

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

Order Instituting Rulemaking on the Commission's Own Motion to improve distribution level interconnection rules and regulations for certain classes of electric generators and electric storage resources.

Rulemaking 11-09-011
(Filed September 22, 2011)

**COMMENTS OF THE CALIFORNIA ENERGY STORAGE ALLIANCE ON THE
ADMINISTRATIVE LAW JUDGE'S RULING REOPENING RECORD TO CONSIDER
THE MODIFICATION OF DECISION 12-09-018 AND RULE 21**

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In accordance with Rules of Practice and Procedure of the California Public Utilities Commission (“Commission”), the California Energy Storage Alliance (“CESA”) hereby submits these comments on the *Administrative Law Judge’s Reopening Record to Consider the Modification of Decision 12-09-018 and Rule 21* (“Ruling”), issued by Administrative Law Judge (“ALJ”) Kelly A. Hymes on April 7, 2021.

I. INTRODUCTION.

CESA appreciates the Commission’s consideration of emerging interconnection safety and reliability issues as technologies, use cases, and grid conditions evolve. In issuing this Ruling, the Commission highlights a potential gap in the current interconnection requirements based on observations of instances by Energy Division staff of transmission-connected projects that interconnect under the Rule 21 and Net Energy Metering (“NEM”) tariffs. While Decision (“D.”) 12-09-018 created exemptions from California Independent System Operator (“CAISO”) tariff requirements for NEM generation facilities and Rule 21 non-exporting generation facilities, the Ruling suggests that grid stability and visibility issues may be present due to possible differences

in inverter programming requirements and lack of telemetry requirements for these transmission-connected projects.

However, in these comments, CESA recommends that the Commission first conduct further analysis to substantiate the scope of the potential risks, problems, or gap of transmission-connected Rule 21 and NEM systems. Until such analysis is conducted and evidence is presented, the status quo should be maintained. If gaps or problems are identified and substantiated, the Commission should target changes and revisions to the Rule 21 and NEM tariffs instead of simply removing the current exemption and subjecting these projects to CAISO tariff requirements.

II. CHANGES SHOULD NOT BE PURSUED UNTIL FURTHER ANALYSIS IS CONDUCTED OR PROVIDED ON THE SCOPE OF THIS POTENTIAL PROBLEM OR GAP.

While understandable of the potential grid stability issues, CESA cautions against changes to interconnection requirements or exemptions as adopted in D.12-09-018 until further information is provided, and data analysis is conducted on the scope of such projects and the resulting grid reliability and safety impacts and risks. To start, CESA was surprised to learn about Rule 21 or NEM projects being able to connect at the higher-voltage transmission levels, under the assumption that customer facilities likely require step downs in voltage to serve their onsite loads. In assessing distributed generation interconnection data, for example, CESA was unable to determine the service level of the interconnection of projects since such information is not published,¹ making it difficult to determine the scope and scale of the potential problem, aside

¹ See Interconnected Project Sites Data Set updated as of January 31, 2021 and downloaded on April 20, 2021: https://www.californiadgstats.ca.gov/download/interconnection_rule21_projects/. There is no filter for transmission interconnection. Some proxy estimates could be made based on assumptions of certain capacity thresholds (e.g., 50 MW, 100 MW) for projects that could not feasibly interconnect at lower-voltage distribution systems. However, given the unique nature of California's distribution grid, the thresholds for utility-operated distribution grid and CAISO-controlled bulk electric system are set at higher

from the Ruling's reported "instances" of such cases.² Anecdotally, CESA has also heard from members that there may be some project examples that fit under this category of projects, including NEM solar generation and energy storage paired with direct current ("DC") fast chargers along a highway corridor and large industrial facilities (e.g., mining operations, refineries) where customers may have their own onsite substations or step-down transformers. Some members are also considering the development of medium- and heavy-duty ("MD/HD") electric vehicle ("EV") charging depots that seek bidirectional charge/discharge capability that may be impacted by decisions made on this matter.

Absent further information and data, CESA recommends that the Commission defer any immediate changes at this time and maintain the status quo unless imminent grid stability, reliability, and safety issues or risks are substantiated and articulated in this proceeding. In other words, pre-emptive changes should be avoided until the issue is more fully understood. Currently, based on the limited information available and the anecdotal evidence provided in the Ruling and from our members, this issue appears to be the exception rather than an emerging trend at this time. At the same time, CESA encourages the Commission to further investigate this issue and explore any solutions or pathways that could provide long-term certainty and grid reliability as these use cases emerge. As noted above, the integration needs of high-capacity EV charging stations and hubs present a potential near-term use case where bidirectional capability of EV chargers and/or NEM solar and storage pairings are being actively explored.

voltage levels than most would expect based on utility grid structures in other markets and states. For example, Southern California Edison Company ("SCE") distribution grid includes 66-kV and higher lines.

² Ruling at 2.

III. RATHER THAN SUBJECTING SUCH PROJECTS TO CAISO TARIFF REQUIREMENTS, SPECIFIC GAPS SHOULD BE IDENTIFIED AND ADDRESSED IN THE RULE 21 TARIFF.

Even if the Commission and stakeholders identify and analyze the scope and nature of the potential problem or gap of transmission-connected resources under Rule 21 or NEM, CESA cautions against a solution that would merely remove the exemption as adopted in D.12-09-018, thereby requiring that these projects to interconnect under and be subject to the requirements of the CAISO tariff. Given that these projects likely do not participate or sell into the CAISO market, the Commission-jurisdictional Rule 21 and NEM tariffs should apply and be maintained as the interconnection pathway for such projects. Rather, if gaps are identified, the Commission should instead seek to develop revisions or changes to the Rule 21 and NEM tariffs to align inverter settings as appropriate and/or address issues related to resource visibility to support the CAISO's grid operations, such as through telemetry requirements and/or data sharing agreements with the CAISO and the distribution utility, as needed. Since these transmission-connected Rule 21 non-exporting and NEM projects are intended to support onsite customer load rather than participate in the CAISO market and sell energy or other services to the CAISO market, a targeted approach to addressing gaps should be pursued.

IV. RESPONSES TO QUESTIONS.

Due to limited time and resources ahead of the comments deadline to conduct an in-depth compare-and-contrast of CAISO tariff and Rule 21 tariff requirements, CESA will defer to the CAISO, investor-owned utilities ("IOUs"), and other interested stakeholders in responding to the questions in more detail at this time. CESA encourages the Commission to continue to more closely examine this issue with more time afforded.

Question 1: Do differences in smart inverter settings or telemetry requirements exist for distributed energy resource systems interconnecting to the California Independent System Operator (CAISO)-controlled utility transmission grid through the Rule 21 tariff versus systems interconnecting through the CAISO tariff?

- a. If so, specify the differences and explain in detail how each difference in settings affects transmission grid stability and reliability. Be as specific and as technical as possible.**
- b. Elaborate on any other technical differences between interconnecting to the transmission grid through Rule 21 versus the CAISO tariff.**
- c. What are the technical advantages/disadvantages of allowing transmission interconnection through Rule 21 instead of the CAISO tariff?**

At a high level, CESA believes that there certainly are differences in various technical requirements to inverter settings, telemetry, metering, and interconnection study processes and requirements. For example, as a condition of interconnection, all generating facilities under FERC’s *pro forma* Large Generator Interconnection Agreements (“LGIA”) and Small Generator Interconnection Agreements (“SGIA”) are required to install, maintain, and operate a functioning governor or equivalent controls (*e.g.*, via inverters) as well as maximum droop and deadband parameters, pursuant to FERC Order No. 842, ensuring that primary frequency response is provided – a requirement that is not in place for Rule 21 or NEM systems. Furthermore, there are likely differences tied to the market participation of wholesale generation facilities, which, for instance, are required to provide or absorb reactive power as part of the LGIA/SGIA but also requires the CAISO to pay for any such services provided. These examples of differences highlight the difficulty of simply removing the existing exemption for transmission-connected resources intending to support onsite customer load and not participate in the CAISO market as a participating generator. Consequently, upon further substantiation of the issue and then as part of the gaps analysis, the Commission should consider responses to this question and consider whether

more targeted changes or revisions could be made to Rule 21 and NEM tariffs to align with the appropriate and applicable technical requirements in the CAISO tariff for transmission-connected projects. CESA looks forward to reviewing comments from CAISO and the IOUs in response to this question.

Question 2: What technical requirements and changes are necessary to bring the installed systems interconnected to utility transmission grids via Rule 21 into compliance with CAISO's requirements (specifically smart inverter, telemetry settings and other technical requirements)? Are these changes affected by system size? Please indicate changes necessary system-by-system.

See our response to Question 1 above. Generally, differences are in place as evidenced by the availability and applicability of the LGIA and SGIA to generation facilities of different sizes. CESA looks forward to reviewing comments from CAISO and the IOUs in response to this question.

Question 3: Does interconnecting to the transmission system through Rule 21 further the State of California's renewable energy, climate change and environmental justice goals in a way that cannot be accomplished by interconnecting to the distribution system through Rule 21 or to the transmission system through the CAISO tariff?

- a. If so, how?
- b. What are the benefits and are these benefits only achievable via transmission level interconnection under Rule 21? If so, why?

Yes, as discussed above, CESA is aware of potential project use cases where generation and storage resources may seek interconnection at the transmission level to optimize and support onsite customer load rather than to participate in the CAISO market. Subjecting resources with no intention to participate in the wholesale market to additional requirements related to market participation will only serve to increase interconnection costs without any benefit to the project.

For example, MD/HD charging depots along a highway may only have the option to connect at the transmission level, leaving little option to incorporate bidirectional charge and discharge capability and/or integrate NEM solar and storage to manage its power draws if such additions would trigger these systems to be studied under processes in accordance with the CAISO tariff and/or have additional requirements placed on them that is only appropriate for market-participating resources. Such additional costs and process timelines could deter such project types and thus detract from the state's renewable energy and environmental justice goals. Fewer EV chargers, solar, and storage resources could be deployed as a result.

Question 4: Does transmission interconnection through Rule 21 lead to monetary benefits for California ratepayers? If so, what are these benefits and are these benefits only achievable via transmission level interconnection under Rule 21?

Yes, see CESA's response to Question 3 above.

Question 5: Do responses to questions 1-4 differ between Net Energy Metering and Non-Export systems? If so, how do responses differ? If responses differ, be as specific as possible about why this is the case.

Yes, if a gaps analysis is conducted, CESA believes that NEM exporting and non-exporting systems should be differentiated when considering any changes to interconnection requirements. To our knowledge, wholesale resources that execute generator interconnection agreements ("GIAs") are all exporting resources with the only onsite load being served being station loads. Any CAISO tariff requirements that are reflected in the Rule 21 and NEM tariffs to align inverter settings and other interconnection requirements should thus recognize that certain requirements may not be directly applicable to non-exporting systems since such generation facilities likely do not exist among CAISO generators.

Question 6: What lines (voltages) in your electric grids are deemed Transmission versus Distribution (or sub-Transmission)?

Since this question is directed to the investor-owned utilities (“IOUs”), CESA provides no response to this question. We look forward to reviewing their responses and providing reply comments as needed.

Question 7: **What was the initial rationale for allowing transmission interconnection for Rule 21 through the Settlement Agreement as specified in D.12-09-018 (Appendix A, at A-1–A-2)? Is the initial rationale for allowing transmission interconnection for Rule 21 systems still valid? If so, why? Please provide specific examples.**

CESA has no comments at this time.

V. CONCLUSION.

CESA appreciates the opportunity to submit these comments on the Ruling and looks forward to collaborating with the Commission and stakeholders in this proceeding.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Jin Noh', written in a cursive style.

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April 23, 2021