



Comments of the Vehicle-Grid Integration Council (VGIC) on the California Energy Commission (CEC) Vehicle-to-Grid (V2G) Inverter List Workshop

Docket # 19-AB-2127

Implementation of AB 2127 Electric Vehicle Infrastructure Assessments

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I. Introduction

The Vehicle-Grid Integration Council (“VGIC”), a 501(c)6 membership-based advocacy group, is pleased to provide comments in response to the California Energy Commission (“CEC”) Vehicle-to-Grid (“V2G”) Inverter List Workshop hosted May 17, 2022.

VGIC is 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 decarbonized transportation and electric sectors 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.

VGI refers to *the shift or modulation in charging or discharging time, level, or location in support of achieving a more reliable, affordable, decarbonized, and efficient electric grid*. VGI includes V2G solutions, and VGIC appreciates the Commission’s exploration of establishing a V2G inverter list. VGIC’s comments below address specific recommendations for the CEC to consider as it establishes a V2G Inverter List.

II. UL 1741, UL 1741 SA, and UL 1741 SB should each be tracked upon launch of the V2G Inverter List.

During the workshop, CEC staff identified that UL 1741, UL 1741 SA, and UL 1741 SB may each be relevant standards to track upon launch of the V2G Inverter List. VGIC believes all three of these standards should be tracked for the following reasons:

- A. UL 1741** – the core safety standard – is required for participation in the customer group A.5 of the Emergency Load Reduction Program (“ELRP”). Based on VGIC’s understanding, this is the only existing pathway for V2G exports to be compensated in California, and therefore plays a critical role in facilitating the development of the V2G market. According to CPUC Decision 21-12-015 and the IOU’s Second Substitute Tariff Sheet to Advice Letter 6458-E, V2G Direct Current (“V2G-DC”) systems certified to UL 1741 – but not UL 1741 SA or other updated smart inverter standards (i.e., UL 1741 SB) – may interconnect for the purpose of participating in

ELRP. With this in mind, VGIC believes it is critical that certification to the base UL 1741 be tracked in the CEC’s V2G Inverter List.

- B. UL 1741 SA** – the smart inverter supplement – is currently required under Rule 21 for all V2G DC devices seeking interconnection that are not participating in ELRP. While UL 1741 SB will be required under Rule 21 beginning in 2023, Decision 20-09-035 and Resolution E-5165 allow installed V2G-*capable* (but not *enabled*) devices certified to UL 1741 SA a 5-year grace period to comply with UL 1741 SB. For example, if a UL 1741 SA device is installed in unidirectional or V1G “mode” in 2022, then requests Rule 21 interconnection in 2024, then it does not need to meet UL 1741 SB even though at that time UL 1741 SB would otherwise be required under Rule 21. With this 5-year grace period in mind, it is critical that certification to UL 1741 SA be tracked in the CEC’s V2G Inverter List.
- C. UL 1741 SB** – the *updated* smart inverter supplement – will be required under Rule 21 beginning in early 2023. Considering it will take some time for the CEC to develop and launch the V2G Inverter List, VGIC believes it reasonable to track UL 1741 SB upon launch, which may coincide with the new Rule 21 requirement. As noted in Sections II.B and II.C above, even when UL 1741 SB is required under Rule 21, several key exceptions for V2G DC systems participating in ELRP and/or utilizing the 5-year grace period will remain, and therefore UL 1741 SB should not be the only certification tracked at launch.

III. VGIC recommends the CEC host further discussion to determine how best to develop the tool for purposes beyond streamlining interconnection.

The specific scope of the V2G Inverter List appears to remain an open question for the CEC. During the workshop, CEC staff shared that the solar and storage equipment and inverter lists have been used by utilities to streamline the interconnection process. Several stakeholders highlighted that in addition to this purpose, the V2G Inverter List could potentially be used to list other technical details that could support V2G market development. Additionally, CEC staff expressed interest in how to design the list to prepare for V2G Alternating Current (“V2G AC”) devices, even if this configuration is not common at the launch of the list. Along these lines, the in-development UL 1741 SC standard has been suggested as a no-regrets addition to the V2G

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Inverter List. In VGIC’s view, the CEC’s V2G Inverter List is an important initiative that should in the near-term track the three UL standards listed above in Section II, and that the topics of (1) additional uses for the list and (2) how to prepare for V2G AC devices, including adding UL 1741 SC to the list, merit further discussion. As such, VGIC urges the CEC to host further stakeholder discussions to develop the specific scope of the V2G Inverter List beyond its near-term role of streamlining interconnection.

IV. Conclusion

VGIC believes V2G solutions are well-poised to be a critical component of California’s clean, reliable energy future and an accelerated transition to a carbon-free system that benefits everyone. VGIC appreciates the leadership of the CEC in establishing the V2G Inverter List, and looks forward to further collaboration with the CEC and other stakeholders on this important initiative.

Respectfully submitted,
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