June 17, 2021

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Re: Protest of the California Energy Storage Alliance to Advice Letter 3774-E of San Diego Gas & Electric Company, Advice Letter 4510-E of Southern California Edison Company, and Advice Letter 6209-E of Pacific Gas and Electric Company

Dear Sir or Madam:

Pursuant to the provisions of General Order 96-B, the California Energy Storage Alliance ("CESA") hereby submits this protest to the above-referenced Advice Letter 3774-E of San Diego Gas & Electric Company ("SDG&E"), Advice Letter 4510-E of Southern California Edison Company ("SCE"), and Advice Letter 6209-E of Pacific Gas and Electric Company ("PG&E"), *Joint Advice Letter Proposing Interconnection Pathway for Vehicle-to-Grid Alternate Current Projects and Implementation Steps for Direct Current Electric Vehicle Supply Equipment Projects, Pursuant to Decision 20-09-035* ("Joint Advice Letter"), submitted on May 28, 2021.

I. INTRODUCTION & BACKGROUND.

The Commission issued Decision ("D.") 20-09-035-02-006 on February 11, 2021 that addressed a number of interconnection issues and proposals developed in Working Groups 2 and 3 of the Rule 21 proceeding, Rulemaking ("R.") 17-07-007. Among others, the Commission adopted several of the Issue 23 sub-proposals focused on and clarified the Rule 21 interconnection pathways for vehicle-to-grid ("V2G") direct current ("DC") electric vehicle supply equipment ("EVSE"), so long as all of the Rule 21 interconnection requirements are met.[1] D.20-09-035 also adopt sub-proposals to allow V2G DC EVSEs to operate in uni-directional mode (or "V1G") with the appropriate certifications and to activate its bi-directional capabilities upon completion of the Rule 21 interconnection review process and receiving permission to operate ("PTO") from the distribution utility.[2] These implementation details were discussed and developed as part of a series of workshops and meetings with the investor-owned utilities ("IOUs").

[1] D.20-09-035 at Findings of Fact ("FOF") 196-197, Conclusion of Law ("COL") 57, and Ordering Paragraph ("OP") 39.
[2] D.20-09-035 at FOF 198 and OP 40-42.

In addition to addressing the V2G DC EVSE interconnection pathways, D.20-09-035 deferred on a commercial pathway for Rule 21 interconnection pathway for V2G alternate current ("AC") resources until the appropriate standards are updated to address various gaps identified in the V2G AC Interconnection Sub-Group; however, D.20-09-035 adopted a temporary interconnection pathway for V2G AC pilots that would be exempt from the Rule 21 smart inverter requirements, with alternative means to address safety and reliability concerns through proposals developed through a series of IOU-hosted meetings.[3]

Altogether, the adopted Issue 23 sub-proposals represent major breakthroughs in creating a clear pathway for Rule 21 interconnection of V2G DC and V2G AC systems, thus removing a key barrier to deployment of these mobile energy storage resources to provide a range of vehicle-grid integration ("VGI") services for customers, IOUs, and other grid operators. Whether the smart inverter functionalities are built into the stationary EVSE or onboard the electric vehicle ("EV"), the Commission appropriately affirmed how stationary and mobile energy storage systems are functionally equivalent and can be accommodated through existing interconnection processes for stationary energy storage systems, with a few tweaks and areas of clarification. For example, the Commission recognized how not all EVSEs intend to operate as Rule 21 applicable V2G systems, as well as how customers may wish to first operate in V1G load-only EVSEs and later activate its Rule 21 applicable V2G capabilities.

Pursuant to D.20-09-035, the Joint Advice Letter thus represents many areas of productive collaboration in the working groups and workshops both prior to and after the Commission decision. In particular, CESA supports and appreciates the development of the V2G AC pilot eligibility criteria for the temporary interconnection pathway, which would require interconnection requests to be submitted no later than December 31, 2022 and allow no more than six pilot projects per IOU service territory to leverage this temporary interconnection pathway.[4] This proposal is generally consistent with the stakeholder consensus reached through working group meetings in Fall 2020. While recognizing the IOU's time and resources to support a temporary pathway, the proposal also offers flexibility regarding timelines for submitting interconnection requests and the number of pilot projects, especially given the uncertainty of updates and clarifications to applicable standards and processes and the uncertainty related to the number of projects that would benefit from a near-term pathway to demonstrate V2G AC use cases. Furthermore, on the most part, CESA supports the implementation steps and process laid out in the Joint Advice Letter to allow V2G DC EVSE interconnection.

However, in reviewing the Advice Letter, CESA submits this protest because the Joint Advice Letter: (1) does not explicitly lay out a process for V2G DC EVSEs to advance immediately to a Rule 21 interconnection application and review process; and (2) SDG&E's Interconnection Handbook requires the use of multiple relays. Furthermore, CESA seeks clarification on the use of the EVSE "model year" for the purposes of determining the applicability of the certification requirements when interconnection requests are made.

[3] D.20-09-035 at OP 44.
[4] Joint Advice Letter at 6-7.

II. DISCUSSION.

In the Joint Advice Letter, the IOUs detail the V2G DC EVSE interconnection process and the technical requirements and application process for V2G AC pilots for interconnection via a temporary exemption pathway. In general, the IOUs' proposals are clear and consistent, but CESA finds two key areas that require modification and one area for further clarification. These three areas are detailed further below.

A. The IOUs should affirm that V2G DC EVSEs can proceed directly to the Rule 21 interconnection application processes.

While supportive of the proposed V2G DC EVSE interconnection process, the Joint Advice Letter critically does not expressly outline the process by which V2G DC EVSEs have the option to move directly to initiating a Rule 21 interconnection study. From the start, some interconnection customers may wish to enable bidirectional V2G capabilities without being subject to the stage-gated process of connecting first as a load-only one-way charging EVSE. Without this explicit clarification, V2G DC EVSEs may be subject to additional and unnecessary processes, thus delaying their ability to interconnect and operate as a mobile energy storage resource. Considering D.20-09-035 affirmed Rule 21 applicability to both stationary and mobile energy storage,[5] this would not represent an even playing field.

Furthermore, without this explicit clarification, V2G DC EVSEs may be subject UL Power Control Systems ("PCS") Certification Requirements Decision ("CRD") to ensure controls against bi-directional operations when in uni-directional mode, despite having no intent from the onset to operate in uni-directional model. As a result, the Joint Advice Letter implies that all V2G DC EVSEs would be subject to certification to the UL PCS CRD even though PCS-controlled uni-directional mode is not sought by the interconnection customer. This sequential process represents unnecessary cost and process borne by the V2G DC EVSE interconnection customer and is contrary to the intent of D.20-09-035 to clarify Rule 21 applicability for mobile energy storage systems.

In raising this issue in comments to the Proposed Decision leading to D.20-09-035, CESA understands that the Commission declined to formally adopt this proposed option due to the lack of record.[6] However, despite not explicitly raising this in the Issue 23 sub-proposals and working group processes, this pathway was assumed to be available, especially as the Commission made determinations regarding the similar Rule 21 applicability for stationary and mobile energy storage systems and how V2G DC EVSEs under the Issue 23 sub-proposals otherwise use the Rule 21 interconnection study criteria and processes in place for stationary energy storage systems.

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[5] D.20-09-035 at OP 38.
[6] D.20-09-035 at 175.

CESA therefore recommends that the IOUs be directed to revise their V2G DC EVSE interconnection process to clarify that the proposed pathway is not the standard procedure for V2G DC EVSEs that seek to immediately apply for an interconnection request and how the proposed process applies to V2G DC EVSEs with bi-directional capabilities that first seek to operate in uni-directional mode and plan to apply to secure PTO from the IOUs via the Rule 21 interconnection process to activate its bi-directional mode.

B. SDG&E should not require the use of two relays for V2G AC pilots to interconnect under the temporary exemption pathway.

The Joint Advice Letter proposes to enable V2G AC interconnection for eligible pilot projects through the use of a relay installed at the point of common coupling ("PCC"), with the relays programmed with the applicable voltage and frequency settings as specified in each IOU's respective interconnection handbooks.[7] On its face, CESA does not oppose the use of relays, as it presents a viable path to allow safe and reliable interconnection of V2G AC projects on a temporary basis given their exemption from the Rule 21 smart inverter requirements.

However, in reviewing each IOU's interconnection handbooks, CESA identified one issue related to SDG&E's requirements for the use of relays, which would in turn subject V2G AC pilot projects to multiple relays:[8]

> "Whenever primary relays or protective devices are out of service, backup or secondary relays must be available to clear faults. When restoring any relays that have been out of service, the Generator's designated representative shall verify that the contacts of any such relays, which are normally open, are in fact open. The Generator must ensure that relays do not have standing trip output."

Considering the high cost of relays, CESA believes that the requirement for multiple relays as presenting a significant barrier to the use of this temporary pathway for V2G AC pilots, preventing these pilots from delivering on the learning objectives of having such a pathway in place.[9] While the multiple relays would ensure the necessary safety precautions with redundancy in case the primary relay fails, CESA believes that the backup relay requirement is excessive and does not balance safety considerations with viable interconnection pathways. In our review of the interconnection handbooks of Pacific Gas and Electric Company ("PG&E") and Southern California Edison Company ("SCE"), such

[7] Joint Advice Letter at 6.
[8] SDG&E Interconnection Handbook Section 5.2 Voltage Control Operation and Other Service Requirements at 25. https://www.sdge.com/more-information/customer-generation/electric-rule-21/distribution-interconnection-handbook
[9] D.20-09-035 at 133 and OP 44.

duplicative relay requirements are not in place for distributed energy resources ("DERs"), including V2G AC systems, to interconnect through the use of relays.

CESA understands that the IOUs' interconnection handbooks apply to all DERs, not just V2G AC systems, so there may be reasons for SDG&E in including the multiple relay requirement for those interconnecting through the use of relays; however, as a temporary pathway for enabling V2G AC pilots to interconnect and generate data and lessons learned, CESA recommends that this multiple relay requirement minimally not apply to eligible V2G AC pilots. Already, the relay-based pathway limits the scope of projects that can take advantage of this temporary process given the need to have, for example, larger fleets behind the PCC to defray the relatively high costs of relays. With the use of IOU-approved relay equipment, CESA believes that the primary relay should be sufficient to ensure reliability without the need to have backup relays in place. With the number of V2G AC pilots limited to six per IOU service territory, the use of a single primary relay, at least for the purposes of the V2G AC pilots, should be allowed and can be managed and monitored as needed.

C. The IOUs should clarify and define EVSE "model year" or alternatively, start the timeline for applicable certification requirements at the time of V1G load connection.

CESA appreciates the IOUs' recognition that certification requirements evolve over time, which could present issues if there is a large gap in time from when V2G DC EVSEs first connect under V1G load-only uni-directional mode and later seek to enable its V2G capabilities through the Rule 21 interconnection process. To reasonably accommodate this reality of V2G DC EVSE purchase and installation, the IOUs propose an exception for V2G DC EVSE systems where the IOUs will accept the certification for the model year of the EVSE for five years after the model year, creating a limited time period where these systems would not be required to have the applicable certification requirements at the time of interconnection request.[10]

This flexibility is appreciated and appropriate. However, CESA seeks clarification on the definition of "model year" for EVSEs to avoid ambiguities and provide clarity for interconnection customers on the time by which they must consider submitting an interconnection request. As CESA understands it, "model year" is not common nomenclature for EVSEs like they are for vehicles (*e.g.*, 2019 Honda Accord, 2021 Honda Accord), which have cyclical production and update cycles. Rather, EVSEs typically represent a combination of hardware and software, involving version updates for the software underpinning the EVSE hardware. With the use of model year language, for example, it is unclear if a 2019 EVSE "model year" installed in 2021 would actually have a smaller window for the applicability of certification requirements (*i.e.*, 2024).

[10] Joint Advice Letter at 5.

Instead, for clarity, CESA recommends that the IOUs clarify the five-year time period for applicable certification requirements begin at the start of V2G DC EVSE load connection in V1G uni-directional mode, which is more straightforward and does not require consideration of model year.

III. CONCLUSION.

Considering the above, CESA recommends that modifications and clarifications should be made accordingly. CESA appreciates the opportunity to submit this protest on Joint Advice Letter and looks forward to collaborating with the Commission and stakeholders in this proceeding.

Respectfully submitted,

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