DOCKETED	
Docket Number:	20-IEPR-04
Project Title:	Microgrids
TN #:	234081
Document Title:	Clean Coalition Comments - IEPR Community Microgrid pilot program covering a comprehensive grid area of a substantial feeder
Description:	N/A
Filer:	System
Organization:	Clean Coalition
Submitter Role:	Public
Submission Date:	7/30/2020 4:43:25 PM
Docketed Date:	7/30/2020

Comment Received From: Clean Coalition
Submitted On: 7/30/2020
Docket Number: 20-IEPR-04

IEPR Community Microgrid pilot program covering a comprehensive grid area of a substantial feeder

Additional submitted attachment is included below.

30 July 2020
California Energy Commission
1516 9th St, Sacramento, CA 95814

RE: IEPR Community Microgrid pilot program covering a comprehensive grid area of a substantial feeder.

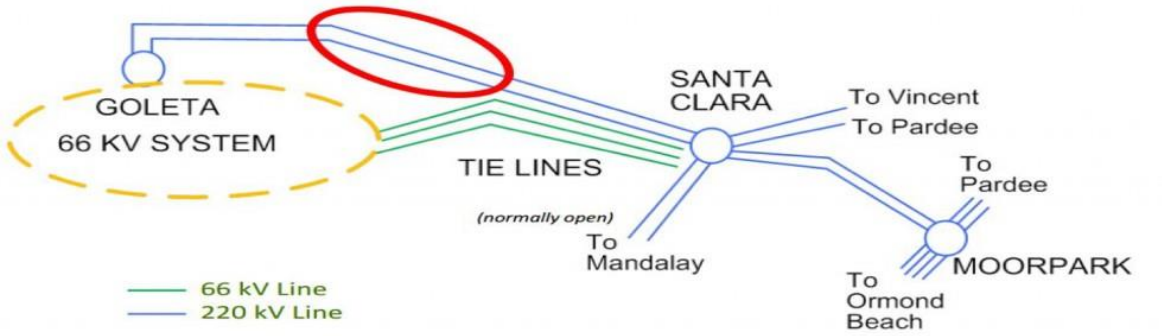
Dear Chair, California Energy Commission Members, and Staff,

On behalf of the Clean Coalition, I am writing to urge the Commission to take full advantage of the current IEPR process to design a Community Microgrid (CM) pilot that uses a comprehensive grid area or a substantial feeder with critical facilities. The IOUs have dragged their feet when it comes to the development of microgrids, particularly CMs, without serious direction from a regulatory agency like the CPUC or the CEC. Track 1 of the CPUC microgrid proceeding implementing SB 1339 (R. 19-09-009) centered around behind the meter (BTM) microgrids, mainly for critical facilities. The Staff Proposal for track 2 is mainly focused on BTM microgrids and energy-sharing with adjacent properties. Neither is taking an aggressive approach to consider true CMs. Some of the important questions the CPUC delayed answering in track 1 (e.g. islanding capabilities for energy storage) are being discussed in track 2, while other essential considerations (e.g. a value of resilience) have not yet been addressed. The CPUC can easily continue to delay answering questions until track 3, which procrastinates ascribing the true value microgrids can bring, including: greenhouse gas reduction through the procurement of renewable energy, increased reliability and resilience, ancillary services (e.g. voltage regulation and frequency balancing, etc.…) and economic benefits. Kicking the can down the road does not make these questions any less important to fulfilling California's clean energy and resilience needs. However, leaving basic questions about microgrids unanswered *does* delay the deployment of CMs across the state, wasting precious time to deploy proactive solutions against the devastating — but inevitable — wildfires, earthquakes and Public Safety Power Shutoffs (PSPS). The 2020 IEPR update provides a unique opportunity for the CEC to consider policy issues in parallel with the CPUC through a pilot program, creating a higher standard for R. 19-09-009, without impeding it. A CM pilot program would demonstrate the viability of FOM microgrids operated by the relevant IOU and populated with distributed energy resources (DER).

The Goleta Load Pocket (GLP) is a perfect location for a pilot program since it has experienced PSPS and is in a transmission vulnerable area.

Map of the GLP (the purple line is the single transmission line in the region)

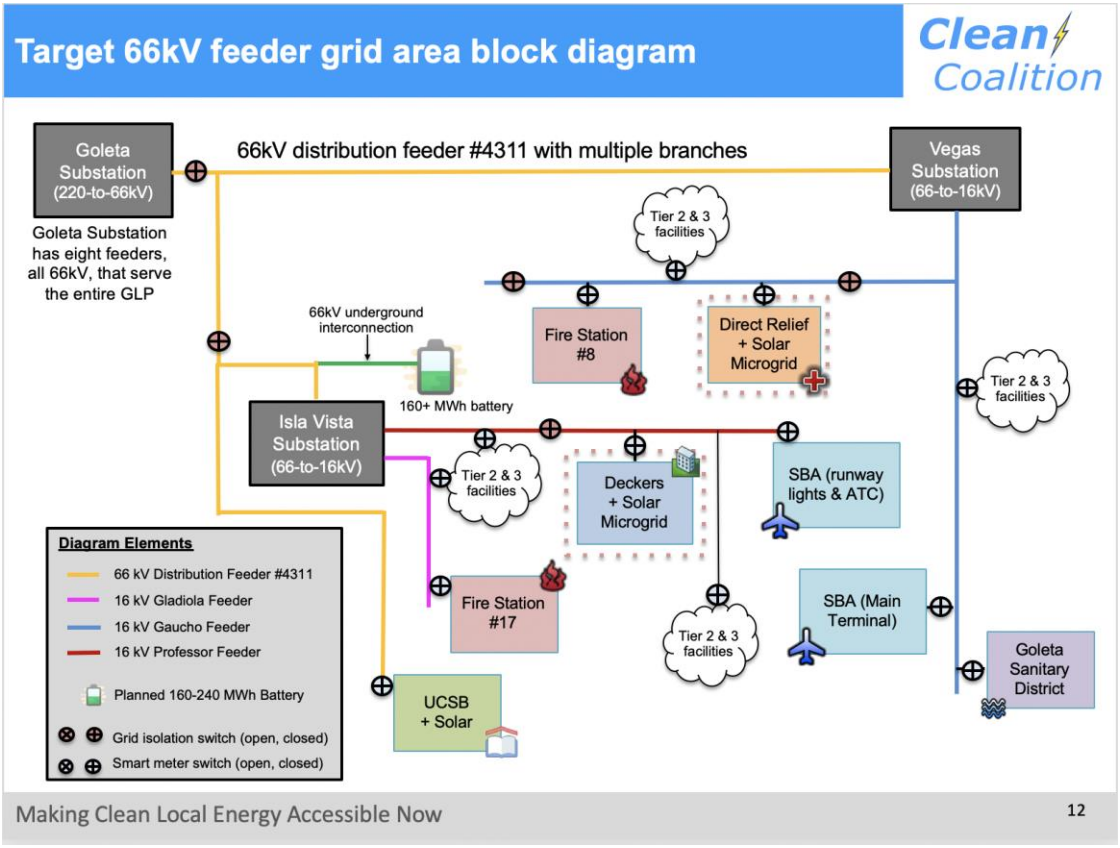
The GLP spans 70 miles of California coastline, from Point Conception to Lake Casitas, encompassing the cities of Goleta, Santa Barbara (including Montecito), and Carpinteria. The region is at the northwest end of the SCE's service territory and relies entirely on one coterminous set of transmission lines routed through 40 miles of rugged mountainous terrain.



Transmission Infrastructure in the GLP

Southern California Edison (SCE) has repeatedly characterized these transmission lines as at risk for catastrophic failure from fire, earthquake, or heavy rains, which could potentially cause a crippling, extended blackout for weeks or even months. According to Clean Coalition calculations, to achieve indefinite renewables-driven backup power that provides 100% protection to the GLP against a complete transmission outage ("N-2 event"), 200 MW of solar and 400 megawatt-hours (MWh) of energy storage needs to be sited within the GLP. The grid area block diagram below shows a 66kV feeder interconnected directly to the Goleta substation (the only substation connected to the transmission grid) — that would be the site of a larger CM

— and multiple 16kV feeders containing critical facilities (e.g. the Santa Barbara airport). Some of these facilities already contain critical facility microgrids.

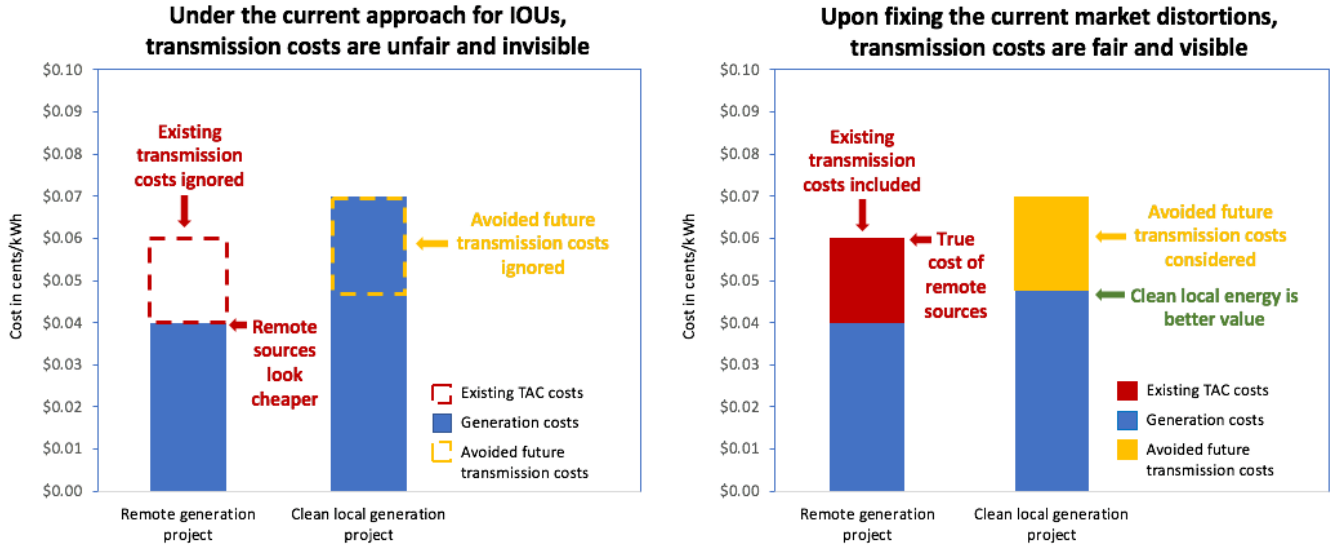


Interconnecting these critical facility microgrids to a larger CM will provide important policy and regulatory lessons about the necessary methodology to truly unleash the benefits CMs bring to the local distribution grid.

One of those benefits is a lowered reliance on the transmission grid, which needs to be properly valued. The current Transmission Access Charge (TAC) valuation in IOU service territories is calculated at the customer meter, rather than at the transmission-distribution substation, charging all energy is charged that 2 cents/kWh TAC as if it all used the transmission grid.[1] However, the penalty to distributed generation is much higher than just 2 cents/kWh, since that valuation only considers existing transmission costs. As part of the 2020 update to the Avoided Cost Calculator, the CPUC affirmed that each of the three IOUs must value the DER-avoided cost of transmission investment (just load growth so far), including in the form of Community Microgrids and other Non-Wire Alternatives ("NWAs"). Avoiding the need for new

[1] https://clean-coalition.org/policy/transmission-access-charges/

transmission, from load growth alone, is worth an additional 2.5 cents/kWh in the evenings, As illustrated in this infographic, in total, current distortions in allocating transmission cost steal roughly 4.5 cents/kWh of value from local renewables and other DER:



Existing transmission costs, currently averaging 2¢/kWh, should be added to the cost of remote generation that requires use of the transmission grid to get energy from where it is generated to where it is used. Future transmission investments, currently averaging 2.5¢/kWh in the evenings, can be avoided via dispatchable local generation, and that value should reduce the evaluated cost of local generation. When correctly considering ratepayer impacts of transmission costs, dispatchable local generation provides an average of 4.5¢/kWh of better value to ratepayers than is currently assumed in the majority of instances.

Importantly, in non-IOU service territories, TAC are metered and assessed properly, at the transmission-distribution substation for non-IOU service territories. The true appraisal of TAC will drastically improve the economic viability of CMs and DER, maximizing the benefit to the ratepayer. A CM pilot and accompanying economic analysis will reveal the true benefits of a CM and the detriment that TAC causes distributed generation.

The final consideration that an IEPR CM-pilot would bring to the forefront of microgrid-related discussions is the value of resilience. PSPS events during 2019 demonstrated that for critical facilities, businesses and medical baseline customers, resilience has a definite monetary value. In some cases, resilience is literally a question of life and death. Hospitals, for example, *cannot* be without power for an extended period of time and pay a premium for backup power and in many cases, backup power to the backup power. On the contrary, regulation has not yet caught up with what the ratepayers and business has known for years — if not having

something (e.g. resilience) leads to serious consequences, there is a reason to determine a precise value for it. The Clean Coalition initiative, VOR123 ascribes a monetary value for resilience at individual facilities.[2] The diagram below explains the VOR123 methodology that properly value resilience.

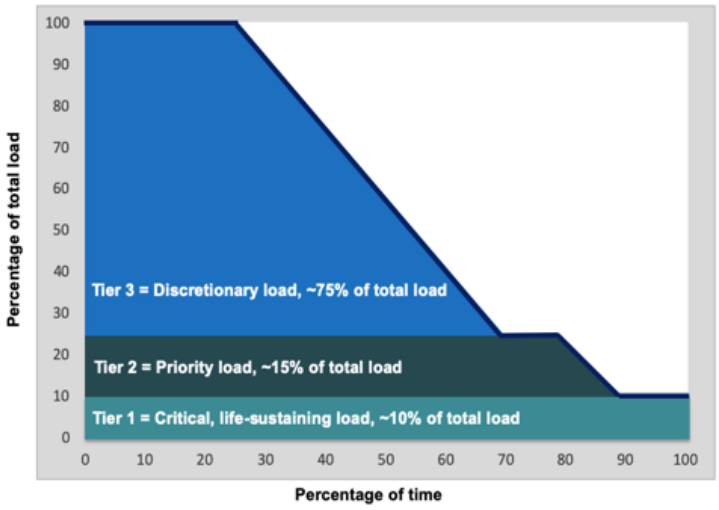
Load tiering and valuing resilience ("VOR123" methodology)

Clean Coalition

With respect to valuing resilience, there are different VOR levels for each of the three load tiers. The following valuation ranges are typical for most sites:

- **Tier 1**: 100% resilience is worth approximately 3 to 5 times the normal price paid for electricity. In other words, indefinite energy resilience for critical loads is worth 3 to 4 times the normal price paid for electricity. Given that the typical facility has a Tier 1 load that is about 10% of the total load, applying the low side of the Tier 1 VOR multiplier typically yields a 20% adder to the pre-resilience electricity rate.
- **Tier 2**: 80% resilience is worth approximately 1.5 to 3 times the normal price paid for electricity. In other words, energy resilience that is provisioned at least 80% of the time for priority loads is worth 1.5 to 2.5 times the total, so applying the low side of the Tier 2 VOR multiplier yields a 7.5% adder on top of the pre-resilience electricity rate.
- **Tier 3**: Although a standard-size solar microgrid can provide backup power to Tier 3 loads a substantial percentage of the time, Tier 3 loads are by definition discretionary, and therefore, a Tier 3 VOR multiplier is negligible and assumed to be zero.

Taken together, the Tier 1 and Tier 2 premiums for a standard load tiering allocation yields an effective VOR of between 25% and 30%. Hence, **the Clean Coalition uses 25% as the typical premium that a site should be willing to pay for indefinite renewables-driven backup power to critical loads** — along with renewables-driven backup for the rest of the loads for significant percentages of time.



Average anticipated resilience, in terms of percentage of time online:
- Tier 1: 100%
- Tier 2: 80% (at least)
- Tier 3: 25% (at least)

Properly designed CMs provide indefinite renewables-driven backup power to all critical facilities, including situations when the transmission grid is shutdown. Thus, a CM-pilot would effectively demonstrate the value of resilience for an entire segment of the distribution grid.

The Clean Coalition appreciates the opportunity to comment and urges the CEC to develop an ambitious CM-pilot as part of the IEPR proceeding. Such a pilot is the most effective tool the CEC can use to drive policy forward by considering the benefits a CM brings to the

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

distribution grid and the how to properly value those benefits via the value of resilience and correctly calculated TAC.

Thank you,

Craig Lewis
Executive Director
Clean Coalition
Santa Barbara | Menlo Park | Denver
650-796-2353 mobile
craig@clean-coalition.org