

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

Order Instituting Rulemaking to Consider
Streamlining Interconnection of Distributed
Energy Resources and Improvements to
Rule 21.

Rulemaking 17-07-007
(Filed July 13, 2017)

**COMMENTS OF THE VEHICLE-GRID INTEGRATION COUNCIL ON PROPOSED
DECISION ADOPTING RECOMMENDATIONS FROM WORKING GROUPS TWO,
THREE, AND SUBGROUP**

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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 these comments to the *Proposed Decision Adopting Recommendations from Working Groups Two, Three, and Subgroup* (“PD”), filed by Administrative Law Judge Anne E. Simon (“ALJ”) on August 20, 2020.

I. INTRODUCTION.

VGIC commends the Commission for directing the development of a number of plans and workshops that represent reasonable and common-sense actions to advance the ability for distributed energy resources (“DERs”), including electric vehicles (“EVs”) to help support the needs of a rapidly evolving grid. Specifically, VGIC strongly supports the PD’s affirmation that Vehicle-to-Grid Direct Current (“V2G DC”) may be interconnected under current Rule 21 language. VGIC also commends the Commission’s direction to investor-owned utilities (“IOUs”)

¹ 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/>).

to: (1) develop an interconnection pathway for Vehicle-to-Grid Alternating Current (“V2G AC”) systems that does not rely on Rule 21 smart inverter requirements, (2) modify interconnection portals to enable simple tracking of V2G systems, and (3) host a series of meetings to maintain momentum on V2G AC interconnection pathways. While strongly supportive of the PD as it relates to most Issue 23 and the V2G AC Subgroup recommendations, VGIC recommends the Commission consider the following modifications and clarifications to provide greater certainty and effectiveness:

- The Commission should add a Finding of Fact to reflect the critical need for interconnection pathways for V2G AC pilots not just for Commission learnings but to enable V2G AC at commercial scale.
- The Commission should clarify which automotive industry standards will trigger V2G AC Subgroup reconvening and revisiting of jurisdictional questions.
- The Commission should clarify the applicability of the UL PCS CRD referenced in Proposal 23d is an *option* for applicants with a V2G DC system, not a hard requirement for interconnection of V2G DC system interconnecting in *bi-directional mode*.

II. THE COMMISSION SHOULD ADD A FINDING OF FACT TO REFLECT THE CRITICAL NEED FOR INTERCONNECTION PATHWAYS FOR V2G AC PILOTS NOT JUST FOR COMMISSION LEARNINGS BUT TO ENABLE V2G AC AT COMMERCIAL SCALE.

The PD makes the following points in the Discussion section regarding the need to develop interconnection pathways for V2G AC pilots:²

“Parties contend that without a pathway to interconnect, these four pilots face barriers to operate, gather data, and learn. We find it necessary to create a pathway to interconnection to enable the Commission to learn from these and other future V2G AC interconnection pilots.”

VGIC supports this determination. Furthermore, VGIC contends that a near-term interconnection pathway is not only necessary for the Commission to learn from current and future V2G AC pilots,

² PD at 115.

but is critical for overcoming fundamental barriers to further scaling V2G AC deployments, including deployments that are in the public interest. Moreover, we believe there is sufficient factual basis within the record of Rulemaking (“R”) 17-07-007 to support this conclusion – namely, that allowing interconnection for V2G AC pilots now is critical for unlocking V2G AC at scale in the future.³ V2G AC pilots can inform safety and reliability implications of deploying V2G AC systems at scale. By granting a temporary exemption from Rule 21 smart inverter requirements for V2G AC pilots, the Commission will allow such learnings to take place and help build trust and familiarity with V2G AC performance on key safety and reliability criteria. While the utilities have raised general concerns with the exemption, VGIC believes this is a step Commission must take in order to overcome the “chicken or egg” problem that has plagued V2G AC market development to date, including key aspects of testing, product development, and ultimately commercial deployment. Moreover, VGIC believes that any safety issues that arise will be narrowly limited to the pilots themselves and can be managed appropriately through the coordination steps the PD has already laid out. VGIC reaffirms that for all automotive original equipment manufacturers (“OEMs”), safety is a paramount concern that permeates all aspects of vehicle development and manufacturing. As such, the OEMs are strongly committed to working with IOUs and other stakeholders to ensure V2G AC pilots can move forward while guaranteeing safety and reliability.

Given these facts, VGIC recommends the Commission amend the PD to add the following Finding of Fact (“FOF”), perhaps to be inserted after FOF 212, to indicate the criticality of developing

³ See, for example, *Final Report of the Vehicle to Grid Alternating Current Interconnection* Subgroup at 15.

interconnection pathways not just for V2G AC pilots but also for scaled deployment of V2G AC systems:

“Successful completion of these and other future V2G AC pilots and any associated learnings represent a critical step towards scaling up V2G AC deployments that are in the public interest.”

III. THE COMMISSION SHOULD CLARIFY WHICH AUTOMOTIVE INDUSTRY STANDARDS WILL TRIGGER V2G AC SUBGROUP RECONVENING AND REVISITING OF JURISDICTIONAL QUESTIONS.

While directing several productive and commendable actions, the PD could be improved by clarifying which standards must be “approved”⁴ to trigger a reconvening of the V2G AC Subgroup.

Specifically, Ordering Paragraph (“OP”) 55 states:

“Pacific Gas and Electric Company, San Diego Gas & Electric Company, and Southern California Edison Company (Utilities) shall actively participate in the committees that update the vehicle to grid alternating current interconnection standards.”⁵

VGIC supports the requirement for IOUs to actively participate in standards committees focused on V2G AC interconnection. VGIC members active in the Society of Automotive Engineers (“SAE”) Interoperability Task Force and Standards Committees wholeheartedly welcome additional participation by IOU representatives. Moreover, SAE Committee members have volunteered to produce a compendium of relevant standards descriptions which can be quickly and easily digested by newly participating IOU representatives. However, VGIC recommends that the PD clarify that the “standards” referred to in OP 55 may include the automotive industry standards referenced in FOF 259 (i.e. SAE).⁶ For reference, VGIC has included an update on relevant SAE Standards in Attachment A to these comments. Furthermore, the PD should be clear about what

⁴ PD at 195, OP 55.

⁵ *Ibid.*

⁶ *Id* at 172.

constitutes “approval” in this context. VGIC recommends that publication by a relevant standards body could constitute approval.

Additionally, VGIC disagrees with FOF 263 which states the following:

“V2G AC interconnection standards need to be adopted prior to the Commission considering the jurisdictional question of plug-in electric vehicle equipment requirements or self-certification policy issues.”⁷

VGIC contends that this reflects a subjective determination of the Commission rather than a true finding of fact. Contrary to this statement, it is well within Commission’s power to adopt a general policy that self-certification processes could be considered an acceptable approach to V2G AC interconnection, as long as the processes meet certain safety and reliability performance criteria. This would not predetermine whether a specific self-certification process is in fact acceptable for interconnection under Rule 21. Thus, VGIC recommends that the Commission replace FOF 263 and revise OP 55 as follows:

FOF 263: “Both third-party certified and self-certified requirements for plug-in vehicle equipment could be considered acceptable for interconnection under Rule 21. However, each self-certification process may require additional evaluation before being deemed acceptable by the Commission.”

OP 55: “When applicable standards, including automotive industry standards developed by the Society of Automotive Engineers, have been approved published, Utilities shall inform the Director of the Energy Division, who is authorized to reconvene the Vehicle to Grid Alternating Current Subgroup no later than 90 days from the issuance of approved updated standards. When applicable standards have been published, the Commission shall further consider the jurisdictional question of plug-in electric vehicle equipment requirements or self-certification policy issues.”⁸

IV. THE COMMISSION SHOULD CLARIFY THE APPLICABILITY OF THE UL CRD FOR POWER CONTROL SYSTEMS REFERENCED IN PROPOSAL 23D

⁷ *Id* at 173.

⁸ *Id* at 195.

IS AN OPTION FOR APPLICANTS WITH A V2G DC SYSTEM, NOT A HARD REQUIREMENT FOR INTERCONNECTION.

VGIC finds it imperative that the Commission resolve any remaining ambiguity on interconnection pathways for V2G DC systems, wherein the bi-directional inverter is stationary and not located onboard the vehicle. FOF 197 states “the existing Rule 21 tariff allows V2G DC EVSE systems to be interconnected if the EVSE meets all Rule 21 requirements, including UL 1741 SA,”⁹ and FOF 247 and 248 both refer to the “*option*” of UL Power Control Systems (“PCS”) Certification Requirements Decision (“CRD”)¹⁰. Together, these FOFs suggest that V2G DC systems *interconnecting the full capacity of the inverter in bi-directional mode* need not comply with UL PCS CRD, as it is not a part of UL 1741 SA. VGIC is concerned that the relationship between the UL PCS CRD and V2G DC FOFs is not adequately represented, which may lead to ambiguity in practice. Thus, VGIC requests that the Commission provide explicit clarification that V2G DC systems, *if interconnecting the full capacity of the inverter in bi-directional mode* from the outset, do not require UL PCS CRD.

Respectfully submitted,



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⁹ *Id.* at 167.

¹⁰ *Id.* at 171.