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 SUBMISSION OF THE RESILIENT ENERGY SUBSCRIPTION INTO THE RECORD AS A DRAFT MICROGRID MULTI-PROPERTY TARIFF

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I. INTRODUCTION

Pursuant to Rule 6.2 of the California Public Utilities Commission ("the Commission") Rules of Practice and Procedure, the Clean Coalition respectfully submits these comments detailing the Resilient Energy Subscription ("RES") in response to the *Assigned Commissioner's and Administrative Law Judge's* ("ALJ") *Ruling Denying Joint Parties' Motion to Amend Scoping Memo and Ruling for Track 5, and Modifying Track 5 Schedule of Activities*, issued at the Commission on October 23, 2023, and *Email Ruling Granting In Part, and Denying In Part, The Oct. 31, 2023 Motion Filed by the Center for Biological Diversity* ("CBD")*, Et Al.,* issued at the Commission on November 7, 2023. The Clean Coalition appreciates the opportunity to submit the RES, which is a fee-based market mechanism that can complement the rules/requirements in other tariffs. The RES provides the missing piece of the puzzle to cost-effectively finance the deployment of resilience solutions in a way that benefits participating ratepayers, critical facilities, and the Community Microgrid owner-operator. We believe that this streamlined market mechanism will help provide the Commission the certainty that Community Microgrids can be deployed in a standardized, safe, and secure manner that provides resilience and protects ratepayer interests.

II. EXPLANATION OF THE RES

As explained in the Clean Coalition's Comments on Utility-Proposed Multi-Property Microgrid Tariffs, the RES is a straightforward market mechanism that allows any facility within the footprint of a Community Microgrid to pay a simple ($/kWh) fee on top of its normal electricity tariff for guaranteed daily delivery of locally generated renewable energy during grid outages, ensuring unparalleled energy resilience.[1] The aggregation of RES fees from all participating customers within the footprint of a Community Microgrid will be sufficient to cover the cost of

[1] Clean Coalition Comments on Utility-Proposed Multi-Property Microgrid Tariffs, at p. 10.

service ("COS") of providing the customers with an appropriate level of resilience[2], including an appropriate rate of return ("ROR") for the microgrid owner and/or operator and socializing the cost of resilience for the most critical loads at critical community facilities ("CCFs"). Utilizing the RES effectively combines the utility obligation for safe service at just and reasonable rates with the societal need for a level resilience that preserves critical community functionality in the event of a grid outages and minimizes the damage, by saving lives first, and reducing economic losses second. Doing so directly benefits the customers within the footprint of the Community Microgrid who are paying a premium for resilience, the utility (who will receive profit during an outage scenario, which would otherwise not be possible), and customers around the region who benefit from having critical services available. Therefore, without creating a cost shift of any type, other ratepayers in the utility's service territory will be able to benefit from a more resilient communities and CCFs, as well as the possibility of the expansion of the footprint of the Community Microgrid over time. The RES helps finance Community Microgrids while properly valuing their significant resilience benefits, addressing these three challenges:

- **Establishing** initial Community Microgrids to provide resilience to CCFs.
- **Enhancing** Community Microgrids to offer resilience opportunities within the initial Community Microgrid footprint.
- **Expanding** Community Microgrids to larger footprints that can guarantee resilience to a wider list of facilities and include additional communities.

RES offers a methodology to address all these issues, allowing a utility to plan strategically for resilience—in tandem with societal needs—by aggregating RES allocations as they are contracted by facilities across the Community Microgrid footprint.[3]

Thus far, very few Community Microgrids have been deployed throughout the state; few, if any, have been deployed with zero grant or philanthropic dollars associated with the project. The RES offers a way to close the circle of economics, providing resilience-as-a-service in a scalable and replicable way that does not rely on the utility to directly fund the Community Microgrid through compensation for market participation in non-standard ways or via grid services that do not currently exist. Importantly, the RES is a market construct that can be utilized alongside a tariff like the utility's proposed Community Microgrid Enablement Tariff ("CMET") and is a fee that will be

[2] The phrase, "an appropriate level of resilience," will be defined below.
[3] Clean Coalition Comments on Utility-Proposed Multi-Property Microgrid Tariffs, at p. 10.

added on top of billing associated with the customer's otherwise applicable tariff ("OAT"). With the lack of a standardized value of resilience ("VOR") adopted by the state, the RES provides a mechanism to value resilience at both a facility and distribution-grid level, allowing resilience to be justifiable for individuals and on a societal basis.

Because the RES ensures a contracted level of resilience during grid outages of any duration, each facility can decide what percentage of its total electric load to include in its RES allocation and then perform appropriate behind-the-meter ("BTM") load management to stay within its guaranteed daily RES load budget during grid outages. While energy will first be reserved for the most critical loads within a community, ultimately, each individual facility will decide which loads are critical and procure resilience for those loads via a transparent fee that covers the COS of provisioning such energy resilience from a Community Microgrid. There are two fundamental features of the RES:

1. Facilities located within the footprint of a Community Microgrid have the opportunity to procure resilience, through a monthly $/kWh RES fee that is separate from any existing rate tariffs. A facility will pay the RES fee to reserve a guaranteed allotment of daily delivered energy when the traditional transmission and distribution grids are unavailable for any reason, including natural disasters, terrorism, and repairs.
2. Through RES fees, the Community Microgrid owner-operators will recover the COS that is required to meet the contracted RES obligations. As is standard in the utility industry, COS is determined by the capital expenditures ("capex") associated with Community Microgrid assets, operational expenditures ("opex") associated with operations and maintenance ("O&M"), and an appropriate ROR.[4]

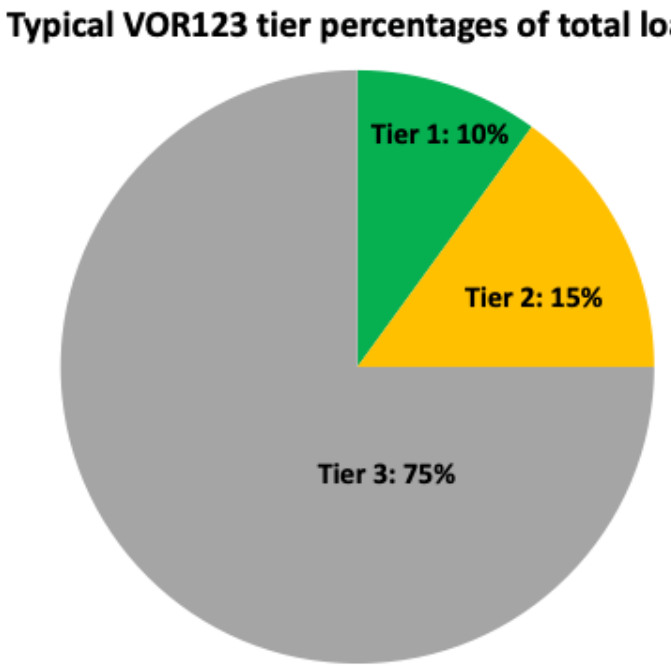
Under normal grid conditions, facilities will operate with all loads served. Community Microgrids are sized to deliver resilience during grid outages of any duration, including over numerous days of low solar production, meaning that Community Microgrids will generally deliver far more energy than the RES allocations during grid outages — given that solar production is otherwise always better than the worst-case RES design period. When there is a shortage of available energy during grid outages, however, a Community Microgrid is obligated to deliver only to RES limits, and any customer reaching its RES limit can be turned off at its meter. This means that the Community Microgrid operator will have the ability to remotely shut-off smart meters, which has been

[4] *Ibid*, at p. 11.

demonstrated to be technically feasible in other utility service territories and should not inhibit the facilitation of the RES in California.[5] RES subscriptions will be offered on a first-come, first-served basis, only limited by Community Microgrid subscription capacity, which of course will expand as subscription waitlists grow. Community Microgrid owner-operators will be careful to ensure that RES commitments can be met.

A. Using VOR123 to determine a prospective RES buyer's interest in resilience

While COS is appropriate for pricing the RES fee, prospective Community Microgrid customers (i.e., RES buyers) might want an easy way to assess the VOR. As such, the Clean Coalition has developed a straightforward methodology for calculating the VOR, and it applies to individual facilities and larger grid areas alike. The VOR methodology is known as VOR123[6] because it tiers electric loads into three tiers, regardless of facility type or location:



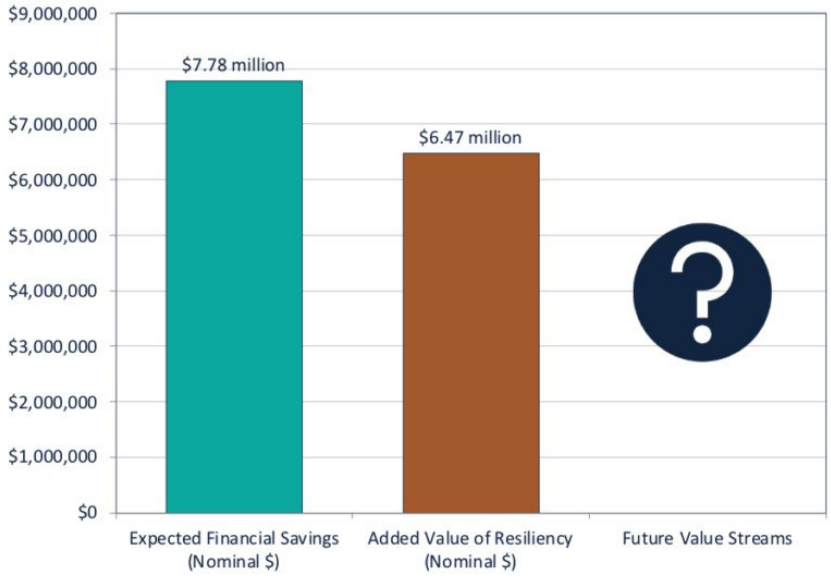
Tier 1, usually about 10% of the total load, are mission-critical, life-sustaining loads that warrant 100% resilience. **Tier 2, or priority loads, usually about 15% of the total load**, should be maintained as long as doing so does not threaten the ability to maintain Tier 1 loads. Lastly, **Tier 3**

[5] Example from Public Service Enterprise Group ("PSEG"): https://energizepseg.com/2021/11/16/smart-meters-you-asked-we-answered/
Example from American Electric Power ("AEP"): https://smartgrid.epri.com/UseCases/Meter%20Remote%20Connect%20Disconnect_ph2add.pdf

[6] https://clean-coalition.org/disaster-resilience/

are discretionary loads that make up the remaining loads, usually about 75% of the total load. Tier 3 loads should only be maintained when doing so does not threaten Tier 1 and Tier 2 resilience.[7]

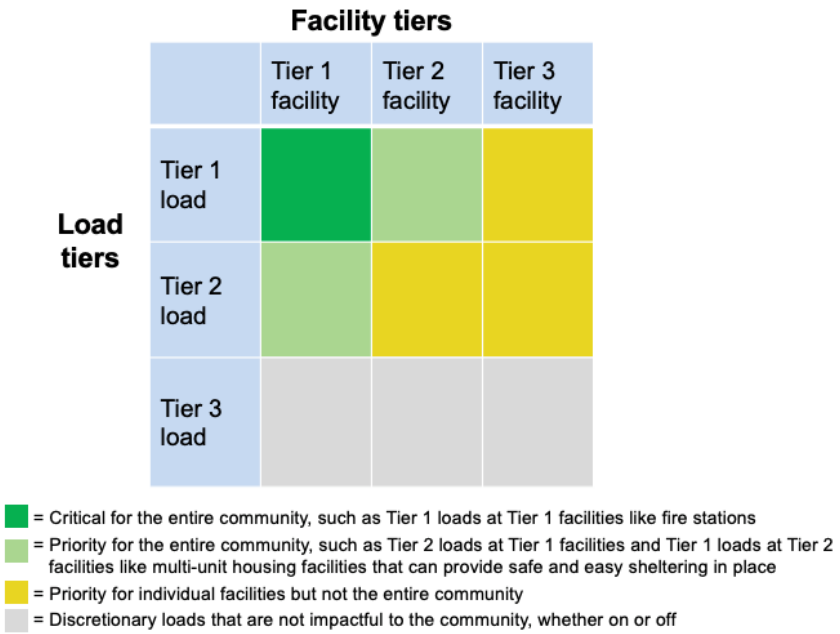
Based on this tiering system, the Clean Coalition arrived at 25% as the typical VOR123 adder that a site should be willing to pay for resilience. The Clean Coalition has validated the 25% adder using four approaches: COS, the Department of Energy ("DOE") multiplier, a market-based approach, and an avoided diesel generator cost.[8] Our VOR123 load tiering approach is included in the Track 2 Staff Concept Paper, on page 94 and 112 (of the pdf).[9] We also applied VOR123 to the Solar Microgrids deployed for the Santa Barbara Unified School District ("SBUSD"), which is getting significant resilience benefits in addition to savings from reduced energy costs. Due to rate increases since this economic analysis was conducted in 2021, the savings is likely far greater than what was originally calculated.



Bill savings and resilience value accruing to the SBUSD from six Solar Microgrid sites plus eight additional solar-only sites.

The same VOR123 principle can be applied to a larger grid area — with Tier 1 facilities being the most critical to a community.[10]

[7] Clean Coalition Comments on Utility-Proposed Multi-Property Microgrid Tariffs, at p. 11-12.
[8] https://clean-coalition.org/disaster-resilience/#adder
[9] https://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M344/K038/344038386.PDF
[10] Clean Coalition Comments on Utility-Proposed Multi-Property Microgrid Tariffs, at p. 12-13.



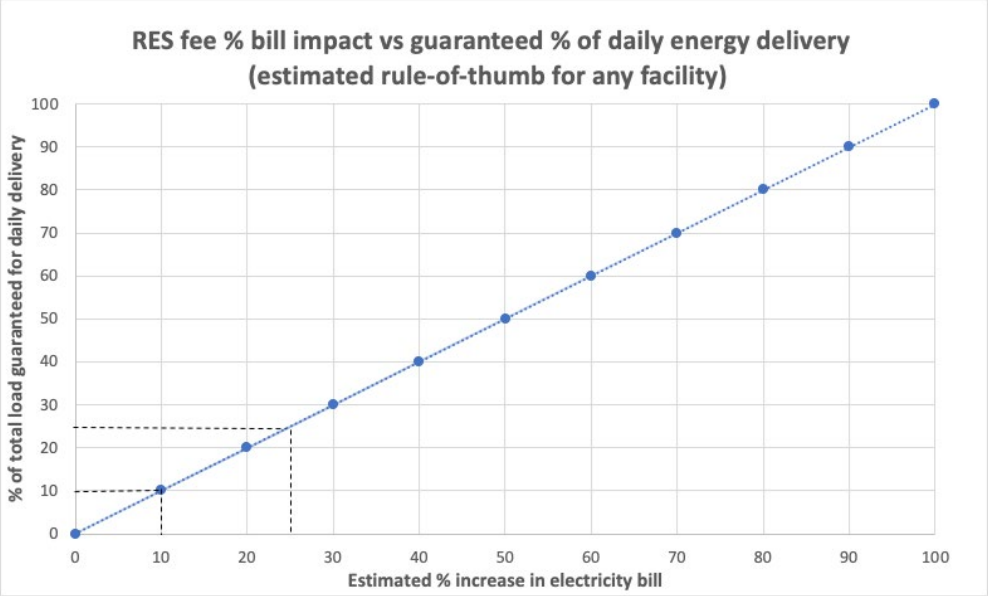
Though a given community might have unique preferences, in most cases, the load tier percentages for a Community Microgrid will mirror the typical load tier percentages for individual facilities: 10% for Tier 1 loads, 15% for Tier 2 loads, and 75% for Tier 3 loads. The chart above demonstrates that the top emphasis will be to provision 100% resilience for Tier 1 loads at Tier 1 facilities (the darker green square) — followed a secondary emphasis for Tier 1 loads at Tier 2 facilities and Tier 2 loads at Tier 1 facilities (the lighter green squares).

Tier 1 facilities include CCFs such as fire stations and emergency shelters. Depending on community priorities, other Tier 1 facilities could include grocery stores, banks, data centers, pharmacies, gas stations, electric vehicle ("EV") charging stations, and apartment complexes that can provide efficient sheltering-in-place capabilities[11] during grid outages to help avoid overwhelming emergency shelter facilities that should be reserved for people that cannot be easily sheltered in place. Due to the critical role that Tier 1 facilities play in keeping communities safe and functioning, the COS for serving all Tier 1 loads at Tier 1 facilities should be socialized, much like the way in which costs associated with the transmission and distribution ("T&D") grids are socialized via rate-basing.[12]

[11] https://clean-coalition.org/community-microgrids/valencia-gardens-energy-storage-project/
[12] In addition to unparalleled resilience value for CCFs, Community Microgrids provide substantial economic benefits daily by generating energy and obviating massive transmission investments.

Given the societal value of Tier 1 facilities in preserving key community functions, the Clean Coalition believes that it is more than reasonable to rate-base the associated COS for Community Microgrids to a level that they can deliver RES allocations covering Tier 1 loads at Tier 1 facilities — and arguably Tier 2 loads at Tier 1 facilities, too. The same is true for Tier 1 loads at Tier 2 facilities.

Importantly, once an initial Community Microgrid is established to serve CCFs, the incremental COS for expanding the Community Microgrid via the market-based RES will be relatively low. In general, the Clean Coalition expects that for each 1% of load that a facility secures via a RES, a 1% electricity bill increase should be expected, as shown in this chart (below):



For facilities trying to determine the most cost-appropriate RES allocation, using the VOR123 methodology, relying on empirical data from past grid outages, or some other method (to determine its load tiering, VOR, and appetite for RES fees) will all work. In addition, facilities with existing onsite generation, such as rooftop solar, who would otherwise lose power during a grid outage can reserve a small RES allocation to ensure that the power stays on and the generation can continue producing energy. A RES contract will ensure that the facility maintains uninterrupted electricity service during grid outages — from the Community Microgrid, and the onsite self-generation will cover at least a portion of their resilience requirements. Hence, such Community Microgrid subscribers will enjoy uninterrupted self-generated solar while also receiving RES-contracted energy from the Community Microgrid, unless energy availability is low from the Community Microgrid **and** the RES-contracted energy allocation has been exceeded on a given day.

The Clean Coalition analyzed factors from a real-world design for a Community Microgrid in Southern California to get the following data:

Factor	Amount	Units
RES fee	0.20	$/kWh
Tariff for energy sold to utility	0.10	$/kWh
Daily site load guaranteed by RES	2,300	kWh
PV+BESS financial incentives	1,800,000	$
PV size	1,500	kW
PV capex	3,000,000	$
BESS size	2,000	kWh
BESS capex	1,400,000	$
Microgrid hardware + MC2*	500,000	$
PV annual opex	7,000	$/year
BESS annual opex	5,000	$/year
Microgrid MC2 annual opex	15,000	$/year

The financial inflows include RES fees[13], energy sold to the utility on an everyday basis, and solar & storage financial incentives. The financial outflows include capex and opex costs. Based on these expenses and income over 30 years (see table below), the Clean Coalition has calculated that the Community Microgrid owner will see an internal rate of return of at least **9%.**

[13] Income from RES fees depends on the maximum guaranteed daily energy from the Community Microgrid. The Clean Coalition calculates this quantity using its state-of-charge for resilience (SOCr) methodology, which analyzes BESS capacity against actual solar generation and site load profiles.

Microgrid financial outflows:

	Year:	Capex	Opex
PV		$3,000,000	$7,000
BESS		$1,400,000	$5,000
Microgrid hardware + MC2		$500,000	$15,000
PV+BESS incentives		-$1,800,000	
Total annual expense:	1	$3,100,000	$27,000
	2	$-	$27,000
	3	$-	$27,000
	4	$-	$27,000

Microgrid financial Inflows:

	RES fees
RES fee ($/kWh)	$0.20
Guaranteed daily load (kWh)	2,300
Total annual income:	$165,000
	$165,000
	$165,000
	$165,000

	Sales to utility
Tariff to utility	$0.10
Annual PV sold (kWh)	2,400,000
	$236,000
	$236,000
	$236,000
	$236,000

The RES provides a revolutionary and straightforward approach for financing Community Microgrids and delivering unparalleled resilience to communities. Irrespective of the final tariff that the Commission adopts, there should be an option for the Community Microgrid Owner/Operator to levy a RES fee for participating customers – ensuring no cost shift to nonparticipating customers, adding a societal planning perspective that benefits all local customers through resilient CCFs, and making deployments in low-income community more feasible due to reduced up-front capital requirements.[14] Because income from RES subscription fees ensures a positive return on the Community Microgrid COS **for Community Microgrid owner-operators** and there is a guarantee of value-appropriate, locally generated resilient energy **for RES subscribers**, the RES is feasible for all involved stakeholders.

III. APPLICATION OF THE RES WITH COMMUNITY MICROGRID USE CASES

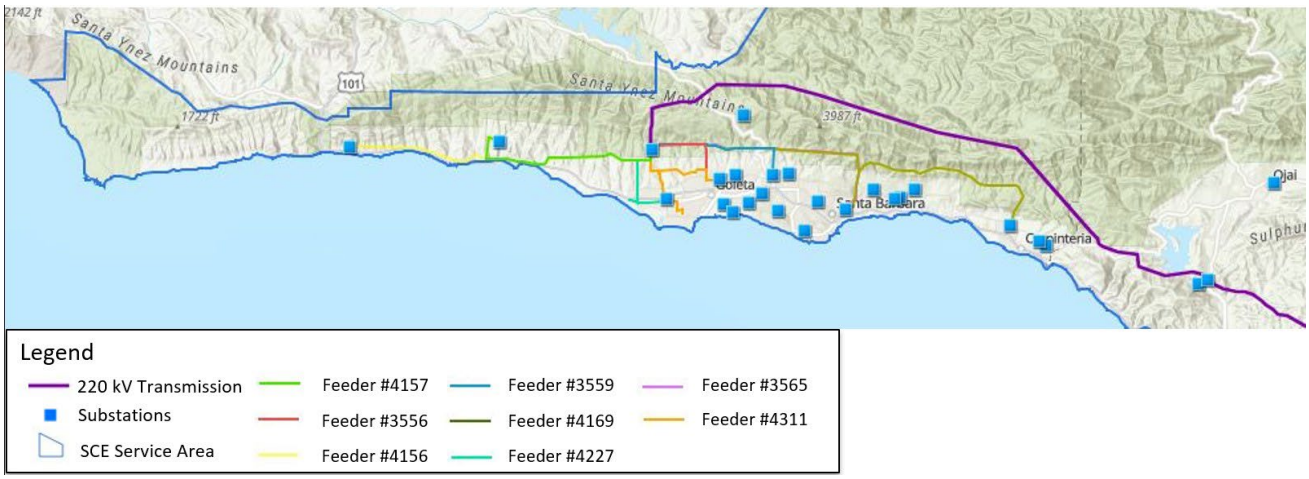
The final Community Microgrid tariff that the Commission chooses to adopt should be equally workable for all types of Community Microgrids, from providing resilience to multi-meter facilities located on one property, to adjacent facilities, to properties located on a single feeder, to entire distribution grid areas at the large end of the spectrum. As will be shown through an analysis of different Community Microgrid use cases below, existing pathways for the deployment of Community Microgrids are designed on an all or nothing basis; either keep the power on for every

[14] Clean Coalition Comments on Utility-Proposed Multi-Property Microgrid Tariffs, at p. 13-15.

facility in the footprint of the Community Microgrid, or for no one. There seems to be no middle ground based on the practical reality that a limited amount of generation/storage and dispersed nature of non-CCFs will require some difficult choices to be made, particularly during the initial deployment of a Community Microgrid.

Moreover, this all or nothing mentality holds parties interested in deploying a Community Microgrid to a higher standard than the utility holds itself to in many cases (when it comes to resilience). The greatest priority, for resilience, from both a societal and utility perspective is preserving functionality for CCFs, such as hospitals and police stations. Other residential and commercial facilities are of secondary importance. For example, in addition to backup generation required to be deployed at hospitals, utilities often design the physical architecture of the distribution grid in a way that increases flexibility/optionality so that there is an alternative pathway to deliver energy in the event of one feeder being de-energized (or losing power). Under the RES, non-CCFs that choose not to reserve a RES allocation may receive energy if there is excess energy available and will receive the benefits of critical services being available, even when the residence itself has been de-energized. Therefore, the RES provides not only an essential financial component, but also the technical ability to design and operate a Community Microgrid in a practical manner.

Other than subpoint a., the other examples are all from a grid vulnerable region at the end of Southern California Edison's ("SCE's") service territory, called the Goleta Load Pocket ("GLP"). The GLP spans 70 miles of coastline, from Point Conception to Lake Casitas, encompassing the cities of Goleta, Santa Barbara, and Carpinteria.



Map of feeders in the GLP

The GLP's only connection to the transmission system is routed through the heart of fire, landslide,

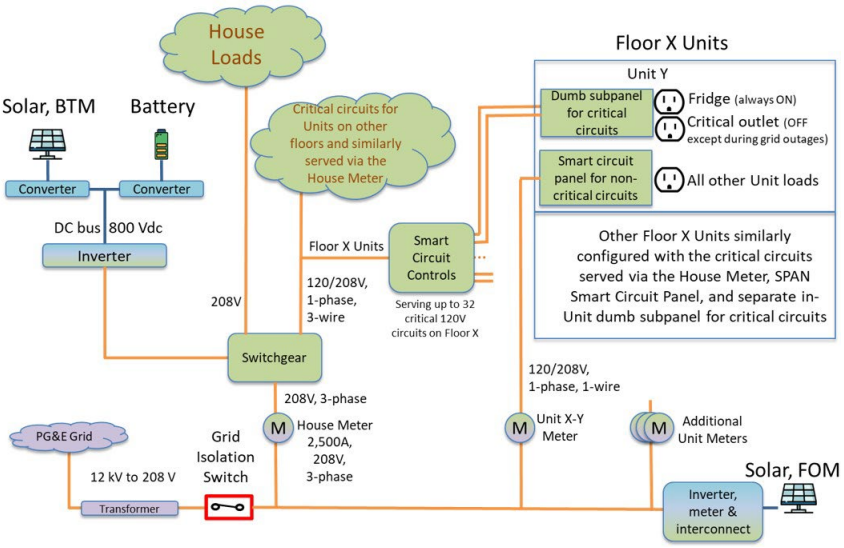
and earthquake zones via the Goleta Substation. The highly vulnerable transmission route is shown as a purple line in the maps above and below, and as can be seen in the fire risk map below, the GLP's transmission connection is routed through a treacherous fire zone.

Map of the GLP overlayed with fire threat districts in the region

The Clean Coalition has worked to size a Community Microgrid capable of sustaining the most critical loads in the region for an extended period. Achieving indefinite renewables-driven backup power that provides 100% protection to the GLP against a complete transmission outage ("known as an "N-2 event") will require 200 MW of solar and 400 MWh of energy storage to be sited within the GLP and a tariff that enables the deployment of a Community Microgrid of that size.

a. Deploying a Community Microgrid at a multi-meter single-property facility.

The Berkeley Efficient and Mixed-Use Showcase ("BERMUS") is a California Energy Commission ("CEC") grant-funded project that must be Net Zero Energy ("NZE"), provide resilience to the most critical loads that preserve the site's functionality, and have grid optimal performance (e.g., net zero imports during the daily peak period, from 4-9 p.m.). The facility has multiple residential and commercial meters, necessitating usage of the utility's distribution grid to island and enable resilience. As a result, the project is currently going through the evaluation process for PG&E's CMET, though there is some debate about whether the CMET is applicable because the site is located on a single parcel of land. There is also a question of whether the front-of-meter ("FOM") virtual net energy metering ("VNEM") array will continue to function in the event of an outage and can serve PG&E meters, adding complexity. Finally, the current structure of the CMET, which only allows islanding of the microgrid during black sky conditions limits the site's ability to fully enable the grid optimal performance. See the block diagram for BERMUS, below.

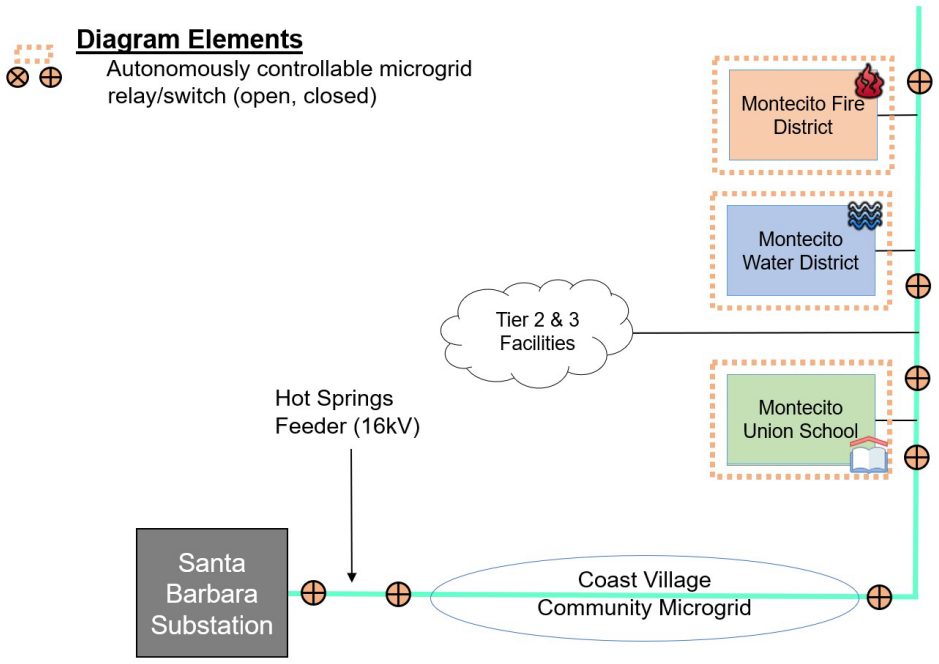


Block Diagram for the Berkeley Efficient and Resilient Mixed-Use Showcase ("BERMUS")

Because of the strict eligibility criteria associated with PG&E's Community Microgrid Enablement Program ("CMEP"), BERMUS does not qualify to have the cost of required infrastructure (namely the grid isolation switch) covered by ratepayer funds. Utilizing the RES offers an effective mechanism for the site to recover the cost of deploying the grid isolation switch and any other infrastructure associated with deploying the Community Microgrid, while allowing each resident to determine what the appropriate level of resilience for their needs is, creating a more accurate financial mechanism than a typical power purchase agreement ("PPA"). Moreover, if the utility is the Community Microgrid owner-operator in this case, a more ironclad agreement could be put into place allowing the site to island during the 4-9 p.m. period on a daily basis—creating a predictable operating pattern for the utility and fully enabling grid optimal performance—and utilizing the least amount of the utility's distribution infrastructure as possible, so as to not create a situation where any other utility customers would be impacted by BERMUS' daily islanding patterns.

b. Deploying a Community Microgrid for adjacent critical facilities.

The block diagram below shows a the Hot Springs Feeder in Montecito, California, where a Fire District is adjected to the local Water District. Just down the street (on the same feeder) is the Montecito Union School, which is an emergency shelter site and the location where emergency response services are coordinated. Thus, there are three CCFs located within a short distance of each other, creating the perfect opportunity to site a Community Microgrid designed to provision resilience for these critical services.

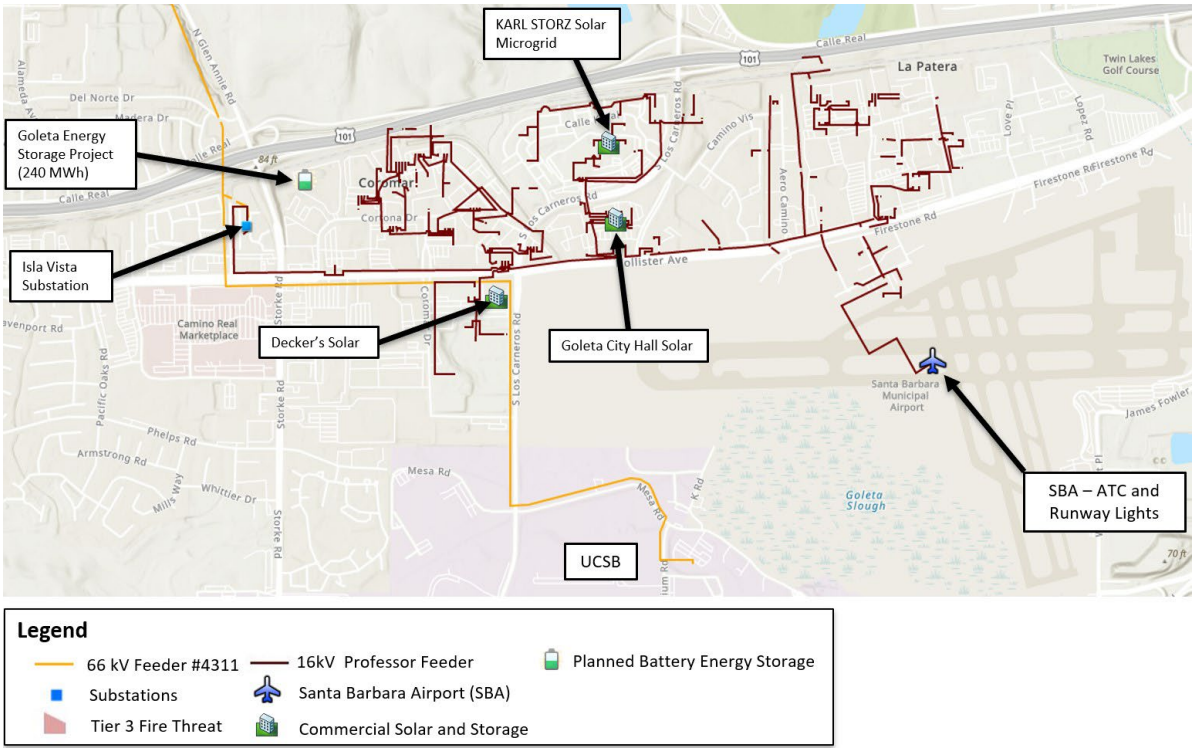


Montecito Community Microgrid Block Diagram

Under the proposed CMET, however, this section of the grid would likely have a difficult time getting approval because there are a few Tier 2 and Tier 3 facilities located on the same feeder in between the CCFs. Under the RES, the location of these facilities would not be an issue. Because all the non-CCFs are clustered together, the deployment of a few grid isolation switches would enable the energization of the CCFs without including the other non-critical facilities within the initial footprint of the Community Microgrid and the available generation would go to the Tier 1 and Tier 2 loads at the CCFs. In the future when more generation is available, the Community Microgrid could be expanded to serve the non-CCFs. The RES approach also ensures that the costs are spread out amongst RES customers, so that the CCFs would not see any cost increases associated with the deployment of the Community Microgrid.

c. Deploying a Community Microgrid that spans a single distribution feeder.

Far more complicated than an instance where CCFs are all sited close—or adjacent—to each other on the same feeder segment, is the case where there is an entire feeder than is selected for resilience. A single distribution feeder can be miles long and usually includes all different types of customers, making the deployment of resilience more complicated than simply installing a grid isolation switch that limits non-participating customers.



Target 16kV Feeder in the Goleta Load Pocket

The image above shows that there are multiple existing DER projects and critical facilities located on the same feeder, including Goleta City Hall, the Santa Barbara Airport, commercial facilities (Decker's and KARL STORZ), and the Isla Vista Substation. In this case, there are two options for the deployment of a Community Microgrid, both feasible under the RES. The first is a Community Microgrid where all non-participating customers have smart meters shut off remotely, as discussed above, to ensure that the critical loads of participating customers are met. Under this option, other interested facilities could be added in a cost-effective manner over time, with the deployment of more generation and storage assets and sufficient customer appetite for resilience. The second option is a Community Microgrid designed around the Isla Vista substation, like the substation microgrid that PG&E is worked to deploy with the City of Calistoga.[15] It is worth noting that current size limits in the CMET may prevent the deployment of a substation microgrid. The only difference in the two options is that a Community Microgrid could be operated by a third party during black sky conditions, whereas a Community Microgrid deployed around the substation would likely need to be fully owned and operated by the utility (SCE in this case). Furthermore, a substation Community Microgrid could be designed to offer resilience for all customers on the feeder, rather than starting

[15] https://www.newsdata.com/california_energy_markets/regulation_status/pg-e-energy-vault-to-develop-clean-energy-substation-microgrid/article_30cee7c4-eae8-11ed-94d9-87319fece46e.html

with CCFs and expanding outwards over time. However, in both cases, the RES creates the financial construct necessary to fully recover costs—without grant funding—in a way that does not shift costs to non-participating ratepayers, while creating widespread resilience benefits for the entire community that utilize the CCFs.

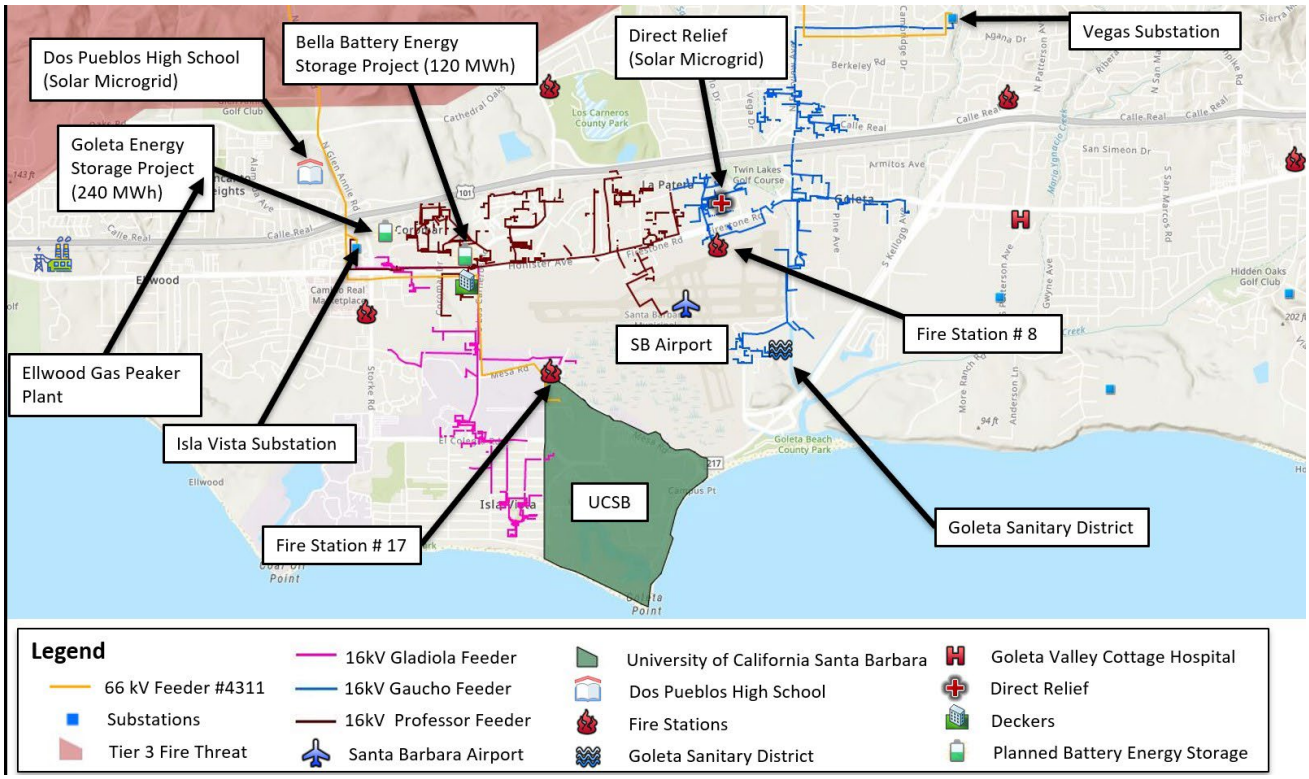
d. Deploying a Community Microgrid that spans an entire distribution grid area.

On the largest end of the spectrum, the Clean Coalition believes that a Community Microgrid tariff should enable the deployment of a Community Microgrid that provides resilience to an entire distribution area, such as the 80,000 residents of the GLP. With the current limits, the CMET does not come anywhere close to allowing the 200 MW of solar and 400 MWh of energy storage needed to provide resilience to the entire region. While this example is considering resilience at a far greater scale than the microgrids proceeding has focused on thus far, as a load pocket, an area at the end of SCE's service territory, and a transmission vulnerable region, the GLP should be a prime candidate for the deployment of a Community Microgrid.

Overview of the core area of the GLP (feeding the Goleta Substation)

The entire GLP is fed by seven 66 kV feeders and one 16kV feeder that extends out of the Goleta substation. The 220 kV transmission line (in purple) comes down the mountain, also feeding into the

Goleta Substation, which is a transmission-distribution substation. One 66kV feeder extends from the Goleta substation to the Isla Vista substation. From the Isla Vista substation, three 16 kV feeders represent the core area of the GLP (as seen in the zoomed in view, below).

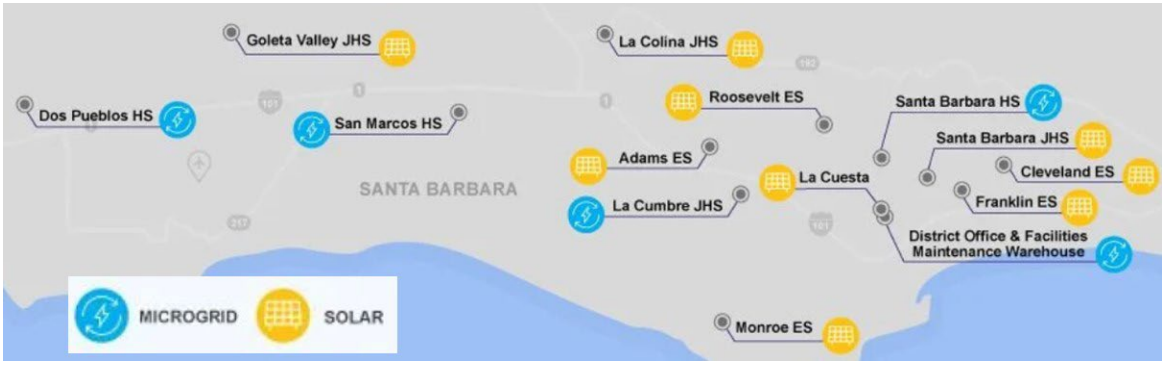


Zoom in view of the core area of the GLP with three 16 kV feeders (extending from the Isla Vista substation)

On the three feeders are multiple CCFs, the University of California Santa Barbara (which is the main emergency shelter site for the entire county), the Ellwood Gas Peaker Plant (a reliability-must-run plant), the Santa Barbara Airport, the medical supply non-profit Direct Relief, and existing DER deployments. Under the RES, this core area represents a perfect opportunity for the initial deployment of a modular Community Microgrid; the RES does not impose the same somewhat arbitrary size limit included in the CMET, making this deployment possible from both a technical and financial perspective. While not all ratepayers in the area would be included in the first deployment, adding generation/storage to enhance the Community Microgrid would lead to opportunities for new customers to reserve the needed resilience and eventually expand the footprint of the Community Microgrid to include larger areas of the GLP.

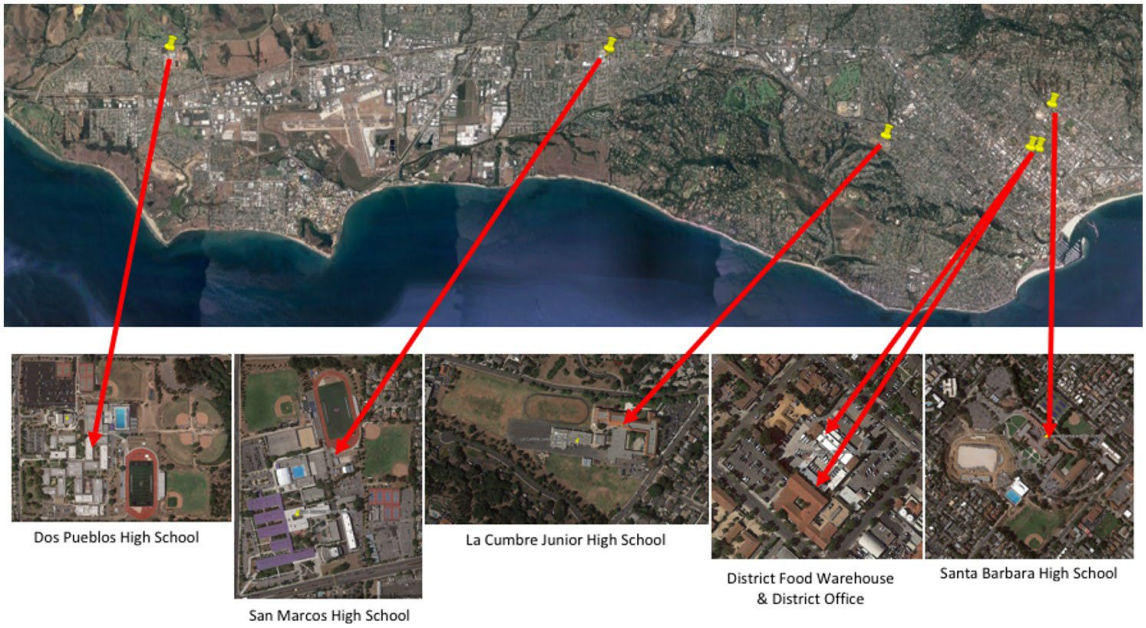
e. Deploying Solar Microgrids within a Community Microgrid.

As explained above, the Clean Coalition worked with the SBUSD to site solar and Solar Microgrids across the district. The sites delineated in yellow on the map below would be able to keep the power on the solar deployments functioning with a small RES allocation.



SBUSD sites selected for DER deployments

The six sites in blue (above) where Solar Microgrids were deployed, also shown through a Google Earth view below, do not necessarily need to reserve a RES allocation to enable resilience. However, by participating in a Community Microgrid via a RES contract, these facilities would have the opportunity to sell any excess energy to the Community Microgrid operator, creating an additional revenue, while also benefitting the rest of society by adding to the amount of generation available to use for resilience.



Six SBUSD sites selected for Solar Microgrid deployments (with site images)

IV. RESPONSE TO GUIDELINES AND REQUIREMENTS (posed in the October 23, 2023 Ruling)

i. Guidelines

1. *Provide the rules, terms, and conditions defining the relationship between the utility and the microgrid;*

Under the proposed RES, the utility would be responsible for operating the grid under normal conditions. The utility has the opportunity to be the microgrid owner-operator, which will include the opportunity to receive an ROR that can potentially be higher than the normal ROR for distribution infrastructure. In addition, having a utility microgrid operator would enable grid optimal performance at Community Microgrids sized similarly to BERMUS.

2. *Align the microgrid multi-property tariff with all applicable Commission policies and state and local permitting requirements;*

Given the unique structure and constraints of the RES, it is reasonable to have a utility or non-utility entity levy a very specific and targeted fee to cover the cost of resilience for participating customers and Tier 1 (and potentially Tier 2) loads at CCFs. The benefit of deploying a Community Microgrid is far greater than the sum of its parts; without resilience all of the assets will turn off, meaning that there is a reliability benefit but no inherent resilience. For example, a virtual power plant ("VPP") is an aggregation of assets, similar to a Community Microgrid, but is only design for economic optimization. As an aggregation of resources, a Community Microgrid has far more functionality and creates benefits in all types of grid conditions, including broader outage scenarios. In addition, resilience is a catalyst for decarbonization and electrification. Tiering loads and considering what level RES allocation is most cost-effective for each facility will help participating customers become more cognizant of their consumption patterns and real time grid conditions, which should be considered a success by the Commission. Finally, the RES offers a value creation opportunity that will increase over time; the more progress the state makes toward achieving electrification, the more reliant on electricity we will be and the more valuable having resilience will become. Having a financially feasible deployment process for Community Microgrids using the RES will create assets that appreciate over time rather than depreciating.

3. *Align the microgrid multi-property tariff with existing electric service rules (e.g., Rule 2) and existing interconnection processes;*

All new infrastructure added under the RES would follow the normal pathways using Rule 2, wherever applicable, and would rely on existing interconnection procedures. Ideally, all Community Microgrid DER infrastructure would be studied in tandem to ensure that most efficient possible interconnection. However, the RES is a market mechanism and can be utilized with existing tariffs, such as the CMET.

4. *Provide equitable service and universal access while avoiding discriminatory practices;*

The RES is a methodology that will inherently prevent cost shifts, by only billing participating customers for the resilience that they choose to reserve. Non-participating customers will receive benefits via the increased societal resilience at CCFs, which will offer critical services that preserve

societal structure in the event of grid outages of any duration. Through initial contracts of one year, participating customers will know exactly what level of resilience they are paying for and have certainty that there will not be significant cost increases at any point.

5. *Avoid cross-subsidization and cost shifts between participants and non-participants; and*

See the answer above.

6. *Contain sufficient information and details to facilitate evaluation by Commission staff, the Joint IOUs, and stakeholders.*

It is important to note that the RES does not need to be a standalone tariff and will complement the rules related to interconnection, design, study, and operation included in other tariff proposals (such as the CMET).

ii. Requirements

1. *Comply with Pub. Util. Code Section 218 regarding rules for electrical corporations;*

The RES creates the financial and operational ability to deploy a Community Microgrid for resilience. The procedures laid out above do not infringe on existing requirements related to PUC 218(b), since the primary role of these Community Microgrids is for black sky conditions. Community Microgrids deployed via the CMEP, CMET, or Microgrid Incentive Program would all apply. Importantly, the RES is complementary with other proposed tariffs, since it is a fee that can be levied on top of the OAT.

2. *Define and standardize the technical, operational, and regulatory requirements for microgrids that utilize a utility distribution system to provide resiliency services to two or more end users;*

The requirements under the CMET are similar to the requirements under the RES. The main difference is that the RES involves a fee levied by the Community Microgrid owner-operator, which can be the utility or a third party. Ideally, the Community Microgrid assets will be studied for interconnection at the same time and the size limit will be increased from 20 MW or removed entirely.

3. *Define roles, responsibilities, and requirements for all parties during microgrid development and testing, ongoing microgrid operations and maintenance, and modifications or changes to microgrid once operational;*

The applicant and utility will be responsible for ensuring that there is a streamlined design, including remote de-energization of smart meters, that meets the utility's existing standards.

While it may be stating the obvious, any designs that do not pass all existing utility screens will not be able to move forward. Just as the utility knows locations on the distribution grid that will require upgrades many years in advance, so to will the Community Microgrid owner-operator need to plan in advance for any additions to the Community Microgrid. The only material modification that will be needed is deploying new generation, storage, and grid infrastructure when an additional block/feeder is being added to the Community Microgrid. Any change in customer enrollment in the existing Community Microgrid will not result in significant problems, so long as there is sufficient supply to meet the base RES allocations. As explained above, in the majority of instances, there will be more than enough supply and so loads beyond the initial RES allocations will be able to stay on. Customers who choose to unsubscribe from their RES contract following the initial one-year commitment will be de-energized remotely during an outage. Any such change in the number/geography of subscribers will be registered with the utility prior to the first of each month (when the new subscriptions take effect).

4. *Address and prioritize safety and system reliability, including but not limited to, public and worker safety, utility system protection, and cybersecurity;*

Increased resilience will lead to greater reliability statistics throughout the footprint of the Community Microgrid because service will not be interrupted in the event of a broader grid outage. Participating ratepayers will benefit from resilience, as will non-participating ratepayers (to a slightly lesser extent) due to the ability to utilize critical community functions at CCFs. In addition, non-participating ratepayers will always have the opportunity to increase their resilience via a RES subscription.

5. *Demonstrate compliance with existing rules, regulations, and other tariffs, as well as identify any potential barriers or conflicts with existing rules, regulations, tariffs. Where barriers or conflicts are identified, propose potential solutions and processes to address them;*

See the answers above.

6. *Allow for the utility to always maintain control of its distribution system;*

The utility will maintain control of its distribution system during blue sky conditions and can be the grid operator during black sky conditions if interested. The utility will always have the right of first refusal when it comes to being the microgrid operator. The utility will have the ability to turn smart meters off remotely, since smart meters have been fully rolled out, either at the remote operations center or using SCADA.

7. *Ensure that any generation and storage resources with the ability to operate in parallel with*

a utility are interconnected to that utility's distribution system;

8. *Do not prohibit generation resource technologies;*

The RES is technologically agnostic, though the costs of non-renewable generation will not be recovered, even for CCFs. All Community Microgrids deployed under the RES will be served by renewable generation.

9. *Require all generation resources to comply with all applicable emissions standards;*

See the answer above.

10. *Do not restrict ownership of generation or storage resources;*

Ownership of assets will not be restricted. Participating ratepayers with customer-sited renewables can export energy and receive financial benefits during black sky conditions, benefitting other customers with RES subscriptions.

11. *Do not unduly restrict utility or other third-party owned resources from participating in markets, participating in programs, or providing services during normal utility grid conditions;*

The RES does not unduly restrict market participation. Participation that will help recover costs during blue sky conditions is encouraged.

12. *Address service quality for all electricity delivered;*

On the whole, service quality under the RES will be far higher than normal. Under normal blue sky conditions, service quality will come from the utility and remain the same. However, the unparalleled resilience should ensure that there is always electrical service, ensuring a higher of reliability than is currently possible.

13. *Establish mechanisms to ensure consumer and ratepayer protection;*

Under the RES, only participating customers will be assessed a RES fee and the level of the fee will be based on the individual customer's appetite for resilience. The RES fee will be clear upfront and will be a standard one-year contract to ensure that no consumer protection violations are possible.

14. *Address communications and telemetry between microgrid and utility;*

Communications and telemetry will not be unique to the RES arrangement. As explained, the RES is complementary to other tariffs, such as the CMET. Telemetry and communications requirements are clearly laid out in the CMET.

15. *Address metering, billing, and settlement processes for delivered electricity; and*

Billing will be done on an individual basis for all participating customers. Non-

participating customers will have their smart meters turned off remotely during black sky conditions, when there is a limited amount of energy available because CCFs and RES allocations must be served first. Pricing is established based on the information contained above. The fee should not be more than an additional 1% on top of the normal price of energy for each 1% of the load that is backed up.

16. Explain how pricing is established, if relevant.

See the answers above.

V. CONCLUSION

The Clean Coalition appreciates the opportunity to officially submit the RES on the record for the Commission to consider for adoption. The RES combines the technical process of deploying a Community Microgrid with the need for resilience from both the societal and utility's perspective. The Clean Coalition believes that the RES effectively creates a way to value the unparalleled trifecta of economic, environmental, and resilience benefits associated with Community Microgrids and should be adopted as a complement to other party proposals such as the CMET.

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