

Resiliency & Microgrids Working Group

Microgrid Integration and Interconnection

Resiliency and Microgrids Team, Energy Division
January 6, 2022



**California Public
Utilities Commission**

WebEx and Call-In Information

Join by Computer:

<https://cpuc.webex.com/cpuc/onstage/g.php?MTID=e598ad609c8ccff215860dc5287e7cb86>

Event Password: RMWG (case sensitive)

Meeting Number: 2484 126 3143

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- Please register using WebEx link to view phone number.
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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>.
- The meeting will not be recorded and there will not be meeting minutes.

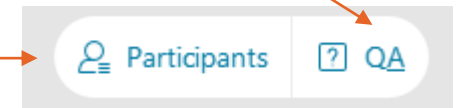
WebEx Logistics

- All attendees are muted on entry by default.
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 - The host will unmute you during Q&A portions [and you will have a maximum of 2 minutes to ask your question].
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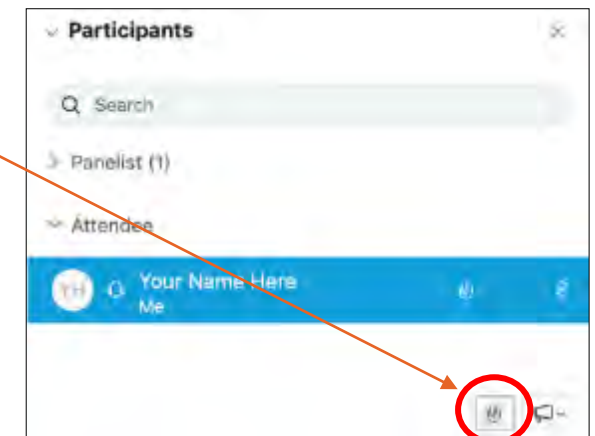
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WebEx Event Materials

Event Information: Resiliency and Microgrids Working Group Meeting 


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Event status: Not started ([Register](#)) [Join Event Now](#)

Date and time: Tuesday, March 2, 2021 9:30 am
Pacific Standard Time (San Francisco, GMT-08:00)
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Duration: 1 hour

Description:



Event material: [RMWG Meeting Material_EXAMPLE.docx](#) (31.7 KB)

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Preliminary Resiliency & Microgrids Working Group Schedule

Month	Resiliency and Microgrids Working Group Topics			
February	Standby Charges	Multi-Property Microgrid Tariff		
March				
April				
May				
June			Value of Resiliency	
July				
August				
September				Microgrid Interconnection
October				
November	Customer-Facing Microgrid Tariff Revisit			
December				
January				
February				

Interconnection: Working group participants will discuss interconnection and related issues as they specifically relate to microgrids. Topics will include interconnection requirements for grid-connected mode microgrid operations, controls, communications, and islanded mode microgrid operations where interconnection requirements are not applicable.

Agenda

- | | |
|---|---------------|
| I. Introduction (<i>CPUC Staff</i>) | 2:30p – 2:35p |
| • WebEx logistics, agenda review | |
| II. Interconnection Process from Applicant's Perspective | 2:35p – 4:25p |
| (<i>Tim McDuffie – Smarter Grid Solutions</i>) | |
| (<i>Allie Detrio – Microgrid Resources Coalition</i>) | |
| (<i>Tam Hunt – Green Power Institute</i>) | |
| • Presentations | |
| • Q&A | |
| III. Closing Remarks, Adjourn (<i>CPUC Staff</i>) | 4:25p – 4:30p |
| • Provide information on the next meeting | |

Guidelines for Today's Meeting

- Avoid direct discussion of Microgrid Incentive Program
- Assigned Commissioner's Amended Scoping Memo and Ruling resetting Track 4 filed December 17, 2021
- Joint Utility Proposed Microgrid Incentive Program Implementation Plan filed December 3, 2021
 - Opening comments due January 14, 2022
 - Reply comments due January 28, 2022

**Resiliency and Microgrids Working Group
R:19-09-009**

**Subject: Multi-Customer Microgrids
Interconnection Review Process
Improvements**

Tim McDuffie PE
January 6, 2022

Tim Mc Duffie, PE

Relevant Bio

- Degree in Electrical Engineering in 2006 from University of South Florida, Licenses in CA and FL
- Current Role: Senior Business Development Engineer, Smarter Grid Solutions, a Mitsubishi Electric Company
- Vice President of Engineering, California Commercial Energy 2014-2019
 - Designed and interconnected over 100 Solar and Solar + Storage projects throughout California
- Chairman of the CALSSA Grid Modernization Committee 2017-2021
- Party to many CPUC Working Groups including:
 - Rule 21 Expanded Pre-App Development
 - Rule 21 Working Group 3, Seasonal Load Adjustment (Issue 9)
 - Rule 21 Working Group 4, Anti-Islanding
 - Interconnection Capacity Analysis (ICA) Working Group

Summary

Important Term: Multi-Customer Microgrids (MCM)'s. This could be any form of TBD Tariff including but not limited to CMEP, CMET, MIP, etc.

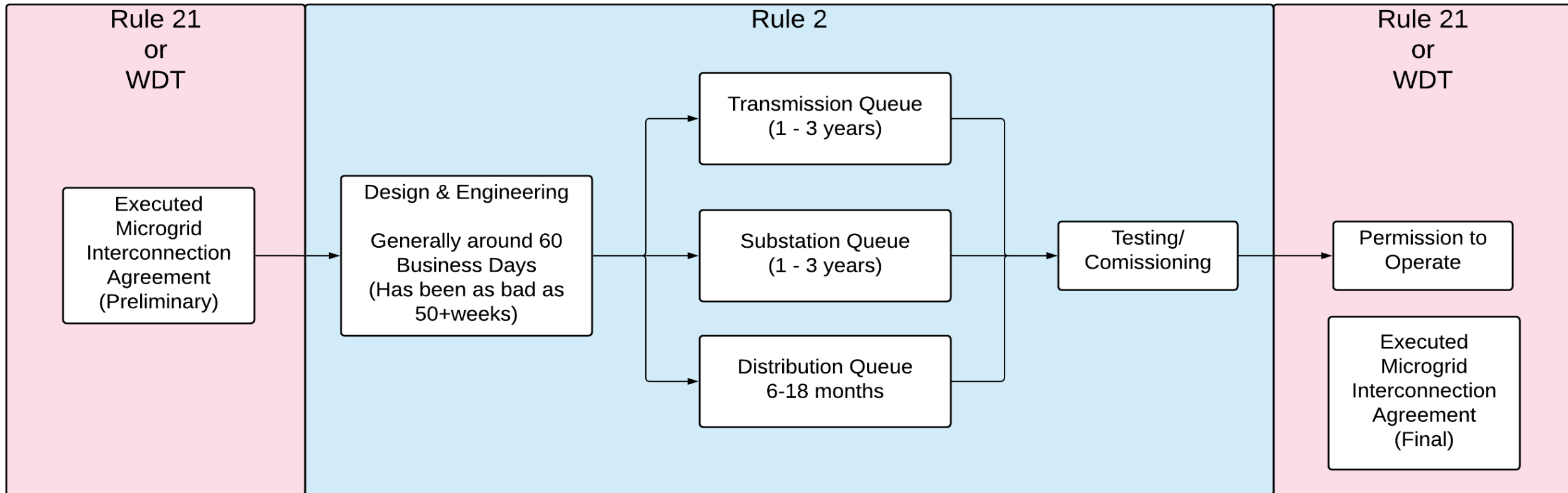
- California Rule 2's impact on project timeline
 - Rule 21 vs Rule 2
 - Discuss Rule 2, Section 1, Special Facilities
 - Amendments within Rule 2 for MCM's
- MCM Microgrid Example – Lac Megantic, Quebec, Canada
 - Microgrid Islanding Study
 - Review specific points
 - Proposal for streamlining and adding a tariff bounded timeline

Path of a Special Facility Deployment

1.5 years to 3+ years

Dependent on any other upgrade(s) in queue

Can serve as a project "rabbit hole"



Rule 21 & Rule 2

- Rule 21
 - Timelines, clear and generally good compliance
 - Few scope gaps or areas for process breakdown
 - Designed specifically for the purpose of interconnecting DER
- Rule 2, **Section I** - Special Facilities
 - No Timelines
 - Designed for “Special Facilities”, not MCM’s
 - Generally, for solar projects and customer requested projects outside of normal day to day business of IOU’s

MCM - Not a “Special Facility”

A Multi-Customer, Community Microgrid, that will serve multiple customers, and provide reliable service to the public in instances where the utility cannot, **does not fit the definition of a “Special Facility” in Rule 2**

*Rule 2 Section (1)-2 “**Special facilities** are (a) facilities requested by an applicant which are in addition to or in substitution for **standard facilities which (the IOU) would normally provide** for delivery of service at one point, through one meter, at one voltage class under its tariff schedules, or (b) a pro rata portion of the facilities requested by an applicant, allocated for the **sole use of such applicant**, which would not normally be allocated for such sole use.”*

Fails on the following merits:

1. There is no standard facility for serving customers during a PSPS or rolling blackout
2. MCM’s, by definition, benefit multiple customers.

Consideration for Multi-Customer Microgrids

The Working Group should consider introducing specific tariff language into a Rule 2 amendment for Multi-Customer Microgrids, in any form, given their benefit to the public at large and their use to serve the communities during forced outages.

This amendment should cover two specific areas:

- 1) Timelines for Design and Estimating of new facilities to serve an MCM
- 2) Timelines for Construction of MCM facilities

Rule 2 Amendment Terms

Projects Applying for Special Facilities Under any Multi-customer Microgrid or similarly aimed program

Any Special Facility Upgrade Request to support deployment of a multi-customer microgrid system to benefit disadvantaged vulnerable populations, for the purpose of public health, safety, and welfare or any other “Eligible Community” as determined by an applicable program shall be evaluated under the following timelines:

40 business days for design and estimating

6 months for facility construction at distribution level

12 months for facility construction at substation or transmission level

Note: Distribution and substation/transmission level clocks should start concurrently

Total: 9 – 15 months

Leaves time for project to go through testing, inspections, and commissioning.

Microgrid
Islanding Studies
Process Discussion



Microgrid Islanding Study

There will be some form of Islanding Study associated with an MCM, this Study should:

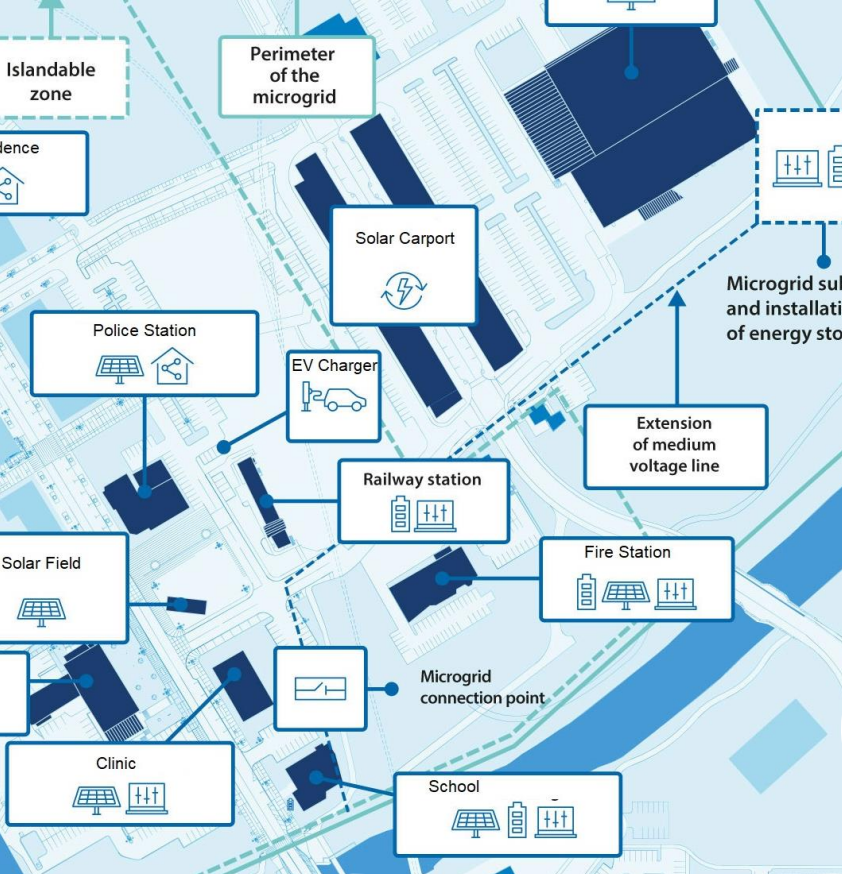
Have a clear and concise scope and timeline

Be focused on maintaining Rule 2 boundaries to maintain safe and reliable power service only

Avoid Seamless Transitions and any other feature that's not strictly necessary for implementation of MCM's

Why *Not* Seamless Transition?

- Requires an extremely detailed understanding of customer loads
- Requires top of the line equipment
- No way to “guarantee” seamless transition, too many variables
- Unrealistic that any segment of distribution system will function as an Uninterruptable Power Supply “UPS”
- Devices that need UPS’s, already have them
- ***Avoid Paralysis by Analysis.*** Create a framework that moves projects through the technical review process quickly and efficiently to serve Californians in need of power during outages.



Example: Quebec Lac-Mégantic Microgrid

In operation as of April 2021

Example of MCM

600 kWh of energy storage

524 kW of Solar-PV

855 kW sync-generator

Features: Grid Transitions, Black Start, Grid Support, Optimization, Load Management



Hydro-Québec

POWER SYSTEM STUDIES FOR LAC-MÉGANTIC MICROGRID

Final Report

Lac Mégantic Microgrid Study Summary

“... will conduct a power system study in order to check if the requirements of the Grid Code and related documents are fulfilled for connection of the Lac-Mégantic Microgrid to electricity transmission network in Quebec. The main objective is to perform **the steady-state and dynamic studies** in different scenarios of Microgrid operation for **Winter and Summer conditions.**”

Main Components

1. **Steady State Study**
2. **Transient Stability Study**
3. ***Protection Study**

***performed separately from this project, but still needed for both Islanded and non-islanded modes**



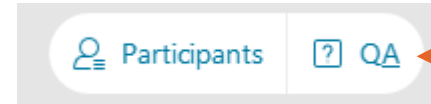
Study Process

- Any new Tariff should include specific screens to be reviewed as part of the Microgrid Interconnection Study (MIS) process
- Tariff should define specific MIS parameters common to all MCM projects
- MIS should be performed in parallel to Rule 21 or WDT Interconnection Review process
- The MIS should be provided simultaneously with the Supplemental Review Results or Detailed Study Review Results:
 - **20 Days within Fast Track**
 - **60 Days if submitted directly to Detailed Study**

Q&A and Discussion

WebEx Tip

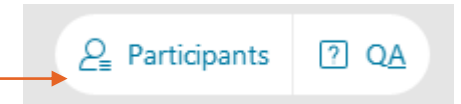
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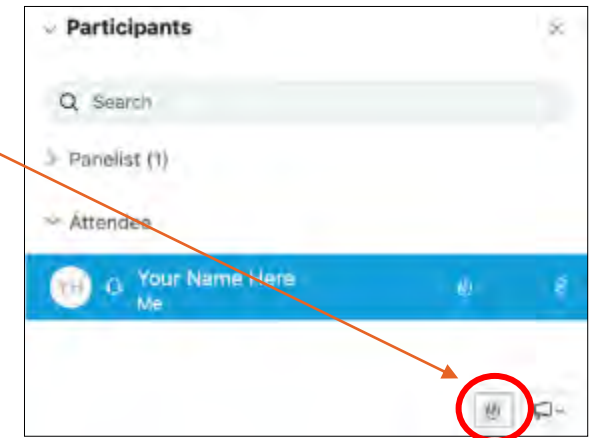
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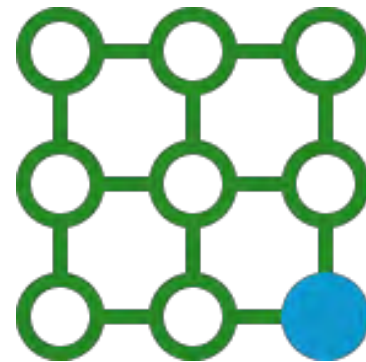


RMWG

Allie Detrio

MRC Senior Advisor

January 6, 2022



Agenda

- ◆ **Tariff options available to microgrids with multiple resources**
 - ◆ **NEM-MT**
 - ◆ **BTMM**
- ◆ **Challenges with pairing technologies and interconnecting under existing tariffs**
- ◆ **Microgrid needs to be recognized as single controllable entity in the interconnection process, whether single or multi-customer**
- ◆ **MRC proposed solutions**

SB 1339 Defines Microgrids in California

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◇ “**Microgrid**” means an interconnected system of loads and energy resources, including, but not limited to, distributed energy resources, energy storage, demand response tools, or other management, forecasting, and analytical tools, appropriately sized to meet customer needs, within a clearly defined electrical boundary that can act as a single, controllable entity, and can connect to, disconnect from, or run in parallel with, larger portions of the electrical grid, or can be managed and isolated to withstand larger disturbances and maintain electrical supply to connected critical infrastructure.

◇ **Stern, 2018**

Discussion topics

◆ **For single customer microgrids:**

- ◆ How to pair non-solar generation + battery?
- ◆ How to improve NEM-MT or replace it with BTMM?
- ◆ How do we make BTMM functional and workable?

◆ **For multi-customer microgrids:**

- ◆ Allow master metering to enable protected “wheeling” between customers
- ◆ Allow customers within microgrid boundary to designate Agent to transact on their behalf
- ◆ Create simplified tariff for transaction at the PCC between Agent and Utility
- ◆ Value stack of services that can be elected – create standardized Distribution Support Services Agreement (DSSA)

NEM-MT Metering Options

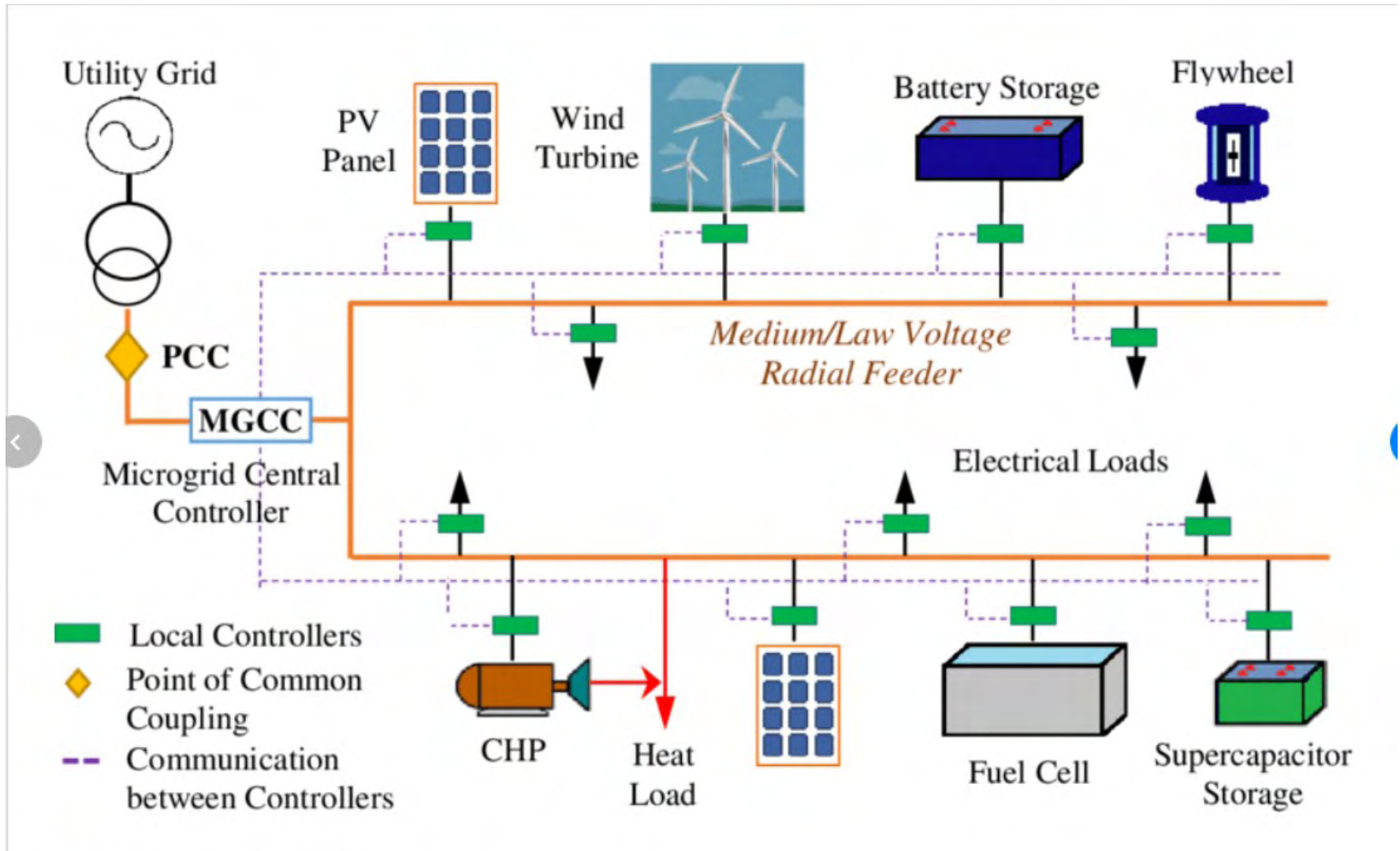
- ◆ Multiple Tariff Facility Configurations and Metering.
- ◆ 1) Except for Load Aggregation Arrangements, for two or more types of NEM-eligible Constituent Generator Groups, the customer-generator must select one of the following options:
 - ◆ a) Install NGOM on each Constituent Generator Group. In addition, metering is required at the PCC capable of separately registering the flow of energy (kWh) in two directions. Billing credit will be calculated as provided for in Special Condition 4.f. Generation Rate Component charges are the charges for energy (kWh) used based on the generation rate component of the energy charge under the customer-generator's rate schedule(s). Billing credit will be applied consistent with the appropriate net metering tariff as follows:
 - ◆ i. First, apply NEMBIO credits (if any) to Generation Rate Component charges on any aggregated accounts, and then to Generation Rate Component charges on the account served by the generating facility (Host Account).
 - ◆ ii. Second, apply NEMFC credits (if any) to Generation Rate Component charges on the account served by the generating facility.
 - ◆ iii. Third, apply NEM2 credits (if any) as appropriate to the remainder of energy charges except for NBC charges for usage supplied by the grid on the account served by the generating facility.
 - ◆ iv. Fourth, apply NEM credits (if any) as appropriate to the remainder of energy charges on the account served by the generating facility.
 - ◆ v. No credits shall offset NBC charges calculated on all usage supplied from the grid.
 - ◆ b) If the customer-generator has Constituent Generator Group(s) eligible for Schedule NEMBIO or NEMFC, and has a Constituent Generator Group eligible for Schedule NEM2 and/or NEM consisting of one or more Renewable Electrical Generation Facilities, the customer-generator may elect to take service for such under either Schedule NEMBIO or NEMFC, as appropriate, for all of the Constituent Generator Group(s). Likewise, if the customer-generator has Constituent Generator Group(s) eligible for NEM and NEM2, the customer-generator may elect to take service for both under NEM2.

NEM-MT Metering Options

- ◆ Multiple Tariff Facility Configurations and Metering.
- ◆ 2) For all eligible combinations of NEM-Eligible Constituent Groups and non-NEM eligible Constituent Groups, the Customer-Generator must select one of the following options:
 - ◆ a) **The Non Export Relay Option:** A Customer-Generator must install a Non-Export relay on their non-NEM Constituent Generator Groups and install metering as follows: 1) If there is only one type of NEM-eligible Constituent Generator Group then metering at the PCC is all that is required and the terms of the appropriate NEM2 tariff for that group will apply; 2) If there are two or more types of NEM2-Eligible Constituent Generator Groups, then Metering at the PCC and NGOM metering of each NEM2-Eligible Constituent Generator Group is required. The requirements of Special Condition 4.f and 4.g apply.
 - ◆ b) **The Load Metering Option:** The customer-generator must install NGOM on each NEM2-Eligible Constituent Generator Group, install energy consumption metering at the load, and install metering at the PCC as follows: 1) If there is one type of NEM2-Eligible Constituent Generator Group then the terms of the appropriate NEM2 tariff for that group will apply; 2) If there are two or more types of NEM2-Eligible Constituent Generator Groups, then the terms of Special Condition 4.f and 4.g apply.
 - ◆ c) **The Interval Meter Option:** The customer-generator must install interval NGOM on each NEM2-Eligible Constituent Generator Group and install interval metering at the PCC as follows: 1) If there is one type of Constituent Generator Group then the terms of the appropriate NEM2 tariff for that group will apply; 2) If there are two or more types of NEM2- Eligible Constituent Generator Groups, then the terms of Special Condition 4.f and 4.g for interval metering apply. Energies (kWh) generated in an interval are aggregated over a billing period according to the OAS.
- ◆ Multiple Tariff Facilities involving multiple Load Aggregation Constituent Generator Groups, except for those allowed under Special Condition 5.g above, are not permitted at this time.

NEM-MT -> BTMM

- ◆ **Challenges facing microgrid industry**
 - ◆ Batteries cannot be paired with certain resources (fuel cells, linear generators)
 - ◆ NEM-MT is clunky and does not contemplate microgrids as a single controllable entity
 - ◆ NEM-MT does not allow for multiple aggregations of loads and generators
 - ◆ BTMM is not functional as currently written
- ◆ **How do we modify BTMM to easily and quickly interconnect sophisticated microgrids that include multiple generating and storage resources as a single controllable entity?**



Schematic diagram of a Microgrid.

Proposal for interconnection

- ◆ **Allow for master metering behind the Point of Common Coupling (PCC)**
 - ◆ Allow any combo of resources to be interconnected together
 - ◆ Need to be able to run 3rd party SCADA system up to the PCC and 3rd party needs to run microgrid controller
 - ◆ No one is upending the must serve obligation of the utility by installing a microgrid
 - ◆ In the event that the operator no longer controls the microgrid, the utility can still serve the customer
 - ◆ Allows customers to aggregate both loads and generating and storage resources easily
- ◆ **Microgrids should have installed at the PCC:**
 - ◆ NGOM for metering
 - ◆ ATS/switchgear
 - ◆ Other protection or isolation device (same equipment in a solar disconnect)
- ◆ **Microgrid rate schedule should be developed for the transaction at the PCC utilizing Rule 21, or make a modification to the Rule 21 interconnection process for microgrids**

Need for simplification and streamlining

- ◆ **One tariff and rate schedule for the interconnection and transaction with the utility**
- ◆ Microgrid Operator should be able to transact with utility as an Agent on behalf of its included customers
- ◆ Microgrid Operator is responsible for risk, liability, infrastructure costs, and end use billing behind the PCC when multiple customers are involved
- ◆ **MRC Proposed Microgrid Tariff:**
 - ◆ Eligible microgrid exports must be cleaner than grid power
 - ◆ Verified power content label submitted as part of interconnection agreement
 - ◆ Exports are “controllable” and respond to TOU price signal or dispatch
 - ◆ Top 200 hours of need at circuits below substations compensated at ELRP rate \$2/kWh
 - ◆ Establish menu of values for specific grid services and allow for stacking via DSSA
 - ◆ Establish locational values for microgrids sited in strategic locations (HFTD, local reliability area)

Some CA Microgrid Examples

- ◇ Blue Lake Rancheria
- ◇ UC Irvine
- ◇ UC San Diego
- ◇ Miramar Marine Air Corps



Community Microgrid at Blue Lake Rancheria

Microgrid Design

Solar: 420 kW AC PV ground-mounted array

Energy Storage: 500 kW / 950 kWh lithium-ion battery storage

Software & Controls: Siemens Spectrum Power 7 Microgrid Management System and Schweitzer Engineering Laboratories Protection Relays

Other Infrastructure: Purchased distribution system infrastructure to create a new point of common coupling with the grid, integrating six buildings into the microgrid behind one electric meter

Technology Integration: The Schatz Energy Research Center at Humboldt State University



UNIQUE PROJECT ASPECTS

- ✓ American Red Cross shelter
- ✓ Successfully islanded during several unplanned utility outages due to weather and nearby wildfires
- ✓ Can deploy five levels of load shedding depending on the outage and system conditions
- ✓ Achieving cost savings: 58% overall energy



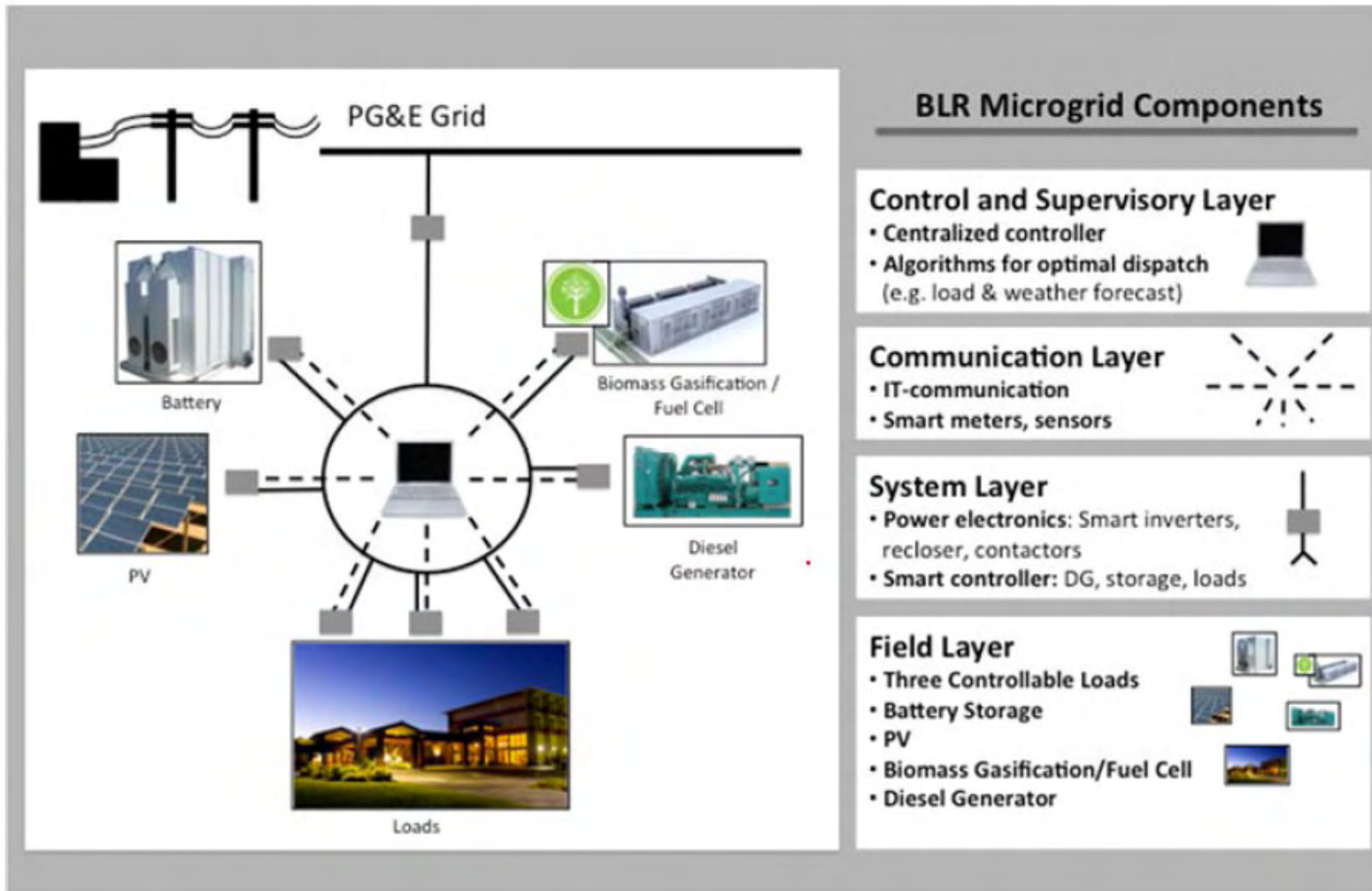


Figure 2. Blue Lake Rancheria low-carbon microgrid components.

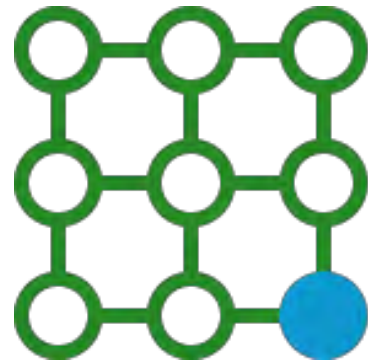
Thank You!

Contact:

Allie Detrio

allie@reimagine-power.com

info@microgridresources.org

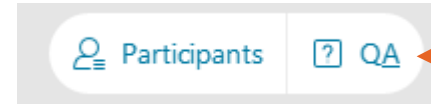


mrc
Microgrid Resources Coalition

Q&A and Discussion

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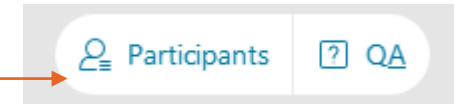
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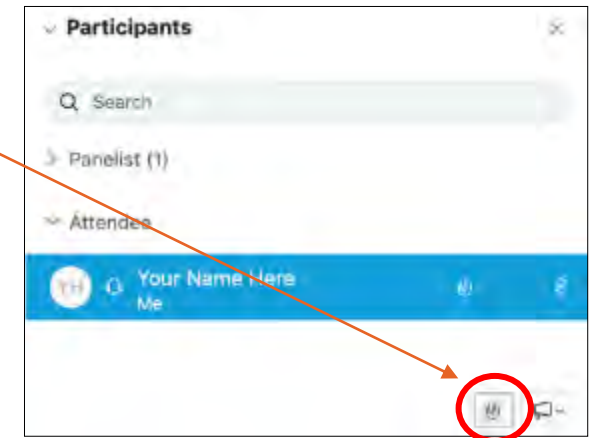
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Interconnection hurdles for community microgrids and potential solutions

Tam Hunt

Consulting attorney for the Green Power Institute

Jan. 6 2022

Overview

- Review of interconnection data
- MIP guidelines currently require online date only 24 months after Implementation Plan approval – far too short
- Potential solutions for microgrid—specific interconnection reform
 - Choosing the appropriate forum for reform
 - Interconnection automation and streamlining
 - Creating a new Rule 21.1 specific to microgrids

A large part of why microgrids and DERs have struggled is interconnection issues

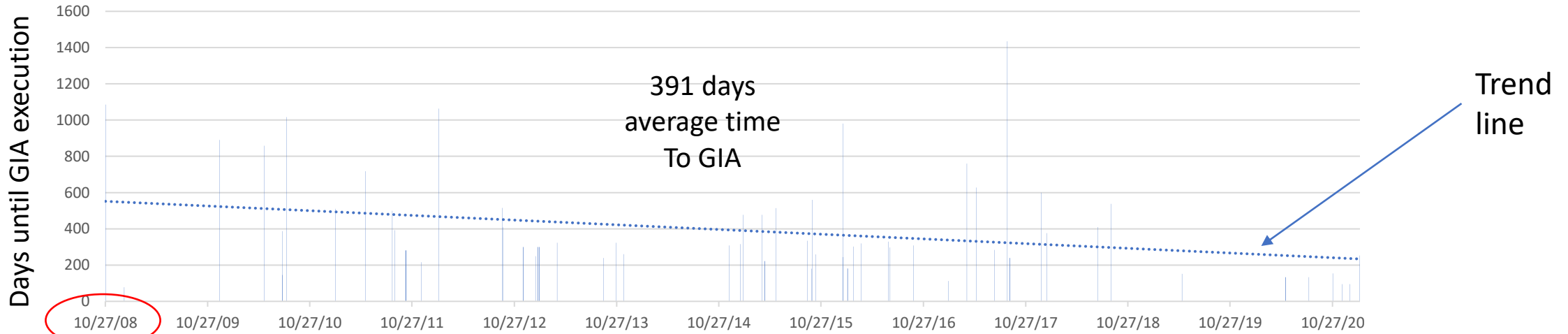
- Despite the presence of a “Fast Track” process in Rule 21 and WDAT/WDT, interconnection for DER is still extremely difficult in many cases
- And many front-of-meter DER interconnect with WDAT/WDT
- We confine our data here, however, to Rule 21
- Microgrids will face even more hurdles due to islanding, etc.

	# of exporting FT applications 2008-pres.	# of GIAs executed/ in serv.	% of GIAs executed/ in serv.	Average size	Ave. time for executed GIA
SCE	526	51	9.7%	1.4 MW	391 CD
PG&E	1,300	70	5.4%	1.0 MW	?

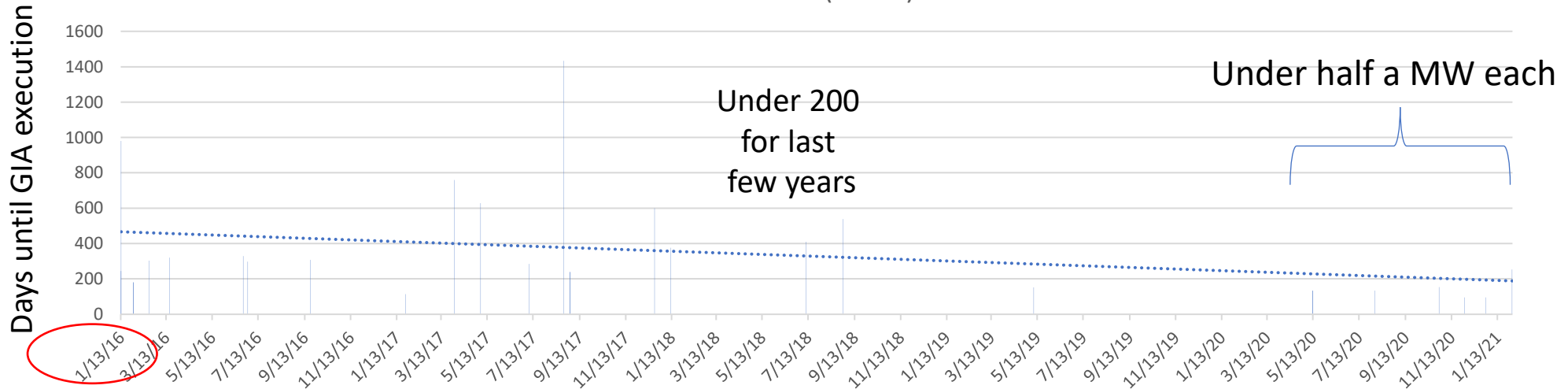
* We do not rely on the Guidehouse review of Rule 21 interconnection data b/c that review was incomplete and its analysis was flawed in various areas

SCE Rule 21 exporting Fast Track interconnection applications

Duration (calendar days) from Interconnection Request received to executed GIA (n = 68)



Since 2016 (n = 28)



So ... how do we ensure that interconnection hurdles don't prevent timely deployment of community microgrids?

1. Would a microgrid-specific interconnection preapplication report be helpful for community microgrids?
2. Should a separate interconnection tariff (Rule 21.1) for community microgrids be created?
3. Can interconnection application process and study automation be ramped up in a timely manner to assist microgrids?
4. Should Rule 21 be revised for an expanded domain of applicability?

1. Microgrid-specific interconnection preapplication report

- Interconnection preapplication reports are available for Rule 21 and WDAT
- There are some issues specific to MGs that weigh in favor of offering a microgrid-specific preapplication report option
- Preapplication report could provide preliminary data about possible islanding or upgrade issues, which are not provided in existing preapplication report options
- Draft JIP's "Consultation and Application" phase seems to implicate something like this (see p. 14 et seq.)

2. Create a new Rule 21.1
microgrid interconnection tariff?

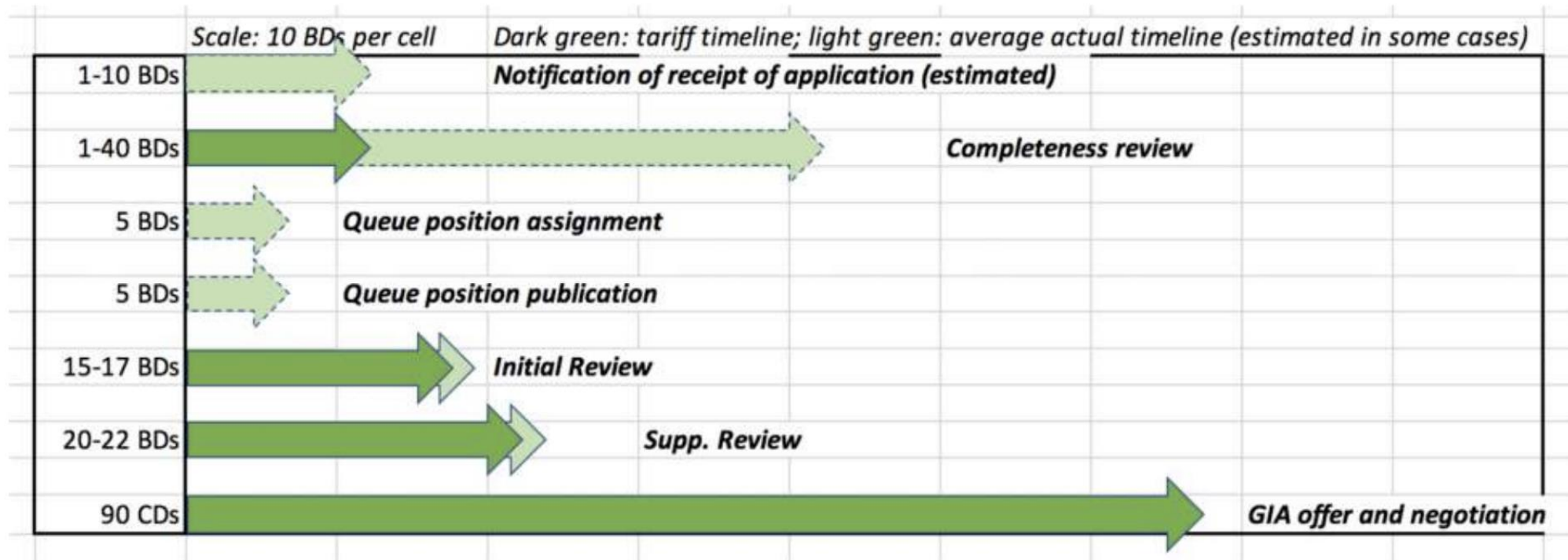
Creating a new interconnection tariff for microgrids

- PG&E's CMET is best characterized as a supplemental interconnection tariff specific for microgrids
 - The primary item it describes is the Microgrid Islanding Study
 - And it also provides for the possibility of reimbursement for islanding equipment costs
- GPI suggests that a new tariff Rule 21.1 that is specific to interconnection of microgrids may be helpful, as follows:
 - Provides applicants an option to study all MG components jointly in a single application
 - Includes a Microgrid Islanding Study
 - Includes timelines to the same or better granularity than the current Rule 21
 - Would apply to all IOUs, including PG&E

3. Interconnection automation and streamlining

GPI/Clean Coalition automation of interconnection recommendations

Figure 1. *Fast Track timelines under Rule 21.*



GPI/Clean Coalition automation recommendations

- **These come from the Rule 21 Working Group Two Final Report Issue 8 Appendix, drafted by GPI and Clean Coalition in 2018:**
- **Automating the application process and completeness review.** Utilities must inform the applicant whether the application is deemed complete, or must be corrected, within 10 business days (BDs) after receipt of the Interconnection Request (E.5.a). In practice, this step can take two months or longer if multiple corrections are required (as is common for larger projects). Automation of the interconnection portal and application processing could reduce this step to one day for those projects that don't need corrections, as well as dramatically reduce the time required for each round of corrections, and can build upon existing on-line application portals for net-metered projects, which already significantly reduce application processing times through partial automation. PG&E states that it has already planned for the work required to automate the application portal and its small NEM application review is already automated. SCE has gone out to bid for similar work to update and partially automate its interconnection portal, but the full extent of this effort is not known at this time. SDG&E currently has no plans to further automate its DIIS application portal.

GPI/Clean Coalition automation recommendations

- **Automating (at least partially) Initial Review.** Initial Review must be delivered within 15 BDs of the application being deemed complete (F.2.a). If applicable screens can be cleared automatically through use of data from the online application inputs and ICA data, it may be feasible to reduce the Initial Review to 1 BD. This report identifies feasible ways for achieving this level of automation. PG&E agrees with the merits of automating IR, and notes that all screens except F and G are already automated, but considers it necessary to maintain the 15 BD review in order to allow engineers to study mitigation options for projects that fail IR.
- **Automating (at least partially) Supplemental Review.** Supplemental Review must be completed within 20 BDs (F.2.c). Parts of SR may already be automated with the existing ICA (screens N and O are already automated with the current ICA). Under the currently-defined SR screens, this leaves only screen P, a “catch all” safety and reliability screen, to be completed in SR. PG&E agrees that parts of SR can be automated but note that a cost/benefit analysis should be completed before a decision on full automation is made by the Commission.

GPI/Clean Coalition automation recommendations

- **Frontloading Supplemental Review screens N and O into Initial Review.** Projects that are less than or equal to displayed ICA value, or otherwise expect to interconnect without need for Supplemental Review, may be susceptible to largely automated initial review. Frontloading screens N and O into IR will allow an easier automation of Initial Review because screen N makes screen M redundant and screen O renders some IR screens, or at least part of those screens, redundant.
- **Combining Initial Review and Supplemental Review.** [This recommendation was adopted in D.20-09-035 and is in the process of being implemented by advice letters submitted in December 2020 but not yet ruled on by the Commission]
- **Frontloading and automating the Generator Interconnection Agreement (GIA) generation and offer process.** A GIA currently must be offered to most applicants within 15 BDs of passing Initial Review or 15 BDs of applicant's request after passing Supplemental Review (F.2.c.iv). This step could be "frontloaded" by offering a fully or partially populated provisional GIA once an application is deemed complete, allowing the applicant to begin detailed review of the draft GIA much earlier than under the existing process. Execution of the final GIA may be streamlined by such frontloading and also by including the key IR or SR results in a second, automatically-generated, GIA, such that the fully populated draft GIA generation process takes only 1 BD for the large majority of projects instead of the 15 BDs currently allowed in the tariff. Frontloading of the initial GIA should also reduce the 90 CD negotiation period. PG&E is already planning this work but notes that it will be difficult to automate inclusion of mitigation options into the GIA. SCE has recently completed a behind-the-meter energy storage interconnection pilot that included frontloading the GIA; SCE has no plans currently to expand this pilot approach to additional technologies. GPI notes that the utilities don't generally offer mitigation options until Supplemental Review is completed, so it is not clear that a 15 BD timeline for IR is necessary if this is the case, even for projects that fail IR. In GPI's experience, IR results in a short report, usually sent as an email, stating which screens, if any, are failed, with information about the applicant's choices for how to proceed.

4. Expand Rule 21 domain of applicability

Rule 21 jurisdiction jurisdiction

- Behind the meter
- Front-of-meter for incumbent utility only (considered not interstate commerce)
- [FERC v. EPSA](#), 577 U. S.__(2015), states:
 - [The Federal Power Act] limit[s] FERC's sale jurisdiction to that at wholesale," reserving regulatory authority over retail sales (as well as intrastate wholesale sales) to the States. *New York*, 535 U. S., at 17 (*emphasis deleted*); see 16 U. S. C. §824(b); *supra*, at 3. FERC cannot take an action transgressing that limit no matter its impact on wholesale rates... The Act makes federal and state powers "complementary" and "comprehensive."

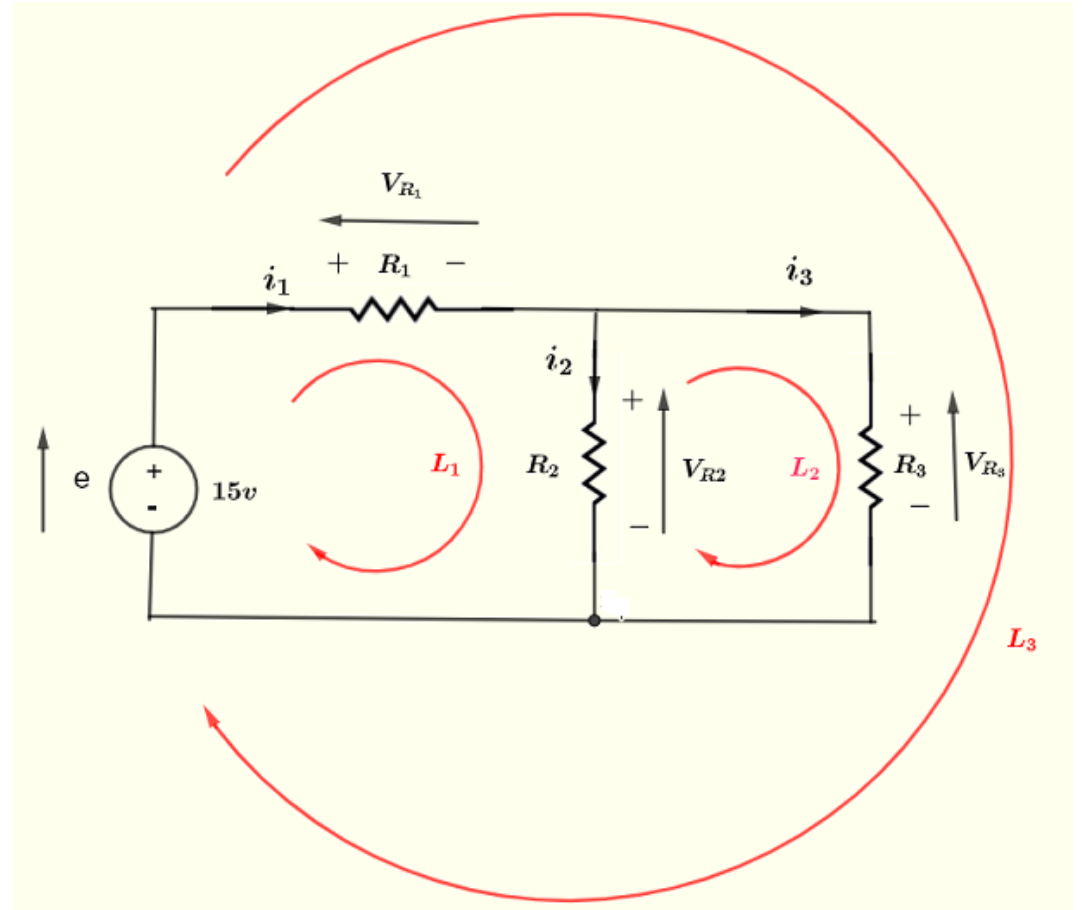
FERC WDAT

- Front-of-meter where there is an interstate commerce component
- Based on precedent, this means in effect any time power is sold to any entity that isn't the incumbent utility

Can Rule 21 jurisdiction be expanded?

CPUC can exert a broader jurisdiction for Rule 21 based on argument that interstate commerce is not actually implicated for any distribution-level interconnections

DER electrons are designed to stay below transmission level, and if that's the case where is the interstate commerce?



Kirchhoff's law essentially states that current flows first to wherever there is least resistance

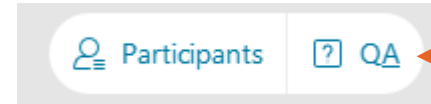
Thank you

- Tam Hunt
- Consulting Attorney
- 805 214 6150

Q&A and Discussion

WebEx Tip

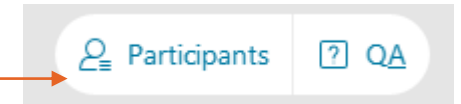
Option 1:



Access the written Q&A panel here

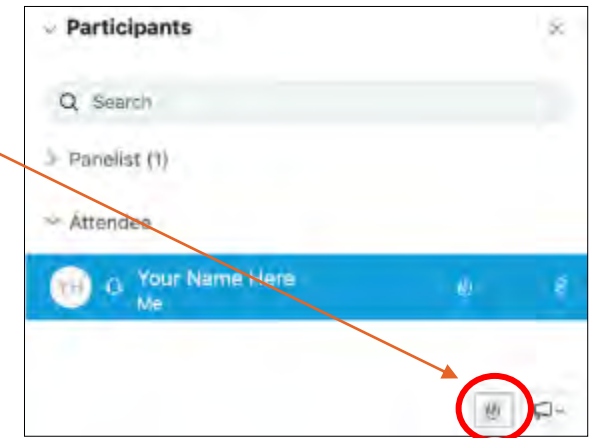
Option 2:

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.



Closing and Upcoming Meetings

Upcoming Meetings

- Thursday, January 27, 2022 (2 pm – 4 pm)
 - Selective De-energization Within a Microgrid Island
 - DC Metering Standard (brief re-visit)
 - Recap of Interconnection Sessions and Recommendations



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<https://www.cpuc.ca.gov/resiliencyandmicrogrids/>