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

CLEAN COALITION OPENIN COMMENTS IN RESPONSE ASSIGNED COMMISSIONER AND ADMINISTRATIVE LAW JUDGE'S RULING SEEKING COMMENT ON POLICY QUESTIONS AND AN INTERIM APPROACH FOR MINIMIZING EMISSIONS FROM GENERATION DURING TRANSMISSION OUTAGES

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I. INTRODUCTION

Pursuant to Rule 6.1 of the Rules of Practice and Procedure of the California Public Utilities Commission ("Commission") the Clean Coalition submits these reply comments in response to the ALJ ruling Seeking Comments on Policy Questions and an Interim Approach for Minimizing Emissions from Generation During Transmission Outages. The Clean Coalition appreciates the opportunity to comments and is of the opinion that the answers to these questions are of critical importance to the future of California's energy landscape, given the more-than-likely possibility that Public Safety Power Shutoffs ("PSPS") will continue for the next decade. Moreover, as successive fire seasons begin earlier and earlier in the year, the regulatory spheres must plan and adapt accordingly. The current presumption that the fire season in California begins in September is being proven woefully incorrect; Governor Newsom had declared a state of emergency by August 18 and fires were burning weeks before then. As such, the CPUC must prioritize long-term renewable solutions that do not pose a fire threat, solutions that do not include natural gas and diesel fuel. Presentations by Tesla and Sunrun during the August 25 Alternatives to Diesel Fuel demonstrated that solar-driven Community Microgrids are capable of providing the necessary backup power, while also providing the ratepayers with the most savings over a long-term period, especially if used for secondary purposes during normal operations. The same can not be said of natural gas or diesel alternatives, which have high fuel costs and are only deployed for a single purpose. Thus, the mindset of the ALJ policy questions, which consider alternatives with the same framework as it does current diesel contracts, essentially, "short-term, interim and targeted use only," must be expanded to consider total value and total resource costs.

The Clean Coalition believes it is a priority to ensure that diesel fuel is not a prolonged solution beyond 2020. As is on the record in Track 1, most parties in the proceeding were strongly against the use of a fossil fuel. The Commission noted the widespread objections in D. 20-06-017 but prioritized the fuel as the only dispatchable solution for the 2020 fire season. In discussing the subject before the vote, the Commissioners were very clear that while they did not promote the use of the fuel, on balance, it was a necessity, though one that would only be acceptable in 2020 due to the short timeframe. The language of the decision notes, "PG&E's use of temporary diesel generation for customers impacted by PSPS outages must be limited to one year from execution of vendor agreements enacted within 2020 – it is not a long-term resiliency strategy."[1] Further down the page, the decision reiterates the sentiment with the statement, "Again, diesel generation cannot be a long-term resiliency strategy."[2] Those statements do not appear to be in line with the sentiments espoused in the ALJ ruling and attachments to the ALJ ruling. In fact, the ALJ ruling suggests that the Commission has resigned itself to using diesel once again in 2021 and potentially in following years. Attachment B, section II, question 4 includes a requirement for a timeline demonstrating, "support for cleaner temporary generation products will reduce the need to deploy diesel and other fossil resources over the next 5/10 years."[3] Suddenly, diesel fuel and other fuels could be acceptable in some form for the next decade? The entire ruling is an acknowledgement that PG&E will most likely reserve diesel once again in 2021 and could conceivably do the same in years to come, while having ratepayers foot the bill. This is unacceptable and completely against the strong language iterated in D. 20-06-017 and SB 1339, which focuses on the aggregation of Distributed Energy Resources ("DER"). The Commission reduces its credibility when it explicitly states that diesel is only acceptable in 2020 because of the short timeline of the proceeding and will not be used in the coming years; it is saying one thing and doing the exact opposite.

II. DESCRIPTION OF PARTY

The Clean Coalition is a nonprofit organization whose mission is to accelerate the transition to renewable energy and a modern grid through technical, policy, and project development expertise. The Clean Coalition drives policy innovation to remove barriers to procurement and

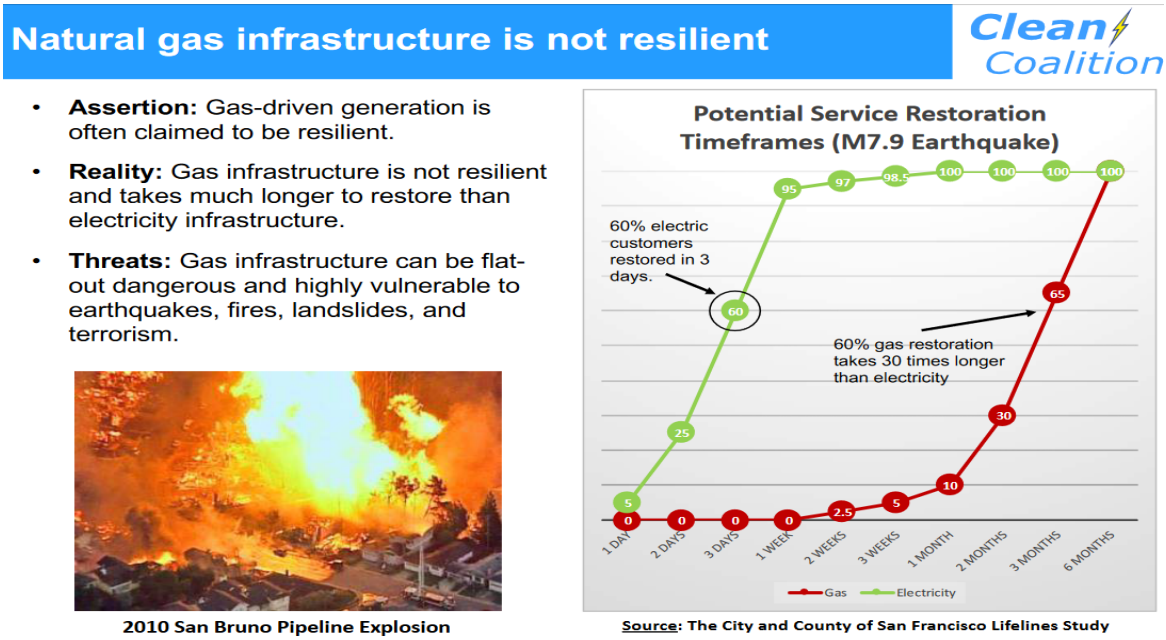
[1] D. 20-06-017 at 81-82
[2] Ibid at 82
[3] ALJ Ruling, Attachment B at 5

interconnection of distributed energy resources ("DER") — such as local renewables, demand response, and energy storage — and we establish market mechanisms that realize the full potential of integrating these solutions for optimized economic, environmental, and resilience benefits. The Clean Coalition also collaborates with utilities, municipalities, property owners, and other stakeholders to create near-term deployment opportunities that prove the unparalleled benefits of local renewables and other DER.

III. COMMENTS

a. Natural gas cannot be considered a "safe" methods of backup power.

It is worth noting that natural gas or other gas-based solutions delivered via pipeline cannot be considered a safe or sustainable method of backup power.



Natural gas does not provide resilience

As the chart above demonstrates, replacing natural gas infrastructure takes 30 times longer than it does to repair electric infrastructure after a natural disaster like an earthquake. It is sensible to take a little more time to build lasting resources that add to the state's renewable energy goals rather than carbon-emitting resources. While that might mean using small amounts of diesel fuel as a transition resource to act in concert with solar microgrids as the final product is being developed, it is certainly preferable to relying on natural gas. That, however, does not absolve the Commission from the promises it made that diesel fuel would only be used as a short-term option in 2020.

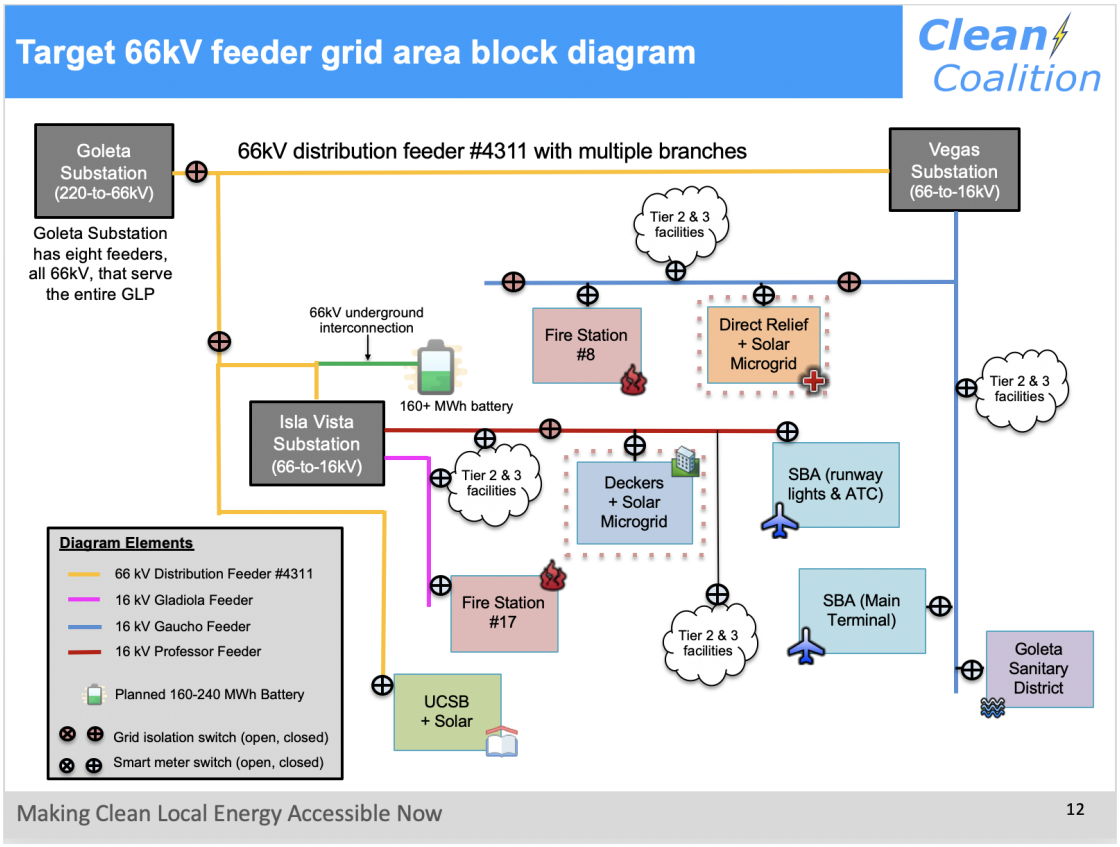
b. Solar Community Microgrids meeting the requirement of operability by October 2021.

The August 25, 2020 Sunrun presentation demonstrates the potential for 100% operability by October 2021, meeting the standard the proceeding has created for alternatives for diesel. Tesla's presentation, also proposing a solar microgrid, suggested a similar COD date. Both developers guaranteed the microgrids would be ready to operate by 2022. Thus, it is unclear as to why the Commission includes the phrase, "A clear path forward for the complete replacement of diesel… did not emerge from the workshop," in Attachment B.[4] The Clean Coalition argues that the Commission's conclusion is incorrect; the proposed microgrids are the exact combination of solar, storage, and DER aggregation suggested in SB 1339. The suggestion that a temporary approach is needed for 2021 followed by the development of a longer-term framework to transition to renewables is mystifying when a presentation of such alternatives has already been made. There has been no explanation as to why these renewables-driven microgrids are not feasible — they provide resilience, reliability, and a net cost savings over time. On what basis has the Commission ruled them out? The rational is unclear, making it difficult for solar microgrid developers to respond, or change their proposals accordingly. In a proceeding focused on commercializing microgrids across the state, the lack of transparency is actually raising a barrier, rather than removing them.

It is rather inexplicable that the Commission would rule out *all* proposed options after seemingly dragging its feet on the subject for around three months. The Track 1 Decision was issued on June 11, yet it took until August 25 to even begin to consider alternatives to diesel fuel. This is a subject concerning only one of the three major utilities, PG&E. PG&E and the Commission knew that the same problem would be of concern in 2021, yet nothing was done for almost three months to find a solution following the Track 1 decision. If projects were started even two months earlier than the timelines represented in the August presentations, the COD in the Sunrun project might be August 2021 or September 2021, rather than October 2021. The Commission and PG&E wasted precious time and are trying to bail themselves out with the use of diesel fuel, a clear dereliction of the responsibility afforded in D. 20-06-017 and a snub to the ratepayers who will have to suffer adverse health consequences. Solar microgrids are the most

[4] Ibid at 1

beneficial way to reduce reliance from diesel fuel and provide a natural transition process that can be achieved by the end of fire season 2021. As the solar+storage resources are developed and a greater aggregation of renewable resources is achieved, the number of diesel generators will go down, creating a gradual transition to 100% renewables-driven backup power. While the solar microgrid may not be capable of sustaining an entire grid area at the beginning of the fire season, it will be capable of energizing critical community facilities. The diagram below is a block area in the Goleta Load Pocket[5] that contains a significant number of critical community facilities.



The critical facilities shown on the block diagram only use about 8% of the total energy on the feeder, meaning that sustaining the load primarily with a solar microgrid and supplementing is with a small number of as-needed diesel generators is a reasonable strategy. It is certainly a better option than 100% diesel or relying on natural gas generation. In combination with the diesel generators, powering a grid area is feasible in the interim as the microgrid is completed, which will make the generators obsolete over time.

[5] https://clean-coalition.org/community-microgrids/goleta-load-pocket/

c. 2.1.1. General Policy Questions

1. *Are there duplicative efforts relating to infrastructure hardening and resiliency planning occurring between this proceeding, Rulemaking (R.) 19-09-009, and other proceedings such as R.18-10-007, the Order Instituting Rulemaking to Implement Electric Utility Wildfire Mitigation Plans Pursuant to Senate Bill 901, or general rate cases, that could expose ratepayers to either duplicative or excessive costs?*

No, there are not duplicative efforts, or this question may have been solved in a timely manner. Diesel was deemed a last option, only to be used in the short-term, but it's use is seemingly all but guaranteed in 2021, with the Commission specifying a lack of time as the reason.

2. *Energy Resource Cost Effectiveness & Reliability: What fuel and technology resources should the Commission consider, as preferred solutions that reduce reliance on diesel for providing power during transmission outages?*

The use of diesel fuel should be kept to an absolute minimum, ensuring that it is interconnected to a solar microgrid only as a temporary resource. In the ideal configuration for solar+storage+diesel, the diesel generator should only be used as a backup to the backup power. Thus, temporary generators are preferable to stationary generators. The table below demonstrates the sizing necessary to sustain the load of different critical facilities indefinitely for a specific municipality in California. The same methodology could be used to sustain the critical facilities in a swathe of the distribution grid in the case of a transmission outage or the need for diesel to supplement solar+storage as the full microgrid is developed.

Description of scenarios, resources, and load served

Clean Coalition

Site	Scenarios	Resources	Load served
City Hall	Solar+Storage	Solar+Storage	150% of average daily load Indefinite
	Storage Only	Storage Only	150% of average daily load for 5 days
	Diesel Only	Diesel Only	150% of average daily load for 5 days
	Solar+Storage+Diesel	Solar+Storage+Diesel	150% of average daily load for 5 days or 19.6% of average daily loads indefinite
Corp Yard	Solar+Storage	Solar+Storage	150% of average daily load Indefinite
	Storage Only	Storage Only	150% of average daily load for 5 days
	Diesel Only	Diesel Only	150% of average daily load for 5 days
	Solar+Storage+Diesel	Solar+Storage+Diesel	150% of average daily load for 5 days or 16.0% of average daily loads indefinite
Library	Solar+Storage	Solar+Storage	150% of average daily load Indefinite
	Storage Only	Storage Only	150% of average daily load for 5 days
	Diesel Only	Diesel Only	150% of average daily load for 5 days
	Solar+Storage+Diesel	Solar+Storage+Diesel	150% of average daily load for 5 days or 21.8% of average daily loads indefinite
Police Station	Solar+Storage	Solar+Storage	150% of average daily load Indefinite
	Storage Only	Storage Only	150% of average daily load for 5 days
	Diesel Only	Diesel Only	150% of average daily load for 5 days
	Solar+Storage+Diesel	Solar+Storage+Diesel	150% of average daily load for 5 days or 25.4% of average daily loads indefinite
WWTP	Solar+Storage	Solar+Storage	150% of average daily load Indefinite
	Storage Only	Storage Only	150% of average daily load for 5 days
	Diesel Only	Diesel Only	150% of average daily load for 5 days
	Solar+Storage+Diesel	Solar+Storage+Diesel	150% of average daily load for 5 days or 18.4% of average daily loads indefinite

Note: Solar+Storage is oversized to cover loads for full 120 hours during worst solar period.
Solar+Storage+Diesel is sized to ZNE solar and 1-2 hour storage.

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If configured properly, the solar+storage can keep 15-25% of the load online indefinitely, even in the even that diesel fuel cannot be resupplied. However, the focus should be on the development of commercial and residential solar, which needs to begin as quickly as possible. As the Clean Coalition has mentioned in previous comments, solar developed on built environments does not require a CEQA review, meaning that it can occur in a timelier fashion than other utility-scale developments. As a result, it is more than possible to transition to renewable resources during 2021 and ensure 100% renewables-driven microgrids before the 2022 fire season begins.

3. *Cost Implications: What weight should the Commission give to cost when weighing the need to transition to preferred resources for resiliency? How should alternatives be evaluated for their costs and benefits? How should those costs be allocated and collected?*

As mentioned above, the Commission should consider total resource cost as well as net benefits when evaluating transition plans. On balance, solar microgrids have greater longevity and net benefits to the ratepayers than diesel or other resources. The Sunrun presentation

demonstrated that over the course of 10 years, powering a grid area with a solar microgrid saves the ratepayers $3 million when compared to using diesel, a calculation that doesn't factor in the extra costs from the pollution caused by diesel fuel. The Tesla presentation suggests that in comparison, a solar microgrid have net costs that are 57% lower than a total diesel solution when including the total value. In all likelihood, a solar microgrid would be sustainable for 15 years or longer, increasing the value when compared to fossil fuel alternatives.

d. 2.1.3 Alternative Resource Proponent Questions

1. *Portability: Rather than a permanent, stationary presence at a substation, can a diesel alternative resource be optimized as a mobile or portable solution? Please respond with a "yes" or a "no". If yes, please provide and discuss the schedule, scope of product design, any manufacturing adjustments, and fueling/refueling logistics. If no, discuss your reasoning.*

No, because a solar microgrid requires the precise aggregation of behind-the-meter (BTM) and front-of-the-meter (FOM) solar resources. Diesel generation can be removed as more solar is deployed and the microgrid can be expanded, but it is a permanent solution.

2. *Testing at Scale: Discuss the testing and scale of the diesel alternative energy resource that the Commission is being asked to consider. In your discussion, you must state: (a) the extent to which this alternative energy resource has been deployed during a natural disaster or man -made emergency (i.e., earthquake, wildfire, etc.); (b) the demographics of the population the alternative energy resource served during this emergency; (c) the context of the regulatory framework under which the alternative energy resource was employed; (d) what stress-testing the alternative energy resource passed to ensure reliability during an emergency; (e) testing of the alternative energy resource in controlled settings; (f) dynamic tests; and (g) field tests.*

Solar microgrids have been tested during outages across the states such as the Borrego Springs microgrid and on smaller grid areas, such as the UCSD microgrid. RCAM will also demonstrate the feasibility in PG&E's service territory when it is online. Given the urgency of replacing diesel before the end of 2021, the time for pilot projects has long since passed. Solar microgrids are tried and true, now the question is about PG&E's capability to coordinate the development of such a large number of microgrids effectively.

3. No comments
4. No comment

5. No comment
6. *Customer Solar and Storage: Should the Commission consider alternative energy resources that involve centralized management of behind the meter installations of customer solar and storage as a near-term alternative to deploying temporary diesel generation at the substation level? Why or why not? What is the estimated time and uncertainty related to customer adoption of residential solar and storage that could be centrally managed for the purpose of serving all customer load associated with the same substation? What is the basis for these estimates?*

The Commission should prioritize solar microgrids as the most effective long-term solution; there is a natural transition away from diesel as more solar resources are added to the microgrid. Centralized management is an essential aspect of a solar microgrid, especially since the aggregation of BTM resources will be a necessary component of such a microgrid. A key aspect of BTM resources could be unlocked if there are changes to Net Energy Metering allowing for further oversizing of solar resources on residential properties, increasing the energy available to be utilized for resilience purposes as part of a Community Microgrid. While there are uncertainties surrounding existing penetrations of PV around a given substation in some locations, effective policies — such as a Feed-In Tariff[6] — could effectively increase the amount of energy on the residential/commercial side or the utility-scale deployments. Customer uncertainty will be low if there are sufficient incentive programs that reward residents for providing resilience and if PG&E is effective with outreach about the importance of Community Microgrid development. As PG&E espoused in its Community Microgrid Enablement Program Advice Letter, it has to act as a community partner rather than a competitor.

7. *Critical Loads Microgrids: Should the Commission consider alternatives to substation-level temporary generation that focus on serving a small segment of critical loads in lieu of energizing all substation load? (Note: Such an approach would leave some safe-to-energize customers without power.)*

This question is primarily answered above. Depending on the risk, it is feasible to promote the use of critical facility microgrids, especially where the threat is lower or other grid hardening mechanisms are being used. Critical facility microgrids offer a transition plan to a greater

[6] https://clean-coalition.org/wp-content/uploads/2019/09/San-Diego-Final-FIT-Design-Recommendations-31_wb-9-Sep-2019.pdf

Community Microgrid, especially in areas where there are low penetrations of PV. As more solar resources are deployed, an area can transition from sustaining critical loads to entire grid areas during outages.

e. 2.2. Interim Approach for Minimizing Emissions From Generation During a Transmission Outage in 2021

At this time, pilot projects are not needed. Multiple third-party developers have demonstrated the feasibility of sustaining Community Microgrids to sustain grid areas in the event of a transmission outage through renewables-driven backup power. What is needed it the immediate and sustained deployment of renewable resources, primarily PV on a commercial, residential, and utility-scale level to ensure that interconnecting those resources with storage and a microgrid system has the necessary power to sustain the entire grid area.

f. 2.3. Process for Transitioning to Clean Temporary Generation in 2022 and Beyond

The Clean Coalition does not support a transition process beginning in 2022 and continuing for the next 5-10 years — that is much too slow and does not take advantage of the resources presently available. It would be a mistake to focus on changing slowly over next decade; to keep the population safe and achieve goals outlined by the legislature the transition must begin now and accelerate through 2021 as more renewable resources are added. It should be concluded, optimally by the end of 2021, but if not, entirely before the beginning of fire season 2022.

IV. CONCLUSION

The Clean Coalition appreciates the opportunity to submit these comments. It is unfortunate that Commission has presented a situation in which diesel will continue to be an integral part of resilience, especially when it was intended only as a temporary measure for 2020. To allow the use of diesel or polluting fossil fuels beyond 2021 would only compound the mistake, especially considering that renewable alternatives are available and can be completed before the end of the 2021 fire season. We implore the Commission to promote the deployment of solar microgrid, the best option when considering net benefits, societal costs, and total resource costs.

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