of VGIC

VGIC is a 501(c)6 membership-based advocacy group committed to advancing the role of electric vehicles ("EVs") and vehicle-grid integration ("VGI") through policy development, education, outreach, and research. VGIC supports the transition to a decarbonized transportation and electric sector by ensuring the value from EV deployments and flexible EV charging and discharging is recognized and compensated in support of achieving a more reliable, affordable, and efficient electric grid.

B. Organization of VGIC's Comments

VGIC's comments are organized as follows:

- First, VGIC raises some fundamental concerns with the Draft TEF in relation to the
 specific timeline and budget constraints proposed. These concerns align with VGIC's
 support of the Motion of the Joint Parties to Stay the Draft TEF filed concurrently in this
 proceeding.
- Second, VGIC addresses specific questions and recommendations from Sections 3, 4,
 and 5 of the Draft TEF that were posed by the Commission. In responding to these
 questions, VGIC provides several recommendations for the Commission's consideration.
- Finally, VGIC provides a summary of recommendations from its answers to the questions.

II. Fundamental Concerns with the Draft TEF Timeline and Budget Constraints.

A. VGIC supports the Commission's efforts to establish a long-term TE framework

VGIC understands the Commission's goal of developing a long-term and sustainable framework

to better prioritize and evaluate the investor owned utilities' ("IOUs") transportation

electrification ("TE") programs. In recent years, the Commission has authorized over one billion dollars in ratepayer funds for TE investments, with another one billion currently pending review. These TE proposals and related programs have been made on an *ad hoc*, case-by-case basis. This has created significant uncertainty for the EV industry, the IOUs, and California ratepayers. As California continues to ramp up its TE efforts to meet decarbonization goals, a more holistic and streamlined framework for evaluation and authorization can provide greater certainty to the industry over the long run, which is a concept the VGIC broadly supports. The Draft TEF makes progress towards this goal of establishing a holistic framework for California's TE programs over the long term. However, VGIC believes the Draft TEF has significant shortcomings, particularly regarding the interim period between now and when the long-term framework is in full effect. Additionally, the long-term framework could also be improved, as further explained in Section III below.

that will unnecessarily delay progress towards California's decarbonization goals

VGIC is concerned that the Draft TEF would lead to a protracted period of very limited TE investment over the next several years. This is due to the significant time it will take to accomplish the following: 1) adopt the final TEF, 2) develop TE Plans ("TEPs") under the adopted framework, 3) review and approve TEPs, 4) develop TE program applications under the approved TEP, 5) review and approve TE program applications and 6) implement approved TE programs, before any significant investments are made. Not only is this proposed timeline considerably prolonged, but it is compounded by the strict limitations placed on any near-term actions that can be taken in the form of the \$20 million budget cap, the limited number of authorized near-term actions, and the inability to put forward additional ad hoc TE plans during

the interim period. A significant delay in any one of the steps listed above would likely mean fewer EVs on the road. Not only would the Draft TEF delay new TE infrastructure, but it could also needlessly restrict the ability to leverage existing TE infrastructure to provide near-term grid benefits through scaled up VGI programs. This ultimately means there will be fewer opportunities for VGIC members and supporters to implement new business models, develop new technologies, or realize customer benefits associated with VGI related activities.

Given the prolonged timeline to implement the first TEPs and limitations on near-term investment priorities, the Commission and stakeholders are unable to take meaningful, timely action to deploy the required TE solutions. In contrast, the *ad hoc* approach that has been used to date, has led to meaningful near-term actions and investments, despite lacking a holistic strategy to meet State TE goals. While the *ad hoc* approach had shortcomings, it also had greater flexibility to ensure California was on the path towards meeting its overarching policy goals.

C. Greater flexibility for near-term TE actions is critical to the uninterrupted success of the growing EV industry in California

To ensure that the EV industry continues the growth necessary to meet California's decarbonization goals, the VGIC supports the Motion of Joint Parties to Stay the Draft TEF. VGIC would be appreciate a meaningful opportunity for stakeholders to propose alternative frameworks to the TEF. We believe this approach to allow alternative proposals is a sensible path towards alleviating the problematic limitations on timeline and near-term budget in the Draft TEF.

In the spirt of identifying alternative framework proposals, VGIC provides some recommendations in these comments for the Commission's consideration of potential modifications to the Draft TEF which would allow more flexibility in the interim period between

now and when the TEF framework is in full effect. These modifications could include the following:

- Allow an expanded list of approved near-term investment options,
- Remove the per-IOU budgetary cap on near-term investments, and;
- Allow for additional ad hoc TE programs to be proposed and reviewed until the final
 TEF is adopted, under the current rules and guidance used to date

III. Responses to Commission Questions and Recommendations for TEF Sections 3 (excluding Section 3.4), 4 and 5.

In this section, VGIC provides responses to the specific questions and recommendations posed in the Ruling related to the following sections of the TEF:

- Section 3 (excluding Section 3.4): IOU TEP Development,
- Section 4: IOU Roles, and
- Section 5: Near-term Investment Priorities.
- Section 8: Technology and Standards

A. RESPONSE TO QUESTIONS ON SECTION 3: IOU TEP DEVELOPMENT.

Section 3.1, Question 2: What additional guidance is needed to inform how existing planning processes for IOUs and regulatory development efforts at other State agencies should be leveraged to develop TEPs?

The Draft TEF recommends the IOUs' ICA maps, an effort under the DRP proceeding (R.14-18-013), be used to develop infrastructure targets and proposed budgets in the TEPs by identifying areas where TE load could be added without triggering distribution upgrades. The

Draft TEF also recommends the ICA maps be used to identify areas where "load management solutions such as on-site renewable generation and storage facilities" can be used to defer system upgrades.² VGIC supports both recommended uses of the ICA to identify locational opportunities for load management solutions to be implemented and areas where there is available capacity for TE infrastructure. To the extent the ICA is used to identify mitigation options for TE load, VGIC also recommends the Commission include flexible charging and – as the market develops – discharging capabilities in the set of load management solutions that IOUs should consider. Moreover, VGIC cautions that the inherent flexibility of charging and discharging is one reason why the ICA maps should not be overly prescriptive in determining where TE load can or cannot be added (so long as that capability is adequately leveraged).

Section 3.1/3.2/3.3, Recommendation 6: Provide full TEP updates every four years, starting in 2026.

VGIC believes that a TEP update period of four years does not appropriately reflect the pace of TE-related policy and market development and that a more frequent update cycle is more appropriate. This is especially true for the VGI-related components of TE programs, which may have the ability to leverage existing EVs and EVSE assets to provide new services on a compressed timeline that is unrelated to TE infrastructure development.³ The pace at which new VGI solutions are expected to emerge warrants a shorter gap between TEP updates and related program implementation. VGIC recommends the Commission consider a period of two-years

² Draft TEF at 22.

³ Learning from past TE programs and pilots, a TE program's physical assets are likely to result in longer lead times than the non-infrastructure components.

between TEP updates to better reflect the pace of the challenges and opportunities the TEF intends to address. For VGI components, even more frequent updates may be warranted.

Additionally, certain distinct milestones, such as the adoption of an interconnection pathway for V2G alternative current ("V2G-AC") systems, may also prompt the need for a TEP update. Added flexibility is needed within the TEP update schedule for TEPs to account for these types of "threshold" developments or other milestones that unlock new EV markets and services. VGIC recommends that the Commission consider the merits of a mechanism for certain distinct milestones to trigger an "out of cycle" TEP update.

B. RESPONSE TO QUESTIONS ON SECTION 4: IOU ROLES.

Section 4, Question 1: Do you agree that the IOUs' TEPs should evaluate opportunities to address each of the barriers identified in Table 3? If not, what barriers should be excluded, or are missing, and why?

VGIC agrees that the IOUs' TEPs should evaluate opportunities to address barriers, such as those identified in Table 3. VGIC supports the consideration of barriers related to industry structure and the role of the IOU in coordinating "different types of market actors such as automakers and EVSPs to provide services such as VGI." ⁴ VGIC believes the IOUs have an important role in current and future VGI market development efforts. However, VGIC notes that it is not the sole responsibility of the IOUs alone to address certain barriers identified in Table 3. For example, regarding "Uncertain or Unfavorable Standards" market actors are currently awaiting direction from the Commission on next steps resulting from the V2G-AC Interconnection Technical Sub-Group Report filed in this proceeding and in R.17-07-007. The

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⁴ Draft TEF at 40.

lack of current IOU and industry stakeholder alignment around technical standards remains a key barrier to VGI market development.

VGIC also agrees that electric rate design is an area where IOUs can play a strong role to address market demand barriers. However, the development of enhanced rates for EVs can benefit from substantial input from industry stakeholders.

Regarding barriers that may be missing from Table 3, VGIC notes that the VGI Working Group established as part of this proceeding is currently working on developing a set of policy recommendations that will address barriers to specific VGI use cases. Some of these recommendations are likely to include a role for IOUs. Once this list is fully developed by the Working Group it could easily be used to supplement the barriers identified in Table 3.

C. RESPONSE TO QUESTIONS ON SECTION 5: NEAR-TERM INVESTMENT PRIORITIES.

<u>Section 5, Question 1:</u> Should the IOUs' pre-TEP program proposals be limited to these identified priority areas? Why or why not?

No, the IOUs' pre-TEP program proposals should not be limited to the small subset of areas identified in the Draft TEF. As explained above in Section II of these comments, additional near-term actions are needed to ensure alignment with the state's policy goals and to continue to develop the EV and VGI markets. Moreover, the execution of TE programs alone does not constitute success in achieving state TE and decarbonization goals, and additional time to make program adjustments may be needed to match customer response.

The Draft TEF puts forth an example timeline that would set the first full TE program applications for Q1 2023, with an option for IOUs to delay their first full TE program application

to Q1 2025. This suggests that robust TE investments (and corresponding VGI market opportunities) are unlikely to emerge until at least 2024 and might be delayed until 2026.⁵ If this is the possible timeline the PUC is contemplating for investment under the TEF, then there needs to significant alternative avenues for near-term investment, beyond the few options suggested in the Draft TEF. Notably, several VGIC members who are automotive manufacturers' ("OEMs") have product development cycles for EV hardware and software components related to VGI use cases tend range from three to five years. Some of these products that are being developed now may face the prospect of limited market opportunity if the necessary TE investments are not ready for 5-6 years. As such, the OEMs may have developed manufacturing lines that bcome "stranded assets."

Any delay in the development of TE programs and infrastructure is further exacerbated by technology lock-in associated with new vehicles, as the average light-duty vehicle ("LDV") life is 11.8 years. VGIC is concerned that limiting the scope of what IOUs may include in their pre-TEP program proposals would delay and hinder real opportunity for sectors and use cases not identified as priority to contribute to the decarbonization of California's transportation and electricity sectors.

Not only should TE be expedited as a powerful tool for decarbonization, but accelerated deployment is warranted as a direct benefit to *all* utility customers since EV charging can also result in downward pressure on rates. The increase in kWh consumption provides a larger

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⁵ Historically, the least amount of time between an initial EV program or TE application and an adopted decision is about twelve months. PG&E's Commercial EV Rate (A.18-11-003) was adopted a few weeks short of one full year after the initial application. Pilot-scale Priority Review Projects (PRP) were adopted for all three IOUs' TE Applications (A.17-01-020, A.17-01-021, and A.17-01-022) after about twelve months. The Standard Review projects were adopted roughly 18 months following the initial TE application filing. PG&E's Empower EV program (A.18-07-021) and SCE's Charge Ready program (A.14-10-014) were both adopted about 18 months after filing.

⁶ IHS Markit, *Average Age of Cars and Light Trucks in U.S. Rises Again in 2019 to 11.8 Years* (June 27, 2019) https://news.ihsmarkit.com/prviewer/release only/slug/automotive-average-age-cars-and-light-trucks-us-rises-again-2019-118-years-ihs-markit-

number of sales over which to distribute utility fixed costs. This benefit can be further bolstered by enabling VGI services. This downward pressure on rates is a benefit that will not be realized unless deployment of TE, EVs, and VGI programs reach large-scale implementation.

While the TEF will establish important guidance in the long term, the Commission does already have processes and mechanisms in place to review TE program proposals for reasonableness. Previous TE applications, while *ad hoc* in nature, have still been scrutinized through a full CPUC rate setting process (i.e. including evidentiary hearings), and to ensure that the investment decisions are prudent and reflect an equitable balance of stakeholder interests.

VGIC recommends the Commission not necessarily limit the IOUs' pre-TEP program proposals to the priority areas identified in the Draft TEF. Specifically, VGIC strongly disagrees with the Energy Division's recommendation that "the IOUs should not propose new investment programs where the market shows signs of private sector engagement, such as single-family home residential charging stations and workplace L1 or L2 charging deployment." ⁷ The implication therefore is that TE programs addressing single-family home residential charging and workplace charging deployment will not be implemented until the IOUs' first TE program applications are implemented, which as previously discussed will not occur before 2023.⁸

Given the long lead times associated with TE programs resulting from the Draft TEF, the risk of technology lock-in, the cost of deferring rate reduction through increased kWh usage and VGI applications, and the availability of existing Commission processes, VGIC supports a more open approach to pre-TEP program proposals.

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⁷ Draft TEF at 44.

⁸ Draft TEF at 26.

<u>Section 5, Question 2:</u> If not, identify any other program priorities that should be considered appropriate for pre-TEP programs and provide detailed information about why the investment would be "no-regrets".

As discussed in our response to Section 5, Question 1 above, VGIC does not support *limiting* pre-TEP program proposals to identified priority areas. However, VGIC believes that a list of priority areas could help to guide and expedite pre-TEP proposals. We would like to identify several VGI use cases that are currently excluded from the Draft TEF's near-term investment priorities list.

Recent initiatives by the Commission have demonstrated meaningful progress in alleviating barriers and developing the market for VGI. The VGI Working Group will answer several questions posed by the Commission, including the question "what VGI use cases can provide value now, and how can that value be captured?" ⁹ The answer to this and the other questions in the scope of the VGI Working Group should inform utility TEPs, as recommended in the Draft TEF. ¹⁰ Specifically, the working group is currently identifying areas where TE programs may be needed to enable near-term VGI use cases, or those that can provide value now. VGIC recommends that this subset of VGI use cases be considered in the list of priority areas for near term investments.

Section 5, Question 3: Is \$20 million per IOU an appropriate budgetary cap for pre-TEP programs? Why or why not?

No, \$20 million per IOU is not an appropriate budgetary cap for pre-TEP programs. As discussed in our response to Section 5, Question 1, limiting pre-TEP programs in scope will

⁹ Assigned Commissioner's Scoping Memo and Ruling at 11.

¹⁰ Draft TEF at 138.

unnecessarily hinder market development and be present barriers to meeting California's TE and decarbonization goals in a cost-effective manner. The same supporting argument applies to raising the budgetary cap. Limitations to the budget for pre-TEP programs will delay the timeframe for TE goals, risk technology lock-in, and sacrifice an opportunity to place downward pressure on rates through VGI. There exist previously developed Commission processes that can be leveraged to determine reasonableness of pre-TEP programs.

Previously approved TE programs, such as SDG&E Power Your Drive and SCE Charge Ready, have addressed the pilot-scale implementation, specifically for the (LDV) sector. Meeting state policy goals will require a transition from pilot-scale programs to large-scale implementation, and VGIC believes that LDV applications have reached a point of maturity where this implementation is justified. Given \$4 million as the reference point for pilot programs, the proposed \$20 million could fund five pilot programs. In VGIC's view this is very limiting. For example, the VGI Working Group recently identified several hundred use cases that could provide value and may warrant consideration for pilot programs. VGIC is concerned that the proposed \$20 million cap is wholly insufficient to fund the scale of deployment needed, specifically for sectors mature enough for large-scale deployment, such as LDV.

VGIC recommends the Commission eliminate the strict and arbitrary budgetary cap for pre-TEP programs.

Section 5.2, Question 1: Should the IOUs prioritize projects that will test and validate resiliency strategies that utilize EVs as grid resources and ensure EV drivers have adequate access to charging options during power outages? If yes, how should the IOUs design their pilot(s)? What sector(s)

should the pilot(s) target? What use cases should the IOUs prioritize in their pilot(s)?

VGIC agrees that IOUs should prioritize projects that will test and validate resiliency strategies that utilize EVs as grid resources. Pilot programs that focus on enabling EVs to provide backup power in a resiliency event, such as a Public Safety Power Shutoff ("PSPS"), are a near-term priority for several stakeholders, as expressed in the Microgrid and Resiliency Strategies proceeding (R.19-09-009) by California Energy Storage Alliance ("CESA"), Connect California, Pacific Gas and Electric ("PG&E"), and VGIC.¹¹ Our comments in that proceeding indicate that the current state of technology, including capabilities of smart meters and available EVs, calls for consideration of vehicle-to-load ("V2L") backup power solutions. ¹² Solutions that use EVs as backup power during a PSPS event warrants serious consideration as a near-term priority given the high potential to provide benefits to customers.

At the Interconnection Discussion Forum held on December 16, 2019, CESA and Connect California presented a proposal to use smart meters to intentionally island customers and allow devices to provide backup power with only one piece of additional equipment required. A pilot program could be modeled after this proposal to leverage existing advanced metering infrastructure ("AMI"). A pilot program modeled after this proposal would require an amount of investment less than \$4 million, complying with the proposed definition of a pilot program. Program costs could go towards purchasing and installing transfer switches, which

¹¹ Comments of CESA on Track 1 Microgrid and Resiliency Strategies Staff Proposal (January 30, 2020) in R.19-09-009 at 11, Comments of Connect California on Track 1 Microgrid and Resiliency Strategies Staff Proposal (January 30, 2020) in R.19-09-009 at 7-8, Comments of PG&E on Track 1 Microgrid and Resiliency Strategies Staff Proposal (January 30, 2020) in R.19-09-009 at 9 and 12-13, and Comments of VGIC on Track 1 Microgrid and Resiliency Strategies Staff Proposal (January 30, 2020) in R.19-09-009 at 3.

¹² Comments of VGIC on Track 1 Microgrid and Resiliency Strategies Staff Proposal (January 30, 2020) in R.19-09-009 at 3.

¹³ Track 1 Microgrid and Resiliency Strategies Staff Proposal (January 21, 2020) in R.19-09-009 at 10.

¹⁴ Draft TEF at 17.

are UL-listed meter socket mounted devices. The program could target sectors where there is demand for backup power to meet on-site load during outages, such as residential customers in single family homes. The IOUs could conduct marketing, education, and outreach to garner interest for the program, install transfer switches at customer sites, enroll customers in the program, notify them ahead of a PSPS event, and intentionally island these customers remotely.

Section 5, Recommendation 1(d): [Energy Division recommends CPUC direct IOUs to] Coordinate with other IOU resiliency efforts, including but not limited to, R.19-09-009, R.18-12-005, and R.12-11-005.

VGIC supports this recommendation and believes that coordination across existing CPUC initiatives is central to achieving the goals of the TEF and of resiliency initiatives. As discussed in our response to Section 5.2, Question 1(a), VGIC recommends a pilot program to use EVs as V2L backup power. V2G backup power is another way that EVs can contribute to IOU resiliency efforts, for example in a microgrid application. The V2G-AC Interconnection Technical Sub-Group Report identified several potential next steps that would alleviate barriers to V2G applications, including those with potentially high value in the context of resiliency. For example, industry representatives are currently engaged in addressing one identified action item, updates to SAE J3072. To that end, VGIC supports the IOUs' continued coordination with R.17-07-007 to enable V2G-AC interconnection pathways, a collaboration which has the potential to unlock immense resiliency benefit.

D. Initial comments on Section 8: Technology and Standards

VGIC recognizes that the Commission will be seeking additional comments on Technology and

Standards later this year and intends to provide more detailed input on this matter at the

appropriate time. However, as an initial high-level concern, VGIC does not recommend that the TEF select or mandate any specific communications protocols at this time, and rather allow the market to determine which protocols are used.

V. Summary of Recommendations

In responding to the questions above, VGIC proposes several recommendations, which can be summarized as followed:

Overarching recommendations:

• The Final TEF should include more flexibility during the interim period between now and when the framework is in full effect. To this end, the VGIC supports the Motion of the Joint Parties, filed concurrently in this docket, requesting that the Commission allow parties to propose alternative TEFs, hold a meeting to develop consensus around objectives and scope of the TEF, and set a comment period on the alternative proposals.

Section 3

- To the extent the Integration Capacity Analysis ("ICA") and other existing processes are used to develop their TEPs, they should include VGI solutions to enable greater TE load.
- The duration between TEP updates should be shortened to accurately reflect the pace of TE market development, particularly for non-infrastructure activities (such as certain VGI applications).

Section 4

• VGIC supports several of the IOU roles identified in Table 3 of the Draft TEF, including coordinating with market actors to enable VGI services, providing appropriate electric rates, and identifying standards needed to support VGI.

Section 5

• The IOUs' pre-TEP proposals should not be limited to the identified priority areas, as this risks imposing high societal costs, deferring opportunity to reduce

customer rates, and significant misalignment with state TE and broader decarbonization goals.

 A list of priority areas could guide and help expedite pre-TEP proposals, and this list should incorporate ongoing initiatives to identify and develop markets for VGI use cases.

• The \$20 million budgetary cap on pre-TEP proposals is inappropriate since it restricts large-scale implementation of TE programs in the near-term; instead, the Commission should consider eliminating the strict and arbitrary budgetary cap to meaningfully support California's TE and broader decarbonization goals.

• VGIC recommends one possible approach to a pilot program enabling EVs to provide backup power in resiliency use cases.

 VGIC supports the recommendation that IOUs should coordinate with proceedings relevant to EVs and resiliency when developing pre-TEP plans; to the extent possible, IOUs should also coordinate with non-Commission efforts essential to scaling VGI for resiliency applications.

V. CONCLUSION.

VGIC appreciates the opportunity to submit these opening comments on the TEP development, IOU roles, and near-term investment priorities sections of the Draft TEF. We look forward to further collaboration with the Commission and stakeholders on this initiative.

Respectfully submitted,

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