

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

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

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

**REPLY COMMENTS OF THE VEHICLE-GRID INTEGRATION COUNCIL ON THE  
TRANSPORTATION ELECTRIFICATION FRAMEWORK (SECTIONS 11.1 AND 11.2)**

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TRANSPORTATION ELECTRIFICATION FRAMEWORK (SECTIONS 11.1 AND 11.2)**

In accordance with Rules of Practice and Procedure of the California Public Utilities Commission (“Commission”), the Vehicle-Grid Integration Council<sup>1</sup> (“VGIC”) hereby submits these comments on the *Administrative Law Judge’s Ruling Adding Staff Proposal for a Draft Transportation Electrification Framework to the Record and Inviting Party Comments* issued by ALJ Patrick Doherty on February 3, 2020. Pursuant to *Email Ruling Resetting Procedural Schedule for Comments on Transportation Electrification Framework Sections* issued by ALJ Sasha Goldberg on August 4, 2020, VGIC timely files these reply comments on Sections 6, 11.1, and 11.2 of the Draft Transportation Electrification Framework on September 4, 2020.

In opening comments, VGIC referenced its Joint Comments on VGI Issues which introduced the concept of a VGI Portfolio and gave a brief description of several portfolio

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<sup>1</sup> VGIC member companies and supporters include American Honda Motor Co., Inc., Connect California LLC, Enel X North America, Inc., Fiat Chrysler Automobiles, Ford Motor Company, General Motors Company, Nissan North America, Inc., Nuvve Corporation, and Toyota Motor North America, Inc. 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/>).

elements. VGIC would like to clarify a few aspects of these elements of its proposed Model VGI Portfolio.<sup>2</sup>

### 1. Priorities and Process

VGIC recognizes that the Commission and Energy Division Staff may have limited time and resources to take on major new initiatives within the DRIVE OIR at this juncture, and that a comprehensive VGI Portfolio with many new elements may present a challenge in that regard. As such, we recommend the Commission prioritize certain elements of the proposed VGI portfolio to be addressed in the near-term within the DRIVE OIR, while recognizing that some of the proposed elements of the Portfolio can be added at a later date, or simultaneously addressed through parallel proceedings. VGIC suggests that the priority portfolio elements for near-term DRIVE OIR consideration should include: (1) Customer acquisition/participation incentives, with an emphasis on upstream incentives; (2) Active/Automated Load Management Tariff<sup>3</sup> for Distribution Upgrade Deferral<sup>4</sup>; (3) EV Capacity for Resource Adequacy; and (4) V2G Export Bill Credits.

VGIC believes these represent urgent and important VGI strategies that are also potentially novel and thus suitable for development through the DRIVE OIR. Note that VGIC also views support for resiliency programs as a major priority at this time, and we continue to advocate for VGI solutions in the Microgrids and Self Generation Incentive Program (“SGIP”) proceedings. Additionally, several ongoing ratemaking proceedings are considering EV-specific

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<sup>2</sup> *Joint Comments of the Vehicle-Grid Integration Council, Enel X North America, Inc. , Advanced Energy Economy, California Energy Storage Alliance, Chargepoint, Inc., Environmental Defense Fund, Greenlots, Natural Resources Defense Council, and Siemens on Email Ruling Seeking Party Comment on Vehicle-Grid Integration Issues*

<sup>3</sup> Note that while this is a priority for VGIC, we have not added any additional comments in this filing.

<sup>4</sup> See, for example, *Joint Comments of Enel X and Nuvve on TEF Technology and Standards* and *Comments of VGIC on TEF Technology and Standards*

or tech-agnostic EV-applicable rate structures and are likely to unfold independently of the DRIVE OIR and TEF. These are examples where a VGI Portfolio could reference and incorporate programs, policies, and funding sources tied to other proceedings, while still providing a comprehensive overview of all VGI-related efforts, both those occurring through these parallel efforts and any new elements developed within the DRIVE proceeding.

## 2. Total VGI Portfolio Budget

In Opening Comments, VGIC referred to an illustrative VGIC portfolio but did not specify any funding levels for this. VGIC believes that as an initial approximation for planning purposes, an appropriate budget for the overall VGI Portfolio could be on the order of 10-15% of any underlying TE plan. However, VGIC cautions that this should be considered *additive* to the non-VGI components of the TE plan, rather than seen as a replacement for critical investments in TE infrastructure. For example, if an existing TE plan budget were \$400 million, this could be supplemented with a standalone VGI Portfolio budget of \$40 million over the same period. VGIC also notes that current TE planning approaches include meaningful budget set asides for customer ME&O. Some of this ME&O set-aside amount could overlap and substitute for a portion of the VGI Portfolio budget, thereby reducing the overall increase in upfront ratepayer costs associated with a VGI portfolio. However, there is still a need for non-VGI-related ME&O. Finally, VGIC notes that several of the priority elements identified above are designed to be “revenue neutral” and may require some upfront investment, but are intended to provide net savings to ratepayers over time. If VGI Portfolio budgets were to reflect the net revenue impacts of these components, then the VGI Portfolio budget would appear to be significantly smaller.

## 3. Customer Acquisition/Participation – Upstream Incentives (priority for DRIVE OIR)

Several parties have observed that the VGI WG efforts significantly lacked focus on customer experience of EV owners, drivers, or fleet managers. VGIC believes it is critical to address the potential barriers to customer participation in VGI rates, programs, and market opportunities. One tool for addressing this is an “upstream” incentive for customer acquisition/participation. While many structures could be envisioned, this could take the form of a direct payment to OEMs/EVSPs who are successfully able to: (i) Support enrollment in EV rates and VGI programs, or (ii) Support and administer successful ongoing participation in EV rates and VGI programs.<sup>5</sup>

The upstream incentive could be administered in several tiers to encourage both initial enrollment as well as sustained and successful ongoing participation. It can also continuously evolve to support the array of current and future VGI strategies and use cases. A base incentive level could be provided to OEMs/EVSPs for enrolling EV owners in an EV rate or VGI program. As VGI strategies and programs grow in both complexity and value to the grid, they could be offered additional tiers of incentives for enrollment/participation of EV owners in those incremental programs. For example, an automotive OEM could work to sign an EV owner up for an EV rate by communicating directly to an EV owner through a mobile app or vehicle display in exchange for a one-time rebate. From the EV owner’s perspective, they have been informed of the opportunity to save charging costs by responding to the EV rate or participating in the VGI program. Additional incentive tiers could then be reserved for OEMs/EVSPs that directly engage EV owners to opt into automated charging programs in response to price signals

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<sup>5</sup> Research on customer response to time-based rates supports a focus on customer enrollment and behavior. See *Customer Acceptance, Retention, and Response to Time-Based Rates from the Consumer Behavior Studies*, U.S. Department of Energy, Electricity Delivery & Energy Reliability, November 2016 [https://www.energy.gov/sites/prod/files/2016/12/f34/CBS\\_Final\\_Program\\_Impact\\_Report\\_Draft\\_20161101\\_0.pdf](https://www.energy.gov/sites/prod/files/2016/12/f34/CBS_Final_Program_Impact_Report_Draft_20161101_0.pdf)

and/or specific VGI program parameters. These actions could be administered “behind the scenes” by the OEM/EVSP subject to the owner’s range or state of charge preference.

A separate category of incentive could be focused on continued participation to prevent customer attrition and could be relatively modest if there are meaningful price signals linked to actual provision of VGI services. In cases where there are not meaningful price signals, incentives could be tied to performance with greater incentive levels tied to better performance (although still “behind the scenes” from the EV owner perspective). For the EV owner, the OEM/EVSP-managed charging/discharging can lower charging costs “automatically” with minimal engagement on their part. Some payments to OEM/EVSPs could also be reserved for enrollment and participation in increasingly more advanced VGI use cases, including V2G, demand response, ancillary services, and so on, including direct wholesale market participation. This would not preclude OEM/EVSP providers from recruiting and retaining customers through other means, but simply offers a reward for companies that are successful in doing so.

Notably, this upstream incentive model would capitalize on the combined centuries of experience that OEMs/EVSPs have in marketing and engaging directly with customers in a competitive environment. In opening comments *Attachment A*, SCE included data highlighting that OEMs are overwhelmingly the primary channel for customers seeking information on EVs, as well as the primary channel for information on incentives. Furthermore, SCE’s findings state “most (94%) customers feel that the automotive companies should be responsible for advertising related to EVs.”<sup>6</sup> This evidence strongly supports an upstream incentive model to meet customer needs and expectations for the OEMs’ role in ME&O. By allowing these industry participants to

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<sup>6</sup> *Southern California Edison Company’s (U 338-E) Opening Comments on Equity, VGI, and ME&O (Sections 6, 11.1, and 11.2) – Attachment A “Southern California Edison EV Awareness and Advertising Online Panel Research” at 2-4.*

bridge the gap between the complex array of rates/programs and the EV owner/operator, the customer experience will be met and made simpler, clearer, and less demanding and less dependent on inherently limited IOU ME&O activities.

An upstream VGI incentive would also directly support broader TE goals by incentivizing OEMs/EVSPs to expand their EV advertising and marketing efforts. Additionally, these payments could be structured to ensure EV customers also receive some portion of direct benefits from participation. This virtuous cycle will scale the market and grid, ratepayer, and environmental benefits from widespread VGI and TE.

#### 4. Workplace Charging

In Opening Comments (referencing Joint Comments), VGIC briefly described a VGI Portfolio element related to incentives for Workplace Charging. VGIC believes a concerted effort on workplace charging could be of value to ratepayers if it can 1) aid in absorbing excess day-time solar generation and b) shift charging *away* from the evening peak, thereby minimizing resource adequacy capacity needs. VGIC is also aware that TE Plans are likely to contain (and already do) workplace charger EVSE investments. However, these investments do not guarantee utilization that maximizes day-time charging. As such, incremental incentives to EVs, EVSPs, and/or site hosts may be warranted to encourage this behavior and build mid-day charging load through VGI, whether EVSE- or EV-based, L2 or L1. These incentives need not be designed to cover the full cost of a new charger. VGIC would be eager to work with ED staff to more precisely quantify the grid value of workplace charging and to identify the appropriate incentive levels, mechanisms, and performance criteria needed to fill the workplace charging gap. Greater access to workplace charging may significantly benefit EV drivers residing in multi-unit dwellings,

older homes requiring significant electrical panel upgrades, and disadvantaged communities which may not have access to L2 or L1 charging.

5. EV Capacity for Resource Adequacy (priority for DRIVE OIR)

In Opening Comments (referencing Joint Comments), VGIC briefly described a VGI Portfolio element related to Capacity Deferral, noting that there are both existing and possible new capacity-oriented programs that EVs could participate in (including Demand Response).

Considering the recent August 2020 heat wave blackouts, VGIC believes the Commission should accelerate procurement of a wide variety of Resource Adequacy capacity, including capacity from EVs. Assuming a 1.5 million LDV population by 2025,<sup>7</sup> an average EV/EVSE power rating of 10 kW,<sup>8</sup> and a modest 5% participation rate in a program/tariff intended to provide RA capacity during a grid reliability event, VGIC estimates that EVs existing in 2025 could provide over 750 MW of capacity – a significant contribution to California’s urgent RA needs. This estimated capacity value is doubled (to 1,500 MW) if vehicles are also encouraged to discharge during peak times. Note this estimate does not include the capacity of medium- and heavy-duty vehicles, which have a considerably higher average battery energy capacity than LDVs.

VGIC would be eager to work with ED Staff to estimate the capacity potential of new or existing EVs over a 5-10 year time horizon. We recommend applying the widely used EVI-Pro tool to better pinpoint the amount of VGI capacity available under different EVSE/EV deployment scenarios. To the extent a new EV-specific capacity program is implemented as part of a VGI Portfolio, VGIC recommends consideration of a new customer incentive approach that

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<sup>7</sup> Under Executive Order B-48-18

<sup>8</sup> Assumes a mix of L1, L2, and DCFC chargers. According to InsideEVs *Plug-in EV Sales Scorecard*, the most popular selling ZEV models in 2019 were Tesla Model 3, Toyota Prius Prime, Tesla Model X, and Chevrolet Bolt EV. A rough average of available battery capacity options for each model results in a conservative 66 kWh estimate. <https://insideevs.com/news/343998/monthly-plug-in-ev-sales-scorecard/>



would include an upfront payment for purchase of VGI-enabled EV/EVSE and program enrollment, a reservation payment for responding to test events, and a performance payment for actual grid events. The reservation payment ensures the capacity remains available and responsive, while aiding customer understanding of grid-responsive charging/discharging behavior, even if such services are managed “behind the scenes.”

#### 6. Advanced Telemetry for Distribution System Operations

Joint Comments on VGI Issues provide further detail on this VGI Portfolio component. VGIC believes this service could be delivered to IOUs if they choose to (or are required to) solicit grid services (e.g. through an RFP) from VGI-enabled EVs to provide operational support (e.g., voltage support).

#### 7. Cost-Effectiveness

In Opening Comments, VGIC recommended against an overly strict cost-effectiveness screening in the early stages of VGI. However, we would be supportive of developing a more complete cost-effectiveness framework to assess programs and policies following the first full cycle of VGI Portfolios (e.g. after ~2 years). This will allow sufficient experience with several VGI Portfolio elements, which will be needed to properly evaluate cost-effectiveness. We continue to support a staged approach to developing this methodology and a focus on portfolio-level outcomes.

#### 8. VGI Research and Data Collection

In Opening Comments on VGI Issues, Cal Advocates supported establishing a VGI Data Program to help gather, model, and analyze data related to VGI use-cases. VGIC supports Cal Advocates’ recommended draft scope of work and recommends a VGI Data Program take place

concurrently with implementation VGI strategies, rather than serving as a prerequisite at this time. The following revisions should be made to Cal Advocate’s recommended draft scope:

- *Add:* Coordinate with OEMs, EVSPs, and/or third-party entities to collect and share data through partnership agreements or data platforms. This will likely require some level of investment to attract OEMs and EVSPs as partners and compensate third-parties for costs associated with data collection software, aggregation and anonymization, compliance with applicable legal and regulatory requirements, protections of customer data privacy, anti-competitiveness considerations, and cybersecurity protections.
- *Remove:* “Whether the program participants should answer the following question: How does the value of VGI use cases compare to other storage or DERs?”<sup>9</sup> Given the unique nature of VGI use cases, the nascency of the VGI market, the complexity embedded within this question, and the opportunity to implement VGI strategies without answering it, VGIC recommends that this question not be included in the scope.

VGIC strongly encourages the Commission and Energy Division to coordinate this VGI Data Program with California Energy Commission (“CEC”) to ensure there are no duplicate efforts and to leverage each agency’s unique strengths and resources.

#### 9. Marketing, Education, and Outreach

As outlined in VGIC’s Opening Comments and above, OEMs and/or EVSPs could provide a valuable avenue for direct customer education on rates, programs, or general VGI ME&O efforts. VGIC believes that the upstream incentive mechanism discussed above would incent OEMs/EVSPs to undertake ME&O efforts on EV rates and VGI programs by necessity. Furthermore, areas of overlap between TEP ME&O carveouts and VGI Portfolio ME&O carveouts should be identified and coordinated in their approach.

#### 10. V2G Export Bill Credit (priority for DRIVE OIR)

VGIC Opening Comments included this as a Portfolio element under the umbrella of “Dynamic Rate Options” and reserves more detail for the TEF Rates comment period. As an initial matter,

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<sup>9</sup> CalAdvocates Opening Comments on VGI Issues at 6.

VGIC does not believe it is premature to consider V2G compensation structures. The recent Rule 21 Proposed Decision, if adopted, will significantly advance V2G pilots<sup>10</sup>. Thus it would be prudent to begin exploring V2G compensation structures now.

11. IOU Coordination

VGIC supports coordination between IOUs wherever possible to ensure a uniform and streamlined implementation process. As national companies, VGIC's members generally seek to minimize the overall number of program administrators they must interact with. A statewide approach to VGI can better attract investment and is consistent with the evolution of the Clean Fuel Reward.

Respectfully submitted,



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<sup>10</sup> See *Proposed Decision Adopting Recommendations from Working Groups Two, Three, and Subgroup* in R.17-07-007 <https://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M345/K380/345380320.PDF>