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VGI Working Group

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RE: CalETC VGI Policy Recommendations

The California Electric Transportation Coalition is pleased to provide these comments and policy recommendations to the Vehicle Grid Integration Working Group. CalETC is a non-profit industry trade association that is committed to the successful introduction and large-scale deployment of all forms of electric transportation. CalETC supports and advocates for the transition to a zero-emission transportation future as a means to spur economic growth, fuel diversity and energy independence, ensure clean air, and combat climate change. CalETC's board of directors include Los Angeles Department of Water and Power, Pacific Gas and Electric Company, Sacramento Municipal Utility District, San Diego Gas and Electric Company, Southern California Edison, Northern California Power Agency, and the Southern California Public Power Authority. Membership also includes manufacturers of zero-emission vehicles in all weight classes, electric vehicle charging station providers, and other industry leaders supporting transportation electrification (TE). In addition to the comments listed below, CalETC supports the spreadsheet comments jointly submitted by SCE, PG&E and SDG&E to the Subgroup C policy team.

High Level Policy Comments

The objective of these comments is to provide a consolidated higher-level discussion on the policy recommendations around vehicle grid integration (VGI) from a Utility perspective. Utilities are primarily interested in broader policies and program entry points that will lead to large-scale adoption of EV's in a manner that is cost effective, provides benefits to all customers, supports the widest application of technologies and is consistent with other utility priorities in alignment with other state policy goals. To that extent, CalETC supports the following broad VGI associated policy positions:

I. Low-cost Integration Solutions

CalETC supports the development of technologies, applications, and standards that can lead to low-cost deployment of vehicle grid integration solutions. These low-cost solutions will need to be applied at scale to enable utilities to meet California's transformational transportation electrification goals. Lowering the cost of networking is particularly important so that the cost of fueling an electric vehicle remains cheaper than its fossil fuel competitors. Low-cost solutions are exemplified by VGI concepts such as TOU rates designed for EVs, low-cost communication pathways that can lead to active control, open standards, multiple control pathways to stimulate healthy competition amongst VGI aggregators and service providers to lower the cost of VGI solutions and reduce grid impacts.

II. Provide Benefits to All Customers

Utility-supported VGI solutions need to be a part of a balanced portfolio of VGI projects that are made available to all customers. VGI portfolios need to be designed to support all rate classes and all customers. Customers need equal access to technology, rates and programs to realize the benefits of VGI at both the customer and grid level. In general, those technologies and programs that support customers charging at lower levels per vehicle served and at the best times of the day tend to reduce overall grid impacts, keep costs lower than high-impact solutions, benefit all customers through deferral of grid upgrades, and avoid procurement of high-cost energy during peak times.

III. Accelerate the Use of EVs as PSPS Solutions

CalETC supports Vehicle to Home / Building (V2H, V2B), Vehicle to Microgrid (V2Microgrid) as well as Rule 21 compliant DC V2G (off-board stationary inverter), which are close to commercial launch. In the long-term, AC V2G (on-board mobile inverter) solutions should be pursued given that they have the potential to reach a wider scale. We believe these types of solutions are good topics for large-scale demonstrations (see Section VI below).

IV. Maintain Consistency and Coordination Between State Agencies and State Policy Goals

In addition to meeting the state's GHG and air pollution reduction goals, there are other state policies associated with VGI, TE, and Energy Storage that are emerging across multiple proceedings. It is important that state agencies coordinate and maintain consistency across these different policy forums. These proceedings and funding programs include:

- Transportation Electrification Framework (CPUC)
- VGI Working Group (CPUC with other agencies)

- SB 676 (VGI Strategy)
- AB 2514 (Storage mandate)
- Load Management OIR (CEC)
- Rule 21 for Smart Inverters (CPUC)
- SB 1339 Micro-grids (CPUC)
- IEPR (CEC)
- VGI Roadmap (CEC)
- DER Roadmap (CEC)
- Grid impact and charging infrastructure needs assessments (e.g. AB 2127, SB 44)
- Smart charging credits (LCFS)
- Funding programs (EPIC, SGIP, Clean Transportation program, CARB's LCT programs)

The use of EVs as battery energy storage for integrating renewables, resource adequacy, resilience, and microgrid power for public safety power shutoff (PSPS) events are all new applications that transcend across all these different policy venues. It is important that all the state agencies work cooperatively to coordinate policy development across these proceedings to provide consistency and efficiency. The agencies should recognize that specialized staff resources to support all these proceedings are limited which place a premium on timing. In addition, the agencies should work to support state goals for adoption of light-, medium- and heavy-duty EVs as well as non-road TE. For example, CARB and the air districts have ambitious requirements and plans for TE and the utilities are obligated to serve these loads. As a result, VGI is an important goal but not the only goal. Helping the state meet federal air quality requirements and the state's 2045 carbon neutrality requirement is a top-level need and VGI is a secondary goal that should be used to help achieve these primary goals. Similarly, from a customer perspective, the primary goal of electric vehicles and the related infrastructure is to provide reliable and affordable transportation, and VGI solutions must be designed to accomplish this goal.

V. Wide Application of Technology and Platforms

CalETC encourages VGI solutions that can apply to the widest number of vehicles possible. CalETC seeks broad VGI policies so both automaker networks and charging networks can embrace large scale VGI acceleration. To this extent CalETC supports encouraging cloud-based aggregators to allow for both vehicle-based telemetry as well as networked EVSE-based solutions. Cloud-based aggregators can handle many open and proprietary standards from automakers or charging networks, easily accommodate upgrades to standards and allow utilities to use one or two open standards to communicate with the aggregator. Any regulations should allow for both vehicle and EVSE-based VGI communication protocols or application pathways and should not favor one communication medium (e.g. wi-fi, powerline carrier, cellular/telematics, etc.). Most utilities have indicated plans to use aggregators for distributed energy resource management including

managed charging. Open standards should help lower the cost for those services and should be encouraged.

VI. Multiple Communication Protocols Via Cloud Aggregators

CalETC recommends that a single VGI communication protocol not be mandated through regulation. The EV market is still in its nascent stage where mandating a single communication protocol could have an adverse effect on EV adoption by increasing the costs of vehicles or networking fees, and have a chilling effect on the development or adoption of different communication protocols that would be better suited in a given use case. This is especially the case given the trend toward increasing use of vehicle telematics. With respect to ISO 15118, CalETC does not oppose it being a standard, but we do not support it being mandated as the only standard. Currently, it is premature to make a recommendation for any VGI communication standard on the charging network or automaker. Communication protocols need to be vetted in the marketplace, which has been the successful approach of the IOUs with smart thermostats and the current approach of the smart inverter working group, which uses cloud aggregators that translate and pass through many different communication protocols.

VII. Large Scale Demonstrations, Data Programs, and Studies Need to be Funded

CalETC supports funding programs with ratepayer funds, CEC EPIC funds and utilities' forklift LCFS funds to accelerate VGI. For example, CalETC has submitted a proposal to the CEC to use EPIC funds for an on-going program to convene VGI data experts on a wide array of topics¹, and for California agencies to select promising VGI use cases for large-scale demonstrations that will accelerate adoption and help automakers and charging networks make the business decisions to commercialize VGI (e.g., validate reliability, business and consumer acceptance, security and other issues, conduct other needed TBD tech advancement).² CalETC believes that a detailed, independent, third-party VGI net value analysis should be conducted on the larger-scale use cases because Subgroup B was not able to do this. Additional understanding of the impact on the grid from TE in 2030 and 2040 is also needed. Recommendations for large-scale demonstrations, studies, and expert collaboration is also in the draft 2018 VGI Roadmap and the 2019 IEPR. CEC EPIC funds are not the only source of funds for the above ideas: the IOUs have proposed using ratepayer funds, and the utilities' forklift LCFS funds also can be used for any type of TE project including VGI studies and demonstrations.

¹ CalETC proposed \$2-4 million to the DER roadmap process to better understand VGI net value, lessons learned from all the past and upcoming data from funded projects and fund others who will voluntarily participate in this data expert collaboration.

² CalETC proposed \$50 million to the DER roadmap process for this effort.

VIII. Policies that level the playing field for VGI with stationary storage and other DERs should be pursued.

V2G and V1G projects in the marketplace face unfair competition because SGIP funds stationary DERs (e.g. stationary batteries and solar) but not mobile batteries, like those in EVs, which are also DERs. Allowing V1G and V2G to qualify for SGIP may level the playing field. An interim step would be for SGIP to fund pilots in various market segments in order to test different incentive payments for V1G and V2G. Similarly, the AB 2514 storage mandates on the IOUs do not have a level playing field because V2G projects qualify, but V1G projects do not. In the past, a large coalition that included IOUs, environmental groups, automakers, charging network providers and ratepayer groups have requested this reform. VGI policies need to be consistent between the distributed energy resource strategies to ensure business opportunities for all technologies are equal and that no winners or losers are selected through regulations. Rules that favor one technology over another within and across regulatory proceedings often result in the unintended consequence of raising costs.

IX. Need for Alternative Approaches to Submetering for TE

CaETC is concerned about the high costs of submetering for EVs, the technical issues accompanying it, and the lack of a broad approach for all types of load management and DERs. Given the many challenges faced by EV submetering over the last decade, a re-examination is needed, including consideration of new approaches that could work for all types of DERs or that could minimize costs.

Thank you for your kind attention and consideration of these CaETC recommendations for VGI Policy. Should you have any questions, please contact Kristian C. Corby at kristian@caletc.com or 916-551-1943.

Sincerely,
California Electric Transportation Coalition



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