

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

**OPENING COMMENTS OF VOTE SOLAR AND THE CLIMATE CENTER
ON THE PROPOSED DECISION ADOPTING RATES, TARIFFS, AND RULES
FACILITATING THE COMMERCIALIZATION OF MICROGRIDS PURSUANT TO
SENATE BILL 1339 AND RESILIENCY STRATEGIES**

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I. Introduction

Vote Solar and The Climate Center (referred to hereafter as the “Joint Parties”) respectfully submit these comments pursuant to Administrative Law Judge Rizzo’s Proposed Decision (PD) adopting rates, tariffs, and rules facilitating the commercialization of microgrids pursuant to Senate Bill 1339 and resiliency strategies issued on December 7, 2020. Vote Solar is a 501(c)(3) non-profit organization, working to lower solar costs and expand solar access. Vote Solar advocates for state policies and programs needed to repower our electric grid with clean energy. The Climate Center is a California 501(c)(3) nonprofit organization founded in 2001 with a mission to deliver rapid greenhouse gas (GHG) reductions at scale, starting in California.

SB 1339 requires the Commission to implement microgrid standards, protocols, guidelines, methods, rates, and tariffs as well as reduce barriers to microgrid deployment statewide. SB 1339 requires the Commission to prioritize system, public, and worker safety in implementing this legislation. The Joint Parties believe that the PD, particularly Proposal 4, appropriately prioritizes the deployment of microgrids that serve low-income residents, people with access and functional needs, customers on medical baseline and electricity-dependent Medicare patients.

Low-income customers face higher energy cost burdens¹ and have been disproportionately impacted by public safety power shut offs.² This PD seeks, in part, to remedy past inequities in the design of rates, tariffs and rules and reverse cost shifting from poorer communities and customers to more wealthy ones. According to a 2020 UCLA study, clean energy incentives historically have disproportionately benefited customers who already enjoy significant economic advantages:³

The decreasing cost and increasing availability of new technologies capable of improving household energy efficiency, generating and storing renewable energy, and decarbonizing major end use appliances have begun to significantly transform many residential communities across the U.S. Despite these positive developments however, the degree to which disadvantaged communities (DACs) have been able to participate in and benefit from these transformations remains far from equal. Using historical time series data at the zipcode level within Los Angeles County, (the study) documents the scale and extent to which DACs continue to be left behind. These data show per-capita levels of electricity and natural gas consumption within DACs that are, on average, about half of those seen within their more affluent counterparts. ... In conclusion, we suggest that the redistributive investment of public funds for the purpose of accelerating DAC participation in energy system transformations constitutes a socially optimal investment strategy.

With these historical regulatory inequities in mind, the Joint Parties commend the Commission staff for starting a process to reverse past cost-shifting practices and,

¹ The American Council for an Energy-Efficient Economy recently reported that 25% of American households put over [6% of their income toward energy expenses](#) – and these households are more likely to be Black, Latino, or Indigenous populations.

² The California Department of Social Services estimates that nearly 51,000 households receiving food assistance were in areas that experienced extensive power outages during the Oct. 9 through Oct. 12 (2019) PSPS shut-off. Roughly 300,000 people on Medi-Cal, a health insurance program for mostly low-income people, were also in the heavily impacted areas.

³ A [2020 report](#) issued by the UCLA Institute of the Environment and Sustainability documented how inequities in incentives place a larger burden of cost on the least affluent, and reward wealthier consumers.

instead, to prioritize the development of microgrids, in a manner that benefits vulnerable populations first. In our view, this policy is just the beginning and much more needs to be done. Our comments are supportive of Proposals 2 and 4. However, we believe that these initiatives need to continue beyond the rather limited initial commitments recommended in the PD. Likewise, we are supportive of the proposal to substitute innovative clean technologies for polluting mobile diesel generators at three safe-to-energize substations but caution that the capital costs may not be justified unless they result in scalable solutions that can help reduce greenhouse gas emissions and local criteria air pollutants.

II. Proposal 2 Should be Modified to Maintain Robust Ongoing Support for the Development of Microgrids that Serve Critical Municipal Facilities

The Joint Parties propose three modifications to build upon the recommendations in the Proposed Decision regarding Proposal 2 that would revise Rules 18 and 19. We agree that the Rules should be revised to enable the deployment of microgrids that serve critical municipal facilities on multiple adjacent parcels of land. However, the PD recommends an initial limitation of just 10 projects per utility.

First of all, the PD needs to be revised to establish criteria that prioritize which projects are selected for early municipal microgrid development on adjacent parcels so that the resiliency benefits from the limited number of projects can be maximized during the start-up period of this initiative to support microgrid deployment.

We share the concern of other parties in this proceeding that limiting the exemption in the Rules to only 30 microgrid projects would likely be insufficient to substantively advance long-term microgrid commercialization. Therefore, our second modification to the PD is that it should establish an expeditious process for extending the number of municipal microgrid projects after an initial evaluation to determine whether any unintended consequences need to be addressed by further revision of the Rules.

The PD recommends that the IOUs file an advice letter when they have reached the subscription limit. However, the PD gives the utilities several options on how they might proceed. This ambiguous directive could create uncertainty about additional opportunities for municipal microgrids located on adjacent properties. Instead of the recommended approach to future advice letters, the Proposed Decision should be revised to require the expiration of the cap on the number of municipal microgrid projects unless a compelling reason is provided as to why some continued limitation would be in the public interest.

The PD rationale for why the limit may be needed is due to concern about shifting costs between ratepayers. However, since the cost of any infrastructure for serving an adjacent property would be borne by the participating customer and the operation of the microgrid would be limited to periods when electric service has been disrupted, the possibility for cost shifting does not seem plausible. We are not opposed to evaluating the changes to Rules 18 and 19 and determining whether the exemptions should be modified. However, the burden of proof should fall upon the IOUs to demonstrate the need for any further limits for municipal facilities.

The PD also argues that a reason for a limit on the number of projects is to protect against unintended consequences. However, nowhere in the PD is there a description of what those unintended consequences might be. We agree that there could be a benefit from gaining experience from the first tranche of municipal microgrids on adjacent properties. We support the collection and sharing of data about those experiences. However, the lessons learned from initial projects should primarily be used for advancing the commercialization of microgrids rather than creating new obstacles or delays.

The third modification that we recommend to the PD regards the definition of critical facilities. The PD directs the IOUs to use the existing critical facilities list adopted by D.19-05-042 for the purpose of determining eligibility for the Rule 18 and 19 exemptions. The PD rejected the argument by various parties to expand the list of

critical facilities beyond those of D.19-05-042. We believe the PD erred in rejecting this recommendation. The Commission has the authority in this decision to adopt a more inclusive definition of critical facilities that would benefit from the development of municipal microgrids. We are not convinced that a more expansive definition of critical facilities would create any regulatory confusion and uncertainty. In fact, we believe a more expansive definition of critical facilities supports the objective of commercializing microgrids that provide resiliency benefits to municipal facilities. We urge the Commission to adopt a process in this proceeding to assure that outcome.

III. Proposal 4 Should be Modified to Assure Prioritization of Funding for Projects that Most Effectively Meet the Needs of Vulnerable Populations

The Joint Parties strongly support the changes to Proposal 4 that are recommended in the PD. We believe that further implementation details can be expeditiously worked out by establishing a formal working group charged with developing consensus solutions to specific programmatic elements required for successful implementation of Proposal 4. Our concerns about some of the implementation details are expressed more fully below.

We agree that the Commission has a fundamental duty to mitigate the effects of emergencies that disrupt vital utility service. There is no doubt that natural disasters are becoming more frequent and their effects will be more widespread as a result of climate change. Preserving the safety and the security of the electric system that Californians rely upon in the face of more climate-induced disruptions is a fundamental responsibility of the CPUC.

Microgrids are an effective resilience strategy to mitigate and recover from the disruption of essential community services. The need for an incentive program that reduces barriers for microgrid deployment is undeniable and the small amount of funding that is recommended in the PD appears reasonable at this stage of the process. However, the amount of funding will likely turn out to be insufficient over time to fulfill the

Commission's duties to protect public safety and security, particularly the critical needs of vulnerable populations.

Proposal 4 recommends that facilities serving low-income residents, including but not limited to people with access and functional needs, customers on medical baseline and electricity-dependent Medicare patients, be targeted for this incentive program. We concur with this recommendation. However, targeting of limited funding for microgrids that provide life-supporting services to these groups needs to be further elaborated. It is important, given the limited amount of funding, that the proposed Microgrid Incentive Program initially benefits the most vulnerable populations across the state. We believe that the issue of project prioritization can be worked out through the establishment of a formal working group with a well-defined scope and timetable.

The proposed decision directs the IOUs to convene "stakeholder working groups and/or meetings" to refine the program elements necessary to form a full program implementation plan. We are concerned with the ambiguity of this directive. Simply holding some meetings without clear guidance outlining specific objectives will not likely result in the robust consensus needed to make this important program as effective as needed.

The Commission should be crystal clear in describing the program implementation issues needed for consideration by the formal working group, including the scoring prioritization system to be used in selecting projects to be funded. We agree that the scoring prioritization system should include but not be limited to: (1) increasing electricity reliability and resiliency for critical public facilities in communities that are at higher risk of electrical outages; (2) serving communities with higher proportions of low-income residents, access and functional needs residents, and electricity dependents; (3) enabling communities with lower ability to fund development of microgrids to maintain critical services during grid outages; and (4) providing an opportunity for testing new technologies or regulatory approaches. Issues related to a project award cap can also be resolved by the formal working group.

The PD recommends a total program budget of \$200 million for the Microgrid Incentive Program, which appears to be derived from the original staff proposal providing funding for 15 projects at a cost cap per project of \$15 million. Both of these numbers are somewhat arbitrary and appear not to be based on an actual needs analysis. However, because furthering microgrid commercialization is the foundational objective of this proceeding, it is critical that the proposed Microgrid Incentive Program start as soon as possible. The Joint Parties are willing to stipulate that the initial funding level of \$200 million is a reasonable starting amount, but urge the Commission to undertake a careful needs assessment to determine whether that amount will be sufficient to address the needs that will arise in the implementation of the program through December, 2022. A thorough needs assessment would identify target communities of need in each of the IOU service territories and prepare an inventory of energy resilience measures that are already in place as well as critical facilities which are still in need of protection.

The Commission must address the needs of the state's vulnerable communities in a comprehensive manner. This will require a clear commitment to supplement the initial funding amount if, during the two-year initial period, the opportunities for microgrids to serve vulnerable populations turn out to be greater than can be met with the initial \$200 million. We recommend that the Commission require the IOUs to submit a status report when participation in the Microgrid Incentive Program reaches a certain threshold, say 80% of the allocated budget. This status report combined with the needs assessment, described above, will enable the Commission to determine whether a supplemental allocation to the Microgrid Incentive Program would provide additional resiliency benefits to the target communities not covered by the initial \$200 million.

Finally, we note the PD recommends that the commercial operational deadline for individual projects supported by the Microgrid Incentive Program be December 31, 2022. We agree that the complexity of the program, the time to develop project proposals compliant with program criteria, coupled with the timeline to negotiate with

counterparties, necessitates the need for more time. These complexities, in addition to the challenges of the interconnection process and possible force majeure events like the current pandemic, argue for some flexibility in setting the deadline for commercial operation. While we agree with the need for a specific deadline, we recommend that it be administered in a flexible manner that recognizes the complexities and uncertainties of microgrids being developed at critical facilities serving vulnerable populations. We suggest that the Commission re-evaluate the required commercial operation deadline based on status reports from the IOUs to determine whether an additional extension might be needed.

IV. Selection of Substation Microgrid Pilot Projects Should be Done Carefully to Avoid Lock-in of Suboptimal Solutions.

In general, the Joint Parties are supportive of the proposal to pilot three substation microgrid projects. However, we are concerned with the proposed expenditure of up to \$350 million for just three projects with the possibility that permanent projects might be selected that lock-in less than optimal solutions over a long time horizon. Our preference is that in awarding ratepayer funds, selected projects be limited in duration and cost, and be structured to collect and process important operational data concerning innovative technologies such as V2G, long duration storage and fuel cells that can be scaled at other locations.

The PD recommends that multiple conditions apply to the selection of clean substation microgrid pilot projects.⁴ We recommended several changes to the proposed conditions below. The changes are represented in underlined, italic script.

2.1. Projects may be either mobile or stationary, and either temporary or permanent.

2.2. Projects that involve stationary installation of generation at a substation for longer than 3 years can only be pursued at substations where, with high confidence:

⁴ PD, Appendix A, 2. Start the Transition towards Clean Generation. (At A-4 et seq.)

- a. Transmission lines serving the substation may be de-energized because of the fire risk, despite safe-to-energize load at the substation. The probability of transmission-level power loss affecting otherwise safe-to-energize load is relatively high and expected to persist.
- b. The utility does not have ongoing, planned, or proposed grid hardening investments that would significantly reduce the risk of de-energization at this substation over the next 10 years.
Alternatively, the cost of proposed grid hardening investments exceed \$10 million multiplied by the peak substation load in MW, and a permanent microgrid would replace the need for grid hardening.
- c. More granular distributed energy resource solutions behind the substation have been considered and found to be insufficient to improve community resilience in a more cost effective manner than the substation project.

- 2.3. Proposed projects must be judged technically feasible, safe, and financially competitive by the utility. At minimum, these solutions should meet the following requirements (see also the Challenge Statement included as Attachment A):
 - a. Design should be capable of islanding for 48 hours.
 - b. Design should be able to black start the substation load.
 - c. Design should meet cold load pickup requirements.
 - d. Design must meet frequency and frequency response requirements.
 - e. Design should meet protection requirements or include protection upgrades.
 - f. For temporary mobile projects, the cost of the project to ratepayers may not exceed twice the expected cost of utilizing backup diesel generation over the contract period. In total, the cost of any permanent project may not exceed the expected cost of 20 years of diesel rental and operation.
- 2.4. Proposed permanent solutions should meet the following general criteria:
 - a. If safe to do so, it is permissible for a subset of the project generation and/or storage resources to enter operation before the entire project is completed,

allowing the project to progress in stages and be terminated if other more granular solutions behind the substation interface emerge.

- b. By the 2022 fire season, emission from islanding the substation during PSPS events should be significantly reduced, including:
 - i. At least a 90 percent reduction in PM emissions and NOx emissions compared to what would have been emitted if large Tier 2 Diesel Generators had been used instead of the project.
 - ii. Greenhouse gas emissions roughly equivalent to, or less than, emissions from the current and projected future grid mix.
 - iii. The project employs a solution representing a demonstration of a fully renewable microgrid capable of serving load during adverse conditions.
 - iv. The project may be capable of export during normal conditions, but it is not required to do so.

2.5 Total cost of all projects over their expected useful life may not exceed \$350 million.

The cost of any single project may not exceed \$120 million. Requiring a utility to initiate clean substation microgrid projects gives room for multiple different solutions to be tested, and a broader baseline of knowledge to be developed, while working on a full framework in 2021 for future years. The accompanying conditions ensure that projects are feasible, clean, cost-effective, and low risk. Based on the threshold costs and limited number of projects in the earlier CPUC proposal, expenditures by any utility may not exceed a total of \$120 million or \$350 million dollars for the three utilities in the aggregate.

V. Conclusion

The Joint Parties appreciate the opportunity to offer these comments to Administrative Law Judge Rizzo's Proposed Decision (PD) adopting rates, tariffs, and rules facilitating the commercialization of microgrids pursuant to Senate Bill 1339 and resiliency strategies. We appreciate the careful consideration that has gone into the

revisions to the original staff proposal. We strongly believe that the further modifications we have recommended will result in a more effective and durable set of initiatives that promote the commercialization of microgrids and assure that they are built at critical facilities that serve vulnerable populations.

DATED: December 28, 2020

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Attachment A

Recommended changes to findings of fact. (Deletions are shown by strikethroughs and additions by underlining.)

15. An initial subscription limit of ten Rule 18 or Rule 19 microgrid projects per large investor owned electric utility service territory ~~can~~ may help limit any unintended, negative consequences of relaxing some Rule 18 or Rule 19 requirements.

23. A clean energy microgrid incentive program for each large investor owned utility ~~may help~~ can improve electric service in communities with higher proportions of low-income residents, access and functional needs residents, and electricity dependent customers.

Recommended changes to conclusions of law. (Deletions are shown by strikethroughs and additions by underlining.)

16. It is reasonable to require Pacific Gas and Electric Company, Southern California Edison Company, and San Diego Gas & Electric Company to implement an initial subscription limit of ten microgrid projects for each service territory to reflect the Rule 18 and Rule 19 revisions.

Recommended changes to ordering paragraphs. (Deletions are shown by strikethroughs and additions by underlining.)

2. Pacific Gas and Electric Company, Southern California Edison Company and San Diego Gas & Electric Company shall each file a Tier 2 advice letter, within 30 days upon the issuance of this decision, implementing Rule 18 and Rule 19 revisions pursuant to Section 3.2.3 of this decision. In this Tier 2 advice letter, Pacific Gas and Electric Company, Southern California Edison Company, and San Diego Gas & Electric Company shall each explicitly state that microgrids owned by municipal corporations or by a third party that primarily serves facilities owned or operated by, or on behalf of, a municipal corporation are permitted to supply electricity to critical facilities owned or operated by or on behalf of a municipal corporation on an adjacent premises. In this Tier 2 advice letter, Pacific Gas and Electric Company, Southern California Edison Company, and San Diego Gas & Electric Company shall each also form a pathway for the Rule 18 or Rule 19 microgrid projects to become live, and shall adhere to the initial subscription limit of 10 microgrid projects for each service territory pursuant to Section 3.2.3 of this decision.

4. Pacific Gas and Electric Company, Southern California Edison Company, and San Diego Gas & Electric Company shall jointly file a Tier 1 advice letter, within 30 days upon the issuance of this decision, that provides a description of implementation details and timeline for the convening of a stakeholder working groups and/or meetings to solicit develop a range of positions consensus on the program elements, including the scoring prioritization system to form a full program implementation plan for a Microgrid Incentive Program pursuant to Section 3.4.3 of this decision.

5. Pacific Gas and Electric Company, Southern California Edison Company, and San Diego Gas & Electric Company shall jointly file an implementation plan, within 120 days upon the issuance of this decision, that comprehensively discusses the implementation details of a Microgrid Incentive Program pursuant to Section 3.4.3 of this decision. Costs for the Microgrid Incentive Program shall be tracked in a new subaccount of the Microgrids Memorandum Account established in Decision 20-06-017. At a minimum, Pacific Gas and Electric Company, Southern California Edison Company, and San Diego Gas & Electric Company shall include the following information in their joint implementation plan:

Description of the program administrator's reporting requirements and timeline, such as program status reports, project status reports, and quarterly budget status reports;

- Discussion of the approach for allocating program funding amongst the individual investor owned utilities;
- Discussion of the accounting treatment, such as specification that the program may only recover costs once expenditures have been incurred and may not be proactively collected;
- Discussion of the method used to control program administrative expenses, such as implementing a cap of not more than 10 percent of the total project cost;
- Development of a program delivery plan handbook as a resource for potential participants;
- Description of approach for program evaluation; and
- Southern California Edison Company and San Diego Gas & Electric Company customers shall have access to ~~a one-time~~ matching funds payment to offset some portion or all of the utility infrastructure upgrade costs associated with implementing the islanding function of the microgrid.

16. Pacific Gas & Electric Company, Southern California Edison Company and San Diego Gas and Electric Company are individually authorized to allocate the recorded expenditures for the clean substation microgrid projects to all distribution customers, which shall be recovered through a distribution revenue mechanism. The recorded

expenditures shall be limited to the caps stated in Appendix A, inclusive of the independent evaluator.

Recommended Changes to Appendix A (Deletions are shown by strikethroughs and additions by underlining.)

2.3. Proposed projects must be judged technically feasible, safe, and financially competitive

by the utility. At minimum, these solutions should meet the following requirements (see also the Challenge Statement included as Attachment A):

- a. Design should be capable of islanding for 48 hours.
- b. Design should be able to black start the substation load.
- c. Design should meet cold load pickup requirements.
- d. Design must meet frequency and frequency response requirements.
- e. Design should meet protection requirements or include protection upgrades.
- f. For temporary mobile projects the cost of the project to ratepayers may not exceed twice the expected cost of utilizing backup diesel generation over the contract period. In total, the cost of any permanent project may not exceed the expected cost of 20 years of diesel rental and operation.

2.4. Proposed permanent solutions should meet the following general criteria:

- a. If safe to do so, it is permissible for a subset of the project generation and/or storage resources to enter operation before the entire project is completed, allowing the project to progress in stages and be terminated if other more granular solutions behind the substation interface emerge.
- b. By the 2022 fire season, emission from islanding the substation during PSPS events should be significantly reduced, including:
 - i. At least a 90 percent reduction in PM emissions and NOx emissions compared to what would have been emitted if large Tier 2 Diesel Generators had been used instead of the project.
 - ii. Greenhouse gas emissions roughly equivalent to, or less than, emissions from the current and projected future grid mix.
 - iii. The project employs a solution representing a demonstration of a fully renewable microgrid capable of serving load during adverse conditions.
 - iv. The project may be capable of export during normal conditions, but it is not required to do so.

2.5 Total cost of all projects over their expected useful life may not exceed \$350 million. The cost of any single project may not exceed \$120 million. Requiring a utility to initiate clean substation microgrid projects gives room for multiple different solutions to be

tested, and a broader baseline of knowledge to be developed, while working on a full framework in 2021 for future years. The accompanying conditions ensure that projects are feasible, clean, cost-effective, and low risk. Based on the threshold costs and limited number of projects in the earlier CPUC proposal, expenditures by any utility may not exceed a total of \$120 million or \$350 million dollars *for the three utilities in the aggregate.*