Resiliency & Microgrids Working Group
Multi Property Tariff Phase: Alternatives to Multi Property Tariff

Resiliency and Microgrids Team, Energy Division

February 22, 2021

California Public
Utilities Commission

WebEx and Call-In Information

Join by Computer:

https://cpuc.webex.com/cpuc/onstage/g.php?MTID=e5530248d733178916bebcbdd669fad51

Event Password: RMWG22

Join by Phone:

- Please register using WebEx link to view phone number.

(Staff recommends using your computer's audio if possible.)

Notes:

- Today's presentations are available in the meeting invite (follow link above) and will be available shortly after the meeting on https://www.cpuc.ca.gov/resiliencyandmicrogrids.

- This meeting will not be recorded and there will not be meeting minutes.

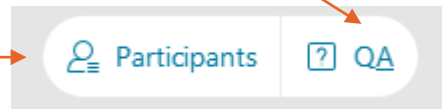
WebEx Logistics

- All attendees are muted on entry by default.
- Questions can be asked verbally during Q&A segments using the "raise hand" function.
  - The host will unmute you during Q&A portions and you will have a maximum of 2 minutes to ask your question.
  - Please lower your hand after you've asked your question.
  - If you have another question, please "re-raise your hand" by clicking on the "raise hand" button twice.
- Questions can also be written in the Q&A box and will be answered verbally during Q&A

WebEx Tip

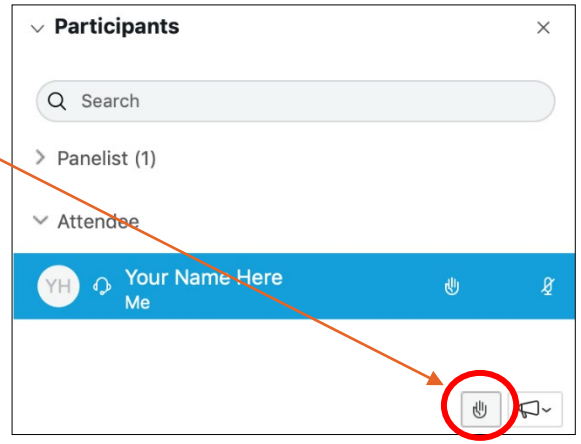
Access the written Q&A panel here

1. Click here to access the attendee list to raise and lower your hand.



2. Raise your hand by clicking the hand icon.

3. Lower it by clicking again.



Access your meeting audio settings here

Agenda

I. Introductions 2:00 – 2:05
- WebEx Logistics
- Review agenda

II. Discussion Prompts Follow Up 2:05 – 2:35
- Group follow up on the list of discussion prompts and questions that was shared from previous meeting.
- Solicit tariff development-related resources from members that may be useful.

III. Alternatives to a Multi-Property Tariff 2:35 – 3:50
- Discuss alternatives to a multi-property tariff that would enable multi-property, multi-customer microgrid projects. This includes microutilities, cooperatives, and the own use doctrine. **There will time allocated for discussion after each sub-topic.*
- General Discussion

V. Next Steps 3:50 – 4:00

Multi Property Tariff Discussion Prompts Follow Up

Discussion Prompt and Questions

As a follow up to the 2/09/21 RMWG meeting, staff would like to hear from members to share if there are any additional responses to the "Multi-Property, Multi-Customer Microgrids Tariff Discussion Prompt and Questions".

- General reactions?
- Do you agree with the prompts that we indicated as policy questions that are foundational to the tariff and should be addressed first?
- Any questions or clarifications?
- Are there topics you would like to learn more about?
- Are there topics you would like to present an educational presentation on or have suggestions on who should present?

Resource Repository

In addition to the Discussion Prompts, there are existing resources that may help inform the multi-property proposals.

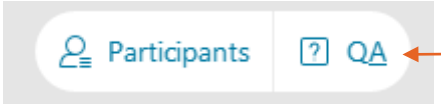
- SEPA – How to Design Multi-User Microgrid Tariffs (link)
- Community Microgrid Enablement Program Process Guide (link)
- Community Microgrid Technical Best Practices Guide (link)

Action Request from Members: *Please let us know if you have other tariff development-related resource suggestions that may be helpful for the working group members to be aware of. We can include this list on our webpage for future reference.*

Discussion and Q&A

WebEx Tip

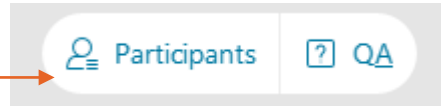
Option 1:



Access the written Q&A panel here

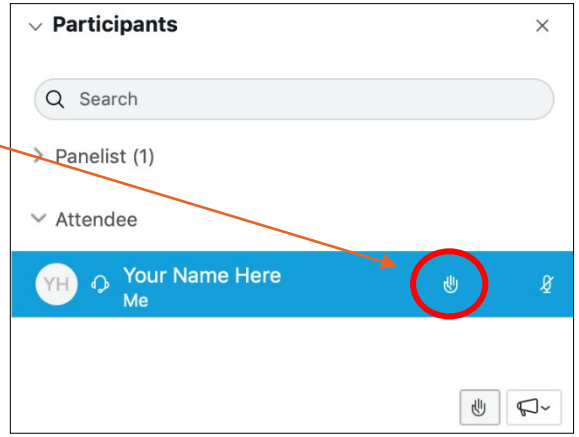
Option 2:

1. Click here to access the attendee list to raise and lower your hand.



2. Raise your hand by clicking the hand icon.

3. Lower it by clicking again.



Alternatives to Multi-Property, Multi-Customer Tariff

Potential Alternatives to a Multi-Property Tariff

Below are three potential alternatives to enable multi-property microgrids besides a tariff:

- **Microutilties:** Microgrids could potentially fall under the category of "electric micro-utilities" as defined under Public Utilities Code Section 2780-2780.1.
- **Cooperatives:** Community microgrids (microgrids that provide energy resources for more than one property owner, not necessarily contiguous) could form an electrical cooperative.
- **Own Use Doctrine:** The idea that the provider of utility services is not considered a public utility when electricity is generated on or distributed by the producer through private property solely for its own use or the use of its tenants and not for sale or transmission to others.

Microutilities - Background

- Microgrids and Resiliency Staff Concept Paper (July 2020)
- Microgrids could potentially fall under the category of "electric micro-utilities" as defined under Public Utilities Code Section 2780-2780.1.

2780.

As used in this chapter, the term "electric microutility" means any electrical corporation that is regulated by the commission and organized for the purpose of providing sole-source generation, distribution, and sale of electricity exclusively to a customer base of fewer than 2,000 customers.

(Added by Stats. 2004, Ch. 639, Sec. 1. Effective January 1, 2005.)

2780.1.

(a) It is the intent of the Legislature that the commission consider the legal, administrative, and operational costs that an electric microutility faces if it is named as a respondent in a hearing generally applicable to electrical corporations. The limited resources of a microutility are disproportionately strained by the cost of response.

(b) Further, it is the intent of the Legislature that the commission consider the costs described in subdivision (a) before naming an electric microutility as a respondent in a hearing generally applicable to electrical corporations.

(Added by Stats. 2004, Ch. 639, Sec. 1. Effective January 1, 2005.)

Microutilities – Potential Proposal

- Under this category, the CPUC could consider some or all the legal, administrative, regulatory, and operational costs burdensome to the limited resources of the micro-utility.
- This is not to say the micro-utility would bear no responsibility for the kinds of considerations elicited by those legal, administrative, and operational costs.
- The levels of regulations could be based on several factors: such as number of customers served, amount of electricity delivered to customers, diversity of load, ownership or security of generations sources, etc.
- The CPUC could articulate:
  - a set of boundaries describing the rate setting, non-discriminatory delivery of services, opt out pathways, and safety and reliability oversight
  - a minimalistic reporting scheme designed with the smaller scope and considerations. Examples:
    - Renewables Portfolio Standard
    - Integrated Resource Planning
    - Resource Adequacy Compliance

Microutilities – Questions

- Does the proposal support California and Commission goals and objectives? Would the Commission still be able to account for these programs, for example: CA Renewables Portfolio Standard Program, Energy Storage Procurement Targets, and Clean Energy and Pollution Reduction Act.

- If the Commission were to change or waive requirements for microutilities, why would the Commission also not waive the same requirements for the large investor-owned utilities?

- What would the implications of significant microutilities growth be for ensuring CA goals and objectives?

Microutilities – Party Comments

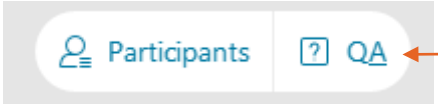
For discussion only, below are paraphrased examples of party remarks (*paraphrased*) from past Comments/Reply Comments:

- Schneider/SunRun: Filing a declaratory order for each small project is **prohibitively expensive** if the microgrid owners do not know the level of regulation that they will be subjected to.
- SBUA: (Reply) concurs with SEIA that microutilties are **not a feasible mechanism** for organizing most microgrids.
- CalSSA: **concern** that the microutilities be **restricted to relatively rare, niche microgrid configurations.**

Discussion and Q&A

WebEx Tip

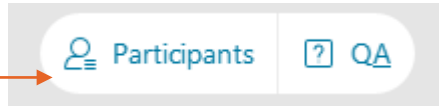
Option 1:



Access the written Q&A panel here

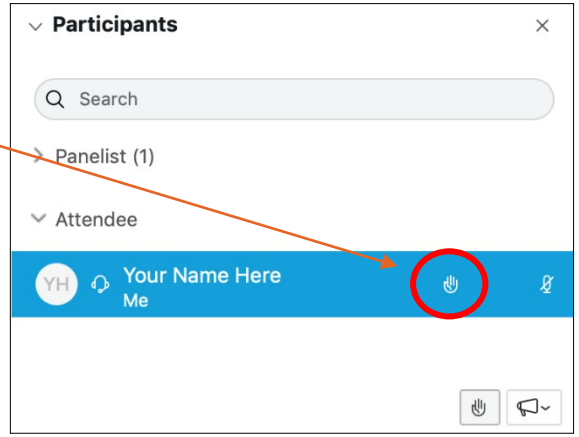
Option 2:

1. Click here to access the attendee list to raise and lower your hand.



2. Raise your hand by clicking the hand icon.

3. Lower it by clicking again.



Cooperatives - Background

- Microgrids and Resiliency Staff Concept Paper (July 2020)
- According to the Section 2868 and Section 2776, it could be interpreted that an established electrical cooperative could be formed as the organizing structure defined by Section 2868 as an "electric utility" operating the microgrid as long as it transmits or distributes electricity exclusively to the microgrid participants at cost.

Electric Cooperative Jurisdiction	CPUC Jurisdiction
Oversight of fair treatment between customers.	GO 95 details rules for overhead electric line construction.
Authority to establish rates which needs to be "at cost".	PUC Section 8387 details various safety mechanisms cooperatives must undergo for wildfire safety.
	PUC Section 454.52 discusses the filing of an Integrated Resource Plan, if "the electrical cooperative has an annual electrical demand exceeding 700 gigawatt hours, as determined based on a three-year average commencing with January 1, 2013."
	PUC Section 454.52 discusses greenhouse gas reduction targets, Resource Adequacy and Renewable Portfolio Standard requirements.

**These are preliminary jurisdictional considerations and not intended to be comprehensive.*

Cooperatives - Precedents

- Two key decisions: D. 90-07-019 and D. 95-10-040
- Summary of Finding: The State found that it is in the public interest to prevent competition on the distribution system. Finding of facts:
  - Duplication of electric service facilities is wasteful, creating an unnecessary burden upon ratepayers, and is not in the public interest.
  - In the public interest the long-standing policy of this Commission has been to require public utilities within its jurisdiction to avoid duplication of service facilities.
- Jurisdictional maps are approved in each of the IOU tariff books.

Cooperatives - Questions

- Is there any reason to believe this is no longer true? If there is, what is the reason and why?
- Does the same logic apply to new developments? Why or why not?

Cooperatives – Excerpts of Party Comments

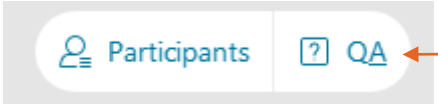
For discussion purposes only, below are paraphrased examples of party remarks from past Comments/Reply Comments:

- SEIA - The formation of an electric cooperative and the legal constraint that the owner distribute the energy **"at cost" is not conducive to attracting third-party financing and is unrealistic.** That said, recommend at a minimum, the Commission state that forming a coop to effectuate residential microgrid community is currently allow under the PUC code.
- Emera Technologies LLC - The Commission should **clarify** how exactly the micro-utilities and cooperatives could be used to provide microgrids and **the types of regulations that these entities would be subject to**.
- SBUA – Provided **a list of conditions to guard against cost-shifting**, example: submetering arrangement is consistent with existing rules that allow commercial office buildings or parks to submeter electric service to their tenants.

Discussion and Q&A

WebEx Tip

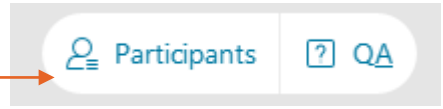
Option 1:



Access the written Q&A panel here

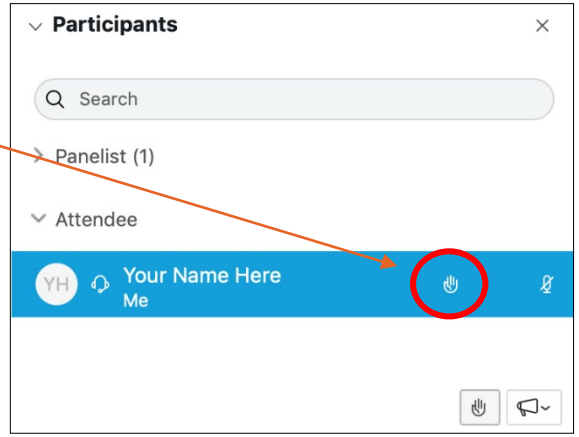
Option 2:

1. Click here to access the attendee list to raise and lower your hand.



2. Raise your hand by clicking the hand icon.

3. Lower it by clicking again.

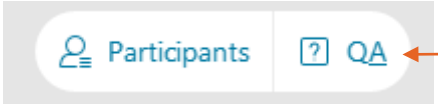


General Discussion

Discussion and Q&A

WebEx Tip

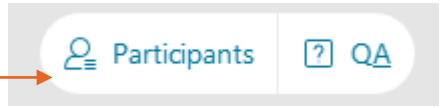
Option 1:



Access the written Q&A panel here

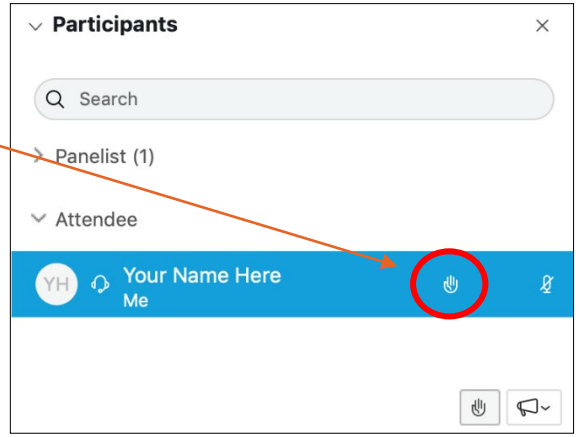
Option 2:

1. Click here to access the attendee list to raise and lower your hand.



2. Raise your hand by clicking the hand icon.

3. Lower it by clicking again.



Multi-Property Microgrids and “Own Use”

Alexandra “Sascha” von Meier

Adjunct Professor, Dept. of Electrical Engineering and Computer Science, UC Berkeley
Director, Electric Grid Research, California Institute for Energy and Environment
Faculty Scientist, Lawrence Berkeley National Laboratory, Grid Integration Group

vonmeier@berkeley.edu

ciee | California Institute for Energy and Environment

Background: Oakland EcoBlock

A Zero Net Energy, Low Water Use Retrofit Neighborhood Demonstration Project

Funded by California Energy Commission, EPIC Program
Accelerating the Deployment of Advanced Energy Communities

Developing a multi-property microgrid with shared PV and battery storage for one urban block (~30 units) with older homes in a low-to-moderate income area

- Built on deep efficiency retrofits, electrification of natural gas end uses
- Provide infrastructure for shared EVs
- Aim to make resilience, PV + storage and EVs affordable for lower income communities
- Plan: Islandable microgrid on PG&E-owned and operated distribution infrastructure
  Reference case: Redwood Coast Airport Microgrid

Tasked with studying different possible designs & configurations

Note: The comments in this presentation are offered in the spirit of contributing to the general discussion on "Own Use" to advance climate goals, equity, and resilience, based on our team's December 2020 White Paper.

https://ecoblock.berkeley.edu

ecoblock

Things we probably all agree on

Safety:
- don’t endanger linemen
- don’t start fires or electrocute people

Climate:
- encourage more PV to replace fossil generation
- replace gasoline cars with EVs
- retire natural gas and electrify end uses

Resilience:
- keep the lights on when possible
- encourage energy storage for grid reliability and stress relief

Equity:
- consumer protection – don’t let people get taken advantage of
- don’t shift any costs to ratepayers who don’t benefit
- allow access to modern technology for all income levels

Things we probably all agree on

Safety:
- don’t endanger linemen
- don’t start fires or electrocute people

Climate:
- encourage more PV to replace fossil generation
- replace gasoline cars with EVs
- retire natural gas and electrify end uses

Resilience:
- keep the lights on when possible
- encourage energy storage for grid reliability and stress relief

Equity:
- consumer protection – don’t let people get taken advantage of
- don’t shift any costs to ratepayers who don’t benefit
- allow access to modern technology for all income levels

Flexible microgrids as a solution:

- *increase hosting capacity for DER*
- *leverage DER as good citizens on the grid through aggregation and intelligent control*
- *potentially lower cost to society by addressing multiple challenges simultaneously*

Idea: Multiple homes share resources for own use

We believe PUC Section 218 already allows this.

For example:

- Homeowners' Association owns and operates shared assets (PV + battery)
- Design, sizing & location of assets based on technical merit
- HOA interfaces with utility, responsible for O&M
- No energy sales take place; members share ownership
- Non-profit, community-based
- Rules to ensure safety, define eligibility, spell out governance process

PUC Section 218

PUC Section 218 (a) excludes from electric corporation electricity *"generated on or distributed by the producer through private property solely for its own use or the use of its tenants and not for sale or transmission to others."*

- "Own use" doctrine makes explicit that individuals can generate and store their own power. Clearly, a landlord can do the same for tenants.
- If I own adjacent properties and rent out the houses, Section 218 would not prevent me from sharing generation assets (although Commission Rules 18/19 would).
- Why should the property line matter?
  What features of a landlord-tenant relationship warrant exception from the Commission's jurisdictional reach that is different from an HOA-type arrangement?
- Nothing in Section 218 prohibits individuals from collectively pooling their resources to generate and store electricity, as long as there are no sales.
- Rules for over-the-fence *sales* (limiting to two properties) don't apply if there are no sales.

Why is “Own Use” appropriate?

- There is a natural optimal size for block-scale DER aggregation, with a distinct economy of scale for 5-30 homes and diminishing returns thereafter.[1]
- Rules can be specified for maximum size or other characteristics to ensure public policy objectives are met.
- Criteria may include physical fit with existing distribution system infrastructure for islanding, which would limit aggregation to small feeder sections.
- This allows for co-ownership and collaboration among neighbors, so those of lower income and with smaller homes can access the benefits of scale.
- Suitable rules of engagement and tariffs should *prevent* grid defection.
- Today’s technology allows for seamless coordination of DER in a way that was not foreseen decades ago, when Section 218 was written.

1 A. Ostfeld, M. Whitmeyer and A. von Meier, "Adaptive Islanding and Self-Sufficiency of Block-Scale Microgrids," *2018 IEEE Green Technologies Conference (GreenTech),* Austin, TX, 2018, pp. 44-48. doi: 10.1109/GreenTech.2018.00017

Possible obstacles to reliance on the “Own Use” doctrine

Rules prohibiting one premise supplying electricity to another?
See PG&E Electric Rule 18, SCE Electric Rule 18, and SDG&E Electric Rule 19 (collectively “Rules 18/19”).
Note that these rules are Commission-based and could be revised to facilitate microgrids in the public interest.

Safety Considerations?
This legitimate concern can be addressed with proper inspections and licensing.

Ratepayer impacts?
Creation of resilient microgrids should not leave remaining customers with system costs.
Note that the Block-scale microgrid model does not contemplate load departing, but rather remaining connected and providing grid services while advancing policy goals.

We think multi-property, own-use microgrids can serve all of these goals!

Safety:
- don’t endanger linemen
- don’t start fires or electrocute people

Climate:
- encourage more PV to replace fossil generation
- replace gasoline cars with EVs
- retire natural gas and electrify end uses

Resilience:
- keep the lights on when possible
- encourage energy storage for grid reliability and stress relief

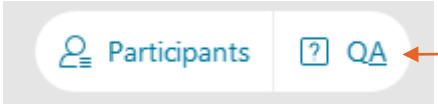
Equity:
- consumer protection – don’t let people get taken advantage of
- don’t shift any costs to ratepayers who don’t benefit
- allow access to modern technology for all income levels

Questions?

Discussion and Q&A

WebEx Tip

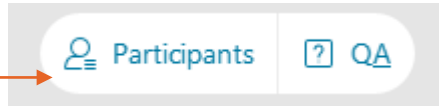
Option 1:



Access the written Q&A panel here

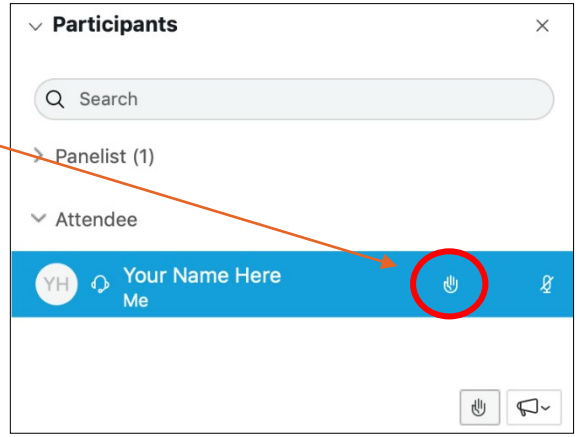
Option 2:

1. Click here to access the attendee list to raise and lower your hand.



2. Raise your hand by clicking the hand icon.

3. Lower it by clicking again.



Next Steps

- **Action Request from Members:**
  - Review the discussion prompts and let us know if there are areas where it may be valuable to hear from you or if you have suggestions on who should we hear from.

  - Let us know if you have other tariff development-related resource suggestions that may be helpful for the working group members to be aware of.

- **Next Meeting**
  - Monday, March 8, 2021, 2-4PM
    Topic: Microgrid Safety

- **Upcoming Meeting:** Please put a hold on your calendars for these meetings. The dates and topics may be subject to change. We will confirm this meeting at the March 8, 2021 meeting.
  - Monday, March 22, 2021, 2-4PM
    Topic Consumer Protection

Reminder - Meeting Frequency

- Reoccurring Monday PMs Meetings in 2-hour time block

- Typically, meetings will be held every other week.
  - Staff may reschedule the meetings as necessary if there are other events where the majority of the RMWG will have a meeting conflicts.
  - Staff may adjust the frequency of the meetings as needed we have depending on the number of presentations.

- This is for the multi-property tariff phase only; the stand-by charges phase and other phase will be on a different schedule.

For more information:

Jessica.Tse@cpuc.ca.gov
https://www.cpuc.ca.gov/resiliencyandmicrogrids/