BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking Regarding Microgrids Pursuant to Senate Bill 1339 and Resiliency Strategies.	Rulemaking 19-09-009 (Filed September 12, 2019)

COMMENTS OF THE CALIFORNIA ENERGY STORAGE ALLIANCE ON THE E-MAIL RULING ON POTENTIAL MICROGRID & RESILIENCY SOLUTIONS FOR COMMISSION RELIABILITY ACTION TO ADDRESS GOVERNOR NEWSOM'S JULY 30, 2021 PROCLAMATION OF A STATE OF EMERGENCY

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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 *E-Mail Ruling on Potential Microgrid & Resiliency Solutions for Commission Reliability Action to Address Governor Newsom's July 30, 2021 Proclamation of a State of Emergency* ("Ruling"), issued by Administrative Law Judge ("ALJ") Collin Rizzo on August 23, 2021.

I. INTRODUCTION.

In response to the Governor's Emergency Proclamation on July 30, 2021, ALJ Rizzo issued this Ruling calling for proposals to consider potential expedited actions that can be taken in this proceeding and position microgrid solutions to support potential emergency reliability needs and system capacity shortfalls in Summers 2022 and 2023. ALJ Rizzo aptly captures the sentiments around the challenges faced today, with climate change intensifying the impact and magnitude of extreme heat, drought conditions, and wildfire events,[1] which also contribute to the need to utilize Public Safety Power Shutoffs ("PSPS") events as a last-resort tool.

To this end, CESA submitted opening testimony in the Emergency Reliability proceeding, R.20-11-003, regarding various supply- and demand-side solutions and actions that can be taken, some of which will be referenced in this proposal. Some of CESA's proposed strategies in R.20-11-003 can be extended to single- and multi-customer microgrids, and as such, we appreciate the

[1] Ruling at 6-7.

opportunity to present proposals for consideration in this proceeding. In these comments, CESA offers the following proposals:

- **Proposal 1:** Expand the exemption from Rule 18/19 to allow for "cross-the-fence" transmission of electricity for microgrids that can island during "gray-sky" operations.
- **Proposal 2:** Adopt a capacity or reservation payment within the Emergency Load Reduction Program ("ELRP"), or parties' proposals that feature such elements.
- **Proposal 3:** Direct additional interconnection staffing to support timely deployment of larger projects, including microgrids.

Using the ALJ's questions as a guide, CESA attempted to provide responses to them in each of the proposal sections below.

II. PROPOSAL 1: EMERGENCY LOAD REDUCTION VIA ISLANDING.

A potential way that in-front-of-the-meter ("IFOM") and behind-the-meter ("BTM") distributed energy resources ("DERs") can contribute to grid reliability is to permanently reduce customer load during the system net peak load hour. For microgrids, this function can be provided by islanding during these periods, thereby reducing the load that needs to be served by the system grid during stressed periods (*e.g.*, Flex Alerts, Stage 1-3 emergencies).

Currently, microgrids can offer grid services during "blue-sky" conditions where the generation and storage facilities within the microgrid project can reduce customer load and/or export power on a day-by-day basis. By its design, microgrids are also configured to support customer(s) resiliency needs during "black-sky" conditions when grid outages are about to be or are triggered, whether due to load shedding out of system-wide capacity shortage, for proactive de-energization to guard against wildfire risks, or for planned outages to support maintenance of the wires infrastructure. During these conditions, the generation or storage resources constituting the microgrid is able to disconnect from the system grid and serve the specific loads in an electrical island. However, in light of the August 2020 outages and the prospect of potential repeat events in the face of extreme heat and drought conditions, there may be also another mode of operation where microgrids could operate in "gray-sky" mode to provide the islanding function as a means to mitigate or avoid the risk of outages due to system-wide capacity shortfalls. By reducing the load that needs to be served by the system grid during stressed periods, the microgrid would be providing a grid service akin to emergency demand response ("DR").

As a service that is akin to DR, this service can be readily provided by single-customer microgrids through existing DR programs and through existing Proxy Demand Resource ("PDR") market participation models in the California Independent System Operator ("CAISO") wholesale market. Customer meter reads will read load consumption in event and non-event days in response to wholesale market prices, triggers, or utility dispatch. This approach is relatively well-established and familiar, though it could be aided by the adoption of strategies and pathways to allow for the efficient, safe, and reliable use of low-cost isolation technologies, which is a strategy adopted in D.21-01-018 and is an outstanding issue before the Commission staff regarding the specific implementation steps.[2] Furthermore, single-customer microgrids could also more readily have compensation mechanisms in place to pay customers for these permanent load reductions – such as via the Permanent Load Reduction ("PLR") Incentive Program proposal submitted by CESA in R.20-11-003, if adopted.[3]

To support this functionality for multi-property microgrids, however, current limits in Rule 18/19 present barriers. Rule 18/19 governs the supply of electricity to separate premises and prohibits one premise from supplying electricity to a different premise.[4] Additionally, Public Utility Code ("PUC") Section 218 requires any entity who wishes to sell power to more than two contiguous parcels or across a street to become an electrical corporation,[5] which, by way of PUC Section 216, is defined as a "public utility."[6] However, D.21-01-018 allowed for some exemptions to Rule 18/19 so that microgrids owned by public agencies or third parties would be able to supply electricity to a critical facility on an adjacent premise during a grid outage.[7] This exemption was also limited to ten microgrids across all three IOUs, and supplying electricity to different premises is still prohibited during "normal operation."[8]

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[2] *See, e.g.*, SDG&E Advice 3734-E-B, et al. submitted on August 25, 2021.
[3] CESA Opening Testimony in R.20-11-003 at 72.
[4] Pacific Gas & Electric ("PG&E"), Electric Rule No. 18: "Supply to Separate Premises and Submetering of Electric Energy"; Southern California Edison ("SCE"), Rule 18: "Supply to Separate Premises and Use by Others"; San Diego Gas & Electric ("SDG&E"), Rule 19: "Supply to Separate Premises and Resale"
[5] PUC § 218
[6] PUC § 216(a)(1)
[7] D.21-01-018 at 29-30
[8] D.21-01-018 at 28

In the interest of urgent emergency reliability needs while reasonably adhering to the intent and reasoning for limited exemptions in D.21-01-018, CESA proposes that the Commission extend the bounds of the Rule 18/19 exemptions to allow for parallel operation of the service line between premises be allowed not just in the event of grid outage, but also during capacity shortfall events, as signaled, for example, by CAISO Flex Alerts or its Alert, Warning, Emergency ("AWE") system. This requires redefinition of "normal operation" and establish an in-between state from "normal" versus "outage" since islanding in response to CAISO Flex Alerts or AWE signals is intended to avoid outages rather than mitigate and ride through outage events. In addition, CESA proposes a broader allowance of electricity transmission that is not just limited to adjacent properties. As the Commission takes steps to bring as much capacity online for Summer 2022/2023, the exemption limit of ten projects should also be considered for removal if additional projects commit to supporting system reliability. The bounds of the exemption around customer eligibility (*e.g.*, low-income customers served, critical facilities) can be maintained.

Finally, CESA recommends that the Commission allow for microgrid projects supporting emergency reliability via islanding to be eligible for compensation mechanisms established in the ELRP, especially if it is not duplicative of other funding sources and compensates specifically for the load reduction service provided, such as CESA's proposed PLR Incentive Program. Furthermore, microgrids providing this function should still remain eligible for the Microgrid Incentive Program ("MIP") or Community Microgrid Enablement Program ("CMEP"), since these payments are intended to support the microgrid equipment, enabling technologies, and necessary supporting infrastructure – not the emergency reliability service itself. In tandem, the PG&E also has an opportunity to use microgrids to support system reliability through its newly-required reissuance of the Clean Substation Pilot Request for Proposals ("RFP"). While this pilot is currently focused on PSPS outage mitigation,[9] the project could be slightly pivoted to also study how this microgrid contributes to summer reliability. In other words, CESA recommends that PG&E adjust its bid evaluation criteria for potential microgrid projects to consider whether and how emergency reliability services could be provided through its islanding function.

[9] A.21-06-022: *Application of Pacific Gas and Electric Company (U 39 E) Proposing Framework for Substation Microgrid Solutions to Mitigate Public Safety Power Shutoffs* at 1

By adopting the proposal above, it could unlock community microgrid projects to support not only their customer(s) resiliency needs in advance of and during an outage but also support removal of an entire community's load during emergency reliability events, representing a collective form of emergency DR. Some of these project concepts were shared at a workshop on August 25, 2020 regarding diesel alternatives. For example, Sunrun's neighborhood grid concept entailed the use of substation-level switchgear and substation-sited energy storage and fuel cells to create a distribution island, supplemented by BTM DERs. Tesla also presented at the workshop on a proposed 17-MW proposed clean energy solution at the Fort Bragg substation using a combination of utility-scale and BTM solar and storage resources. Finally, Trane presented at the July 28, 2021 MIP implementation workshop on a community microgrid project in active development that could come online before June 2023 with proposed tariff modifications as well as some supplementary support.[10] Using a gen-tie from the new turbine to critical customer loads and automatic transfer switches ("ATS"), combined with a breaker/recloser to allow islanding on the PG&E distribution system, this project could DR-like load shed through this islanding function, but the project runs up against Rule 18/19 limitations.

In sum, CESA sees significant merit and potential in adopting these expanded exemptions to Rule 18/19 and considering ways for procuring and compensating microgrids to provide emergency reliability capacity via its islanding function. Such projects can come online in short order, most likely by Summer 2023 for IFOM multi-property microgrid projects and can provide this service without having to await deliverability upgrades to be built and deliverability to be

[10] Due to cluster study timelines, high application fees, and limited interconnection application submission window, CESA wishes to explore the concept of developing and offering a Guaranteed Capacity Payment ("GCP") to developers that meet certain criteria (*e.g.*, via CEC or some other state agency). Without being able to incorporate these capacity revenues in pro forma sheets due to long timelines in securing full capacity deliverability status ("FCDS"), projects can stall due to the lack of financing from investors, even though projects could be interconnected within a reasonable timeframe in the interim to operate in the wholesale market and provide energy and ancillary services to generate merchant revenue, and/or sell renewable energy credits ("RECs") if applicable. The payment could be set at a level somewhat below the expected market rate. While this would have a slightly negative impact on the *pro forma*, the effect of a reduced payment compared to having no capacity revenue at all would be minimal. A "somewhat below market" value would also encourage developers to move their generators to market transactions as soon as possible. With FCDS in hand, developers can then sell this capacity to a load-serving entity ("LSE"). Criteria could be set on the eligibility for the GCP, such as for projects located in disadvantaged communities ("DACs") and/or in Tier 2 or 3 High Fire Threat Districts ("HFTDs"). Given the urgency of both system capacity and microgrid resiliency needs, this may be a strategic means to stimulate several high-priority projects by closing key funding gaps with supplemental funding.

allocated in order to qualify as Resource Adequacy ("RA") resources.[11] With alarming levels of temporary diesel generators being deployed to support these needs in the near term, there is also value in obviating the need to rely on these resources and avoiding the negative health and socioeconomic impacts of diesel usage. CESA understands that this tariff modification would also seek to modify D.21-01-018, which arrived at these exemptions under limited circumstances even for the primary purpose of providing customer resiliency, but the confluence of the emergency reliability risks and ongoing wildfire and PSPS challenges have led CESA to propose a revisit to this policy.

III. PROPOSAL 2: CAPACITY OR RESERVATION PAYMENT IN BTM EMERGENCY RELIABILITY PROGRAMS.

While many customers are interested in BTM microgrids for resiliency purposes during grid outages, these projects also have the potential to contribute to system reliability and prevent outages due to system-wide load shedding as a result of capacity shortfalls. Considering resiliency-focused energy storage projects are capital-intensive investments, provision of multiple grid services outside of backup power and access to additional income streams makes projects more financeable (*i.e.*, supporting the value stack) and accessible to more customers while providing benefits to all customers. To support these ends, however, CESA recommends that the Commission adopt capacity or reservation payments for the recently-adopted ELRP to ensure that BTM microgrid capacity is committed to deliver during times of grid stress.

Many microgrids are currently being designed to provide backup power against the potential prospect of extended and even multi-day outages. In order to provide energy for extended periods of time, energy storage systems can be oversized beyond peak customer load to support black-sky operations, potentially making incremental capacity available for blue-sky operations. For example, D.20-06-017 required IOUs to modify NEM tariffs to remove storage sizing limit, which had previously been 150% of maximum output capacity, in order to increase resiliency ahead of wildfire season. Similarly, projects receiving incentives from the Self-Generation Incentive Program ("SGIP") Equity Resiliency Budget ("ERB") are allowed to be oversized to

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[11] Note that, of course, many generation and storage resources within the microgrid project may still pursue RA deliverability and net qualifying capacity ("NQC") in order to provide value in blue-sky operations.

accommodate inverter modularity. There are 27 MW of storage already deployed in the ERB.[12] While oversizing is beneficial for providing power during extended outages, this additional capacity can also be exported to the grid to enhance system grid reliability.

However, in order to incentivize customers to provide energy to the grid, payment is needed to offset the opportunity cost of forgoing some portion of the reserves needed to support their own onsite customer needs if an outage does occur. This could be done by enrolling microgrids in ELRP, with an increased ELRP payment, or including a payment for capacity, either inside or outside ELRP. As mentioned in CESA's Opening Testimony in R.20-11-003, we support increasing the ELRP compensation to $2/kWh. Additionally, CESA outlines a novel Enhanced Storage-Backed Demand Response ("ESB-DR") program that could be extended to microgrids where we recommend a $1,200/kW capacity reservation payment for committed capacity from four-hour storage systems.[13] Larger payments could be made to microgrids with additional storage duration. Similarly, Marin Clean Energy ("MCE") requested funds to support an expansion to its Energy Storage Program, which provides a monthly bill credit of $20 for each 20 kWh of energy storage, up to $200/month with additional payments for exports during the peak time-of-use ("TOU") period for non-residential customers.[14] MCE is currently proposing to compensate customers in the program for exports during CAISO Alert, Warning, Emergency ("AWE") notices at the applicable day-ahead or day-of price.[15] In addition, Peninsula Clean Energy ("PCE") also has a Net Peak Residential Storage Load Modification program that includes a $10/kW-month capacity payment for storage that discharges one hour per weekday within a designated two hour peak window.[16] CESA urges the Commission and stakeholders to take these various programs as models and consider how to incorporate microgrids into existing programs or create new ones.

As the Commission weighs program elements, it is important to consider that customers will likely want to retain part of their storage capacity for backup power purposes. While the Commission should encourage contributions to reliability by microgrids, customers should maintain their ability to use systems for backup power, if they determine that their onsite resiliency

[12] Data from the SGIP Real Time Public Report accessed on 9/10/21. Storage in the ERB was considered deployed if its budget classification was Paid or PBI in Progress.
[13] CESA Opening Testimony in R.20-11-003 at 63.
[14] MCE Opening Testimony Chapter 2 in R.20-11-003 at 3-11.
[15] *Ibid*.
[16] PCE Opening Testimony in R.20-11-003 at 3-13.

needs must be preserved. There are many reasons for customers to opt against making their reserves available to the system grid, such as the critical needs of the onsite customer or the critical services provided by the onsite customer to the broader community. In the same way, it is important to consider that existing microgrid programs (*e.g.*, Microgrid Incentive Program) should not require microgrids to provide these grid services as an eligibility criterion. Rather, efforts should be made to establish "carrots" to incentivize microgrid projects to make their capacity available to the system grid and compensate these services accordingly, if they are capable and willing to do so.

CESA understands that this action will be taken in R.20-11-003, but we raise it here as well as a "proposal" to convey the intersectional impacts of proposals adopted in R.20-11-003 on microgrid projects that are within the scope here. In consequence, the Commission should closely coordinate across teams to consider these cross-cutting impacts and pursue the most impactful proposals accordingly.

IV. PROPOSAL 3: INTERCONNECTION STAFFING.

As extreme weather and heat events become more common, along with wildfire and PSPS risks that are worsening, demand for microgrids and resiliency projects are increasing. In addition, with the Commission requiring record buildouts of 12.5 GW of energy storage capacity through 2025[17] and going forward at a 2 GW per year pace through 2045 for up to 52 GW in cumulative short- and long-duration energy storage capacity,[18] improved interconnection and transmission and distribution ("T&D") upgrade construction will play a critical role in meeting not only our decarbonization goals but in ensuring both short- and long-term reliability. While this encompasses projects of various sizes both in and out of state, distributed exporting storage will play an important role in meeting these goals, and BTM storage creates high "load flexibility" that can reduce annual electricity supply costs by $1 billion. Without efficient and streamlined interconnection processes, reliability risks could persist, increasing the dependence on the existing

[17] *Administrative Law Judge's Ruling Seeking Comments on Proposed Preferred System Plan* issued on August 17, 2021 in R.20-11-003 at 16.
https://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M399/K450/399450008.PDF
[18] *Senate Bill 100 Joint Agency Report* (2021) at 12.

thermal fleet rather than transitioning away toward a grid dominated by clean generation and storage resources.

There have been many reports from the CAISO and developers regarding interconnection and T&D upgrade construction delays, both for IFOM and BTM generation and storage projects. In March 2021, for example, Guidehouse released its evaluation of the Rule 21 Interconnection Program, showing a wide range of adherence to interconnection timelines depending on the project type, interconnection process step, and utility, with some steps having less than 50% adherence rate to timelines.[19] Given current project timeline delays and expected increased demand, CESA proposes that the Commission direct additional IOU interconnection staffing to process interconnection requests in a timely manner, including for microgrids, which face delays given the relatively more complex nature of these project types.

CESA commends the work that has been started to address these delays, including through the issuance of D.20-06-017, which required IOUs to "commit additional resources to their interconnection study and distribution upgrade teams, as well as to the IT solutions that support these teams, in order to facilitate faster processing for all projects."[20] However, in San Diego Gas and Electric Company ("SDG&E") Advice Letter 3590-E, PG&E Advice Letter 5917-E, and Southern California Edison Company ("SCE") Advice Letter 4275-E, all three IOUs declined to hire additional staff, instead citing various technical and process improvements as sufficiently meeting decision requirements.[21] While the IOUs did outline concrete steps to improve timelines, the consideration of additional staffing needs should be reconsidered given that the official Guidehouse interconnection evaluation has now been completed, reliability and resiliency solutions are urgently needed before Summer 2022, and reported delays from developers persist. CESA commends the IOUs for working to streamline the interconnection process for smaller projects in particular, typically at or below 30 kW of non-exporting BTM standalone storage or Net Energy Metering ("NEM") solar-plus-storage systems, and supports the increased levels of IT enhancements and automation to expedite the processing of interconnection applications. However, at some point, greater human resources are also needed to supplement the IT

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[19] *Guidehouse Rule 21 Interconnection Program Evaluation* at 129-130.
[20] D.20-06-017 at 6.
[21] SCE AL 4275-E, PG&E AL 5917-E at 2, SDG&E AL 3590-E at 5

enhancements and automation to handle the volume of interconnection requests and need for timely completion of T&D upgrades.

Overall, interconnection timelines vary widely by project and do not meet expected timelines for a variety of factors. The Guidehouse evaluation shows where timelines are not being met: Non-NEM projects in both PG&E and SCE territory had 50% or less of projects adhere to timelines for Initial Reviews ("IR") and Supplemental Reviews ("SR"). While streamlining Fast Track projects has been effective in getting project connected quickly and that smaller, NEM project applications are quickly processed. However, particularly at PG&E, developers shared difficulties reaching out to or receiving timely responses from staff, especially when points of contact are shifting often or handing off projects to others.[22] They also shared frustration surrounding the need to reach out to staff at PG&E and SCE multiple times about the same inquiry before receiving a response.[23] While additional capabilities in the IOU portals or easy access to information or FAQs online can help to solve some issues, staff availability is still needed to respond to inquiries. This will be particularly true for microgrids, which do not currently come in standard configurations and have not been deployed as often. As microgrids begin to be developed more widely, more interactions with staff may be needed to address unique and unfamiliar hurdles in the interconnection processes. As a result, CESA recommends that the Commission revisit this proposal, which was deferred during the consideration of the IOUs' implementation advice letters.

V. <u>CONCLUSION</u>.

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,

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[22] *Guidehouse Rule 21 Interconnection Program Evaluation* at 115-116
[23] *Guidehouse Rule 21 Interconnection Program Evaluation* at 119-120