

# NARUC/NASEO MICROGRIDS STATE WORKING GROUP

**Webinar:** Microgrid Tariff Development in Hawaii and California

September 8, 2021 | 2:00 – 3:00 pm ET

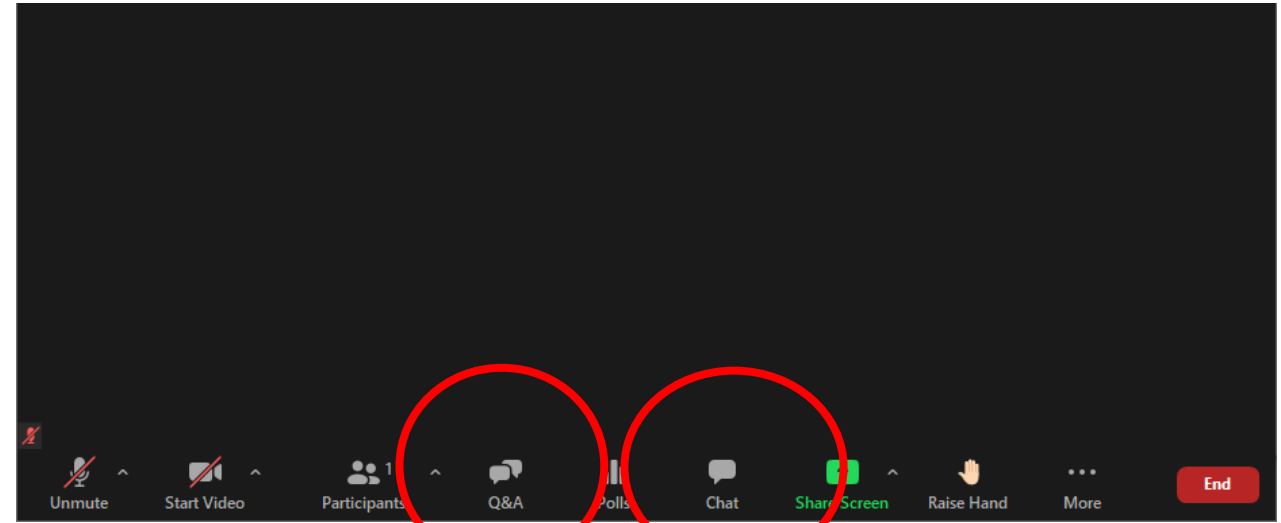


**NASEO**  
National Association of  
State Energy Officials

# QUESTIONS

To submit questions

1. Type a question into the Q&A box (preferred)
2. Type a question into the chat box



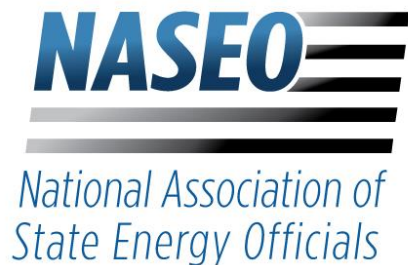
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# AGENDA

- Welcome and Introductions
  - Moderator: **Alex Fisher**, Policy Analyst, District of Columbia Department of Energy and Environment
- Speakers
  - **Andrew Okabe**, Utility Analyst, Hawaii Public Utilities Commission
  - **Jessica Tse**, Senior Analyst, Resiliency and Microgrids, California Public Utilities Commission
- Q&A



# Hawaii Public Utilities Commission Review of Microgrid Services Tariff

September 8, 2021



# Agenda

- Overview
- Development of Microgrid Services Tariff
- Customer and Hybrid Microgrids: Differences and Objectives
- Highlights of the Microgrid Services Tariff
- Next Steps



# Overview of the Microgrids Services Tariff Investigation

- Docket No. 2018-0163 Microgrid Services Tariff Investigation, opened on July 10, 2018 to meet Act 200 (SLH 2018), codified under HRS § 269-46.
- Phase 1 – resulted in Hawaiian Electric Rule No. 30, approved May 17, 2021
  - Approximately 3 years, 15 Working Group Meetings, 6 Technical and Status Conferences, and 99 filings over 2,762 pages.
  - Resulted in a Microgrid Services Tariff filed with the HPUC by Hawaiian Electric.
  - Contemplates two types of Microgrids delineated by distribution wires ownership, Customer and Hybrid.
- Phase 2 – currently in planning stages
  - Continued development of the Microgrid Services Tariff.
  - Additional support for other business cases.



# Development of the Microgrid Services Tariff

Orders, Briefs, Working Groups, Technical Conferences



# Start of Proceeding / Initial Working Groups

- Act 200 SLH 2018 / GM No. 1309 / HB2110 HD2 SD2 signed into law (Jul 10, 2018)
- Order No. 35566 opened Docket No. 2018-0163 (Jul 10, 2018), Order No. 35884 granted motions to intervene and other dates (Nov 21, 2018)
- Technical Conference hosted by HPUC (Jan 9, 2019)
- Order No. 36106 added guidance (Jan 22, 2019)
- Party Briefs / Reply (Feb 8, 2019 / Mar 11, 2019)
- Order No. 36481 resolution priority with Market Facilitation Working Group / Interconnection Standards Working Group (Aug 20, 2019)
- Order No. 36514 procedural schedule (Sep 12, 2019)
- Technical Conference hosted by HPUC (Sep 19, 2019)
- Working Group Meetings (Oct 3 – Nov 5, 2019)
- Technical Conference hosted by HPUC (Nov 14, 2019)
- Working Group Meetings (Nov 21 – Dec 3, 2019)
- Status Conference hosted by HPUC (Jan 9, 2020)
- Letter Commission Guidance (Jan 16, 2020)
- Working Group Meetings (Jan 17 – Feb 11, 2019)
- Working Group Report (Feb 14, 2020)
- Technical Conference hosted by HPUC (Feb 27, 2020)
- Hawaiian Electric Draft Tariff (Mar 30, 2020)
- Parties' Comments to Draft Tariff (Apr 27, 2020)





# Finalization of the Microgrid Services Tariff

- Letter Commission Guidance and redlines (Nov 27, 2020)
- Technical Conference hosted by HPUC (Nov 30, 2020)
- Letter Commission Guidance reconvene working group (Dec 10, 2020)
- Filings on areas of consensus (Feb 1, 2021)
- Parties' filings on areas of disagreement (Feb 10, 2021)
- Parties' comments on disagreement and revisions (Feb 17, 2021)
- Order No. 37786 on Phase 1 ordering that the Tariff be made available with modifications (May 17, 2021)



# Objectives of Customer and Hybrid Microgrids in the Microgrid Services Tariff

3<sup>rd</sup> party procured distribution grid vs Utility provided distribution grid



# Differences Between Customer and Hybrid Microgrids

## Customer Microgrid

- 3<sup>rd</sup> party or Customers build behind the meter infrastructure to allow for distribution network of the microgrid.
- No limit on size, but technical and economic constraints with distance and number of participants.

## Hybrid Microgrid

- Utility wires utilized as the Microgrid's distribution network.
- Limited to 5MW Oahu / 1MW Hawaii Island and Maui / 0.5MW Lanai and Molokai per project.



# Objectives for Customer Microgrids

- Customer Microgrids have already been deployed in Hawaii, but largely limited to single customers or groups of affiliated customers.
- Providing a way for Microgrid Developers to be formally allowed to physically aggregate multiple customers behind each customer's PCC is an enhancement on the pre-tariff approach to Customer Microgrids.
- Participation by un-affiliated customers, such as a residential neighborhood, is enabled.



# Objectives for Hybrid Microgrids

- Missing from Microgrid deployment in Hawaii are Microgrids that utilize distribution grid infrastructure without a one-off negotiation with the Electric Utility.
- The name Hybrid was an allusion to the nature of having multiple different owners of various grid side and demand side infrastructure being included in a microgrid rather than just Customer sited / sided infrastructure.
- By leveraging the Electric Utility distribution grid infrastructure, costs to deploy Hybrid Microgrids should be lower.
- By making a formal tariff process, contract negotiation as a barrier to entry can be reduced.



# Highlights of the Microgrid Services Tariff

Customer / Hybrid Microgrid Tariff, Disclosure Checklist, Participant Bill of Rights  
Hybrid Microgrid Agreement



# Tariff Highlights

## Features Common to all Microgrids

- Applications served on first come first served basis
- Existing DER/DR programs will remain with any export credits intact in grid connected mode
- Optional feasibility study offered to take up to 120 days
- Disclosure checklist is required, and bill of rights provided to participants
- Scheduled and unscheduled operation allowed, no specific requirement for Standby Charges
- No Microgrid Operator Fees

## Features Specific to Customer Microgrids

- 3rd party /customer build behind the meter infrastructure
- No limit on size per project, No agreement forms needed

## Features Specific to Hybrid Microgrids

- Participants retain Utility billing and export credits while islanded
- Non-Programmatic / PPA generation support are provided CGS+ credit payments while islanded
- 10-year term, extendable upon agreement between Utility and Microgrid Operator
- Commercial General Liability Insurance of at least \$5M
- Utility wires utilized as part of the Microgrid's distribution network
- Limited to 5MW Oahu / 1MW Hawaii Island and Maui / 0.5MW Lanai and Molokai per project
- Agreement forms needed



# Hybrid Disclosure Checklist / Microgrid Participant Bill of Rights Highlights

## Disclosure Checklist

- Basic information about the Hybrid Microgrid
- Line-Item sign-off for disclosure of each item by Developer or Operator

## Microgrid Participant Bill of Rights

- 2-page (one sided) bill of rights with contact information to various Hawaii State offices and agencies





# Next Steps: Phase 2



# Phase 2

- Potential opportunities for discussion
  - Further streamline the Microgrid Services Tariff
  - Expanded use of voluntary islanding
  - Additional support of Microgrid development
  - Address “parking lot” items from Working Group report



# Thank You

Questions can be directed to [Andrew.J.Okabe@Hawaii.gov](mailto:Andrew.J.Okabe@Hawaii.gov)



**STATE OF HAWAII**  
**PUBLIC UTILITIES COMMISSION**  
465 S. KING STREET, #103  
HONOLULU, HAWAII 96813

# Resiliency & Microgrids Rulemaking 19-09-009

## Summary of CPUC Tariff-related Decisions

Resiliency and Microgrids Team, Energy Division

Joyce Steingass, Senior Utilities Engineer

Jessica Tse, Senior Regulatory Analyst

September 2021



California Public  
Utilities Commission

# Agenda

- I. Overview of Senate Bill 1339 and Implementation Approach
- II. Community Microgrid Enablement Tariff
- III. Multi Customer Multi Property Tariff
- IV. Behind the Meter Tariff

# Background and Overview



California Public  
Utilities Commission

# Senate Bill 1339

Senate Bill 1339 (Stern, 2018) mandated the Commission to facilitate the commercialization of microgrids for distribution customers of large electrical corporations. Constraints within the legislation govern tariff development. To facilitate commercialization of microgrids, components include:

- Rates, tariffs, and rules, as necessary
- Remove barriers for deploying microgrids across large IOU territories
- Without shifting costs onto non-benefiting customers
- Prioritizing and ensuring worker, public, and the electric system's safety and reliability

\*Constraints within the legislation govern tariff development. The separate rates and tariffs shall not compensate a customer for the use of diesel backup or natural gas generation except where natural gas is a distributed energy resource.

# Implementation Approach

## Microgrids and Resiliency Staff Concept Paper (July 2020) [LINK](#)

- Established a conceptual foundation for accompanying staff proposals for facilitating the commercialization of microgrids and ongoing work related to development of policies.
- Proposed working definitions for following key concepts: microgrids, resiliency, and commercialization.
- Describe the essential attributes and value propositions of microgrids.
- Identify potential barriers to the commercialization of microgrids and proposed methods for addressing them.



# Proceeding Implementation Approach

## Track 1

Adopted short-term solutions to accelerate interconnection of resiliency projects in advance of the 2020 wildfire season.

**PG&E's Community  
Microgrid Enablement  
Tariff**

## Track 2

Developed standards, protocols, rates and tariffs to support microgrid barriers.

**Behind the Meter  
Tariff**

## Track 3

Exemptions from standby charges for certain microgrids.

## Track 4

Phase A: Steps that can expedite or accelerate clean energy project development asap, particularly Summer 2022 and 2023.

Phase B: Microgrid Incentive Program; develop multi-property, multi-customer tariff.

**Multi-Property, Multi-  
Customer Tariff**

# Resiliency & Microgrid Working Group

The RMWG aims to help parties and staff identify and refine concrete, actionable proposals for later introduction into the formal proceeding.

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

# Community Microgrid Enablement Tariff



California Public  
Utilities Commission

# Background and Overview

The Commission expedited actions to prepare for the 2020 Wildfire Season by requesting utilities to propose microgrid and resiliency projects. Pacific Gas and Electric Company sought Commission authority to implement a Community Microgrid Enablement Program. The Commission authorized the Program in June 2020.

- First-of-its-kind, two-year exploratory program that facilitates the development of community-scale, in-front-the-meter microgrids.
- Features proactive enhanced technical consulting for disadvantaged and vulnerable communities.
- Provides funding to offset distribution system upgrades needed to support islanding.
- Sets aside funding specifically for disadvantaged and vulnerable communities.

# Community Microgrid Eligibility Criteria

## 1

### Location:

At least one customer served by the microgrid must be located either in

- Tier 2 or Tier 3 High Fire Threat District; or
- area impacted by a past PSPS event, or
- area prone to outages.

## 2

### Customers Served:

Project meets needs of

- at least one Critical Facility, and
- at least one additional customer within the electrical boundary of the microgrid.

## 3

### Parameters:

Project includes energy generating resources that do not exceed 20 MW

- Act as a single, controllable entity
- Can connect to, disconnect from, and run in parallel with larger portions of the electrical grid;
- Maintain electrical supply & service quality when islanded

# Technical Consulting Services

PG&E's CMEP features prioritized proactive outreach to disadvantaged and vulnerable communities.

- Early collaboration with community leaders and CBOs supplemented by PG&E's grid knowledge may result in pinpointing favorable locations for community microgrids.
- Technical Support will progress through 3 stages:
  1. Vetting
  2. Solution Assessment
  3. Solution Execution
- This facilitated approach verifies project feasibility and supports the community to accomplish the prerequisites for the project cost offset.

# Tariff and Microgrid Operating Agreement

PG&E's Community Microgrid Enablement Tariff is the experimental tariff that implements the Community Microgrid Enablement Program. Featuring the engineering studies and necessary Microgrid Operating Agreement to govern the development, islanding, and transitional operation of microgrids.

## Microgrid Islanding Study

- Engineering and operational viability of the microgrid boundary
- Protection requirements for island mode
- Controls requirements
- Telemetry & cybersecurity
- Electrical system upgrades

## Microgrid Operating Agreement (MOA)

- Covers two phases: 1) project development, and 2) testing & operations.
- Applies relevant provisions of interconnection and service quality rules to ensure operational coordination.
- Includes operating protocols of the Distribution Provider to ensure operational coordination for public safety and overall system operation.

# Multi-Property Multi-Customer Tariff

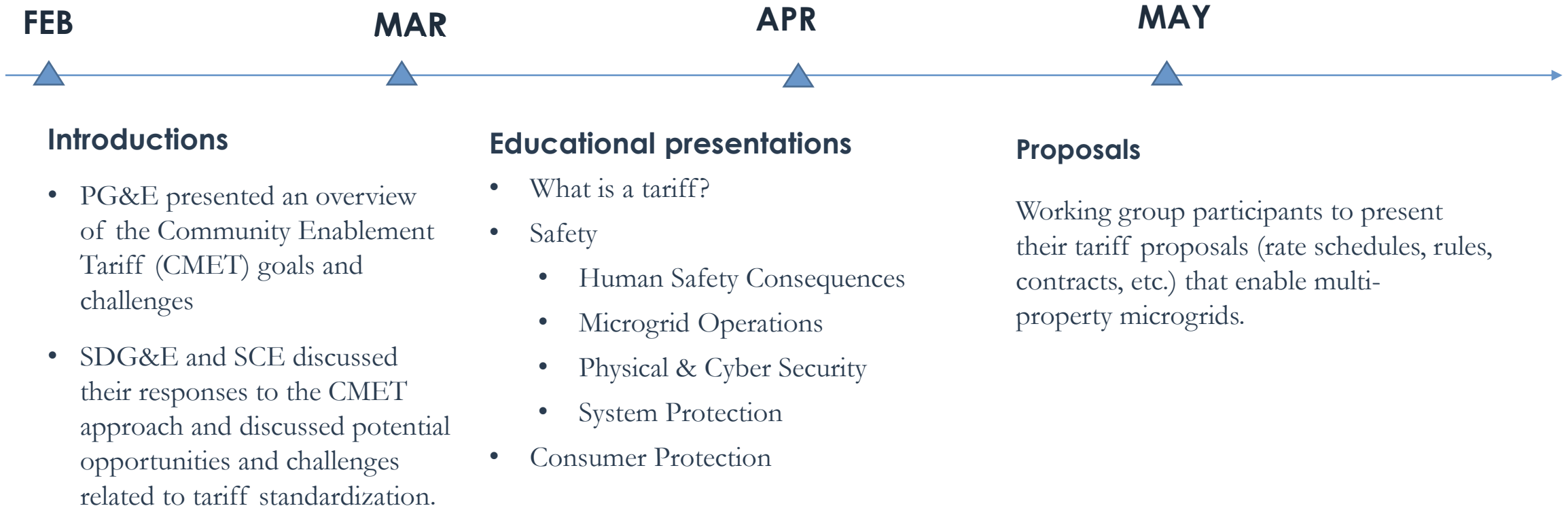


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# Working Group (Informal Process)

Goal: Foster a shared understanding of how microgrids could interact with public interest



# Discussion Prompt and Questions

The questions and discussion prompts aim to provide draft guidance on the various elements that merit consideration when developing a tariff proposal. Categories:

- Project Characteristics
- Application and Study Process
- Ownership and Operations
- Operational Security and Safety
- Rules and Regulations
- Consumer Protection
- Finances and Compensation
- Change Management

**LINK:** [https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/energy-division/documents/resiliency-and-microgrids/resiliency-and-microgrids-events-and-materials/20210205\\_multi-propertytariff-discussion\\_prompts\\_questions.pdf](https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/energy-division/documents/resiliency-and-microgrids/resiliency-and-microgrids-events-and-materials/20210205_multi-propertytariff-discussion_prompts_questions.pdf)

# Proceeding Schedule (Formal Process)

Action	Dates
<b>ALJ Ruling, Draft Multi-Property Tariff Guiding Principles</b>	November 30, 2021
<b>Opening Comments on Multi-Property Tariff Guiding Principles, filed and served</b>	December 8, 2021
<b>Reply Comments on Multi-Property Tariff Guiding Principles, filed and served</b>	December 17, 2021
<b>ALJ Ruling, Giving Guidance to Parties to Submit Multi-Property Tariff Proposals</b>	January 10, 2022
<b>Opening Comments and Proposals, filed and served (Multi-Property Tariff)</b>	February 14, 2022
<b>Public Workshop: Presentation on Multi-Property Tariff Proposals from Stakeholders</b>	Late March
<b>Reply Comments to Proposals, filed and served (Multi-Property Tariff)</b>	April 8, 2022
<b>ALJ Ruling with Staff Proposal, Multi-Property released</b>	May-22
<b>Energy Division Workshop on Multi-Property Tariff</b>	Jun-22
<b>Opening Comments on Staff Proposal, filed and served (Multi-Property Tariff)</b>	Jul-22
<b>Reply Comments on Staff Proposal, filed and served (Multi-Property Tariff)</b>	Jul-22
<b>Proposed decision</b>	Released in accordance with the Rules of Practice and Procedure

# Scoping Memo and Ruling

In August 2021, the Commission determine the next step to take for facilitating the commercialization of microgrids is to develop a microgrid multi-property tariff.

Issues to be determined, examples:

- What **guiding principles** should the Commission adopt?
- What program elements or **specific features** should the Commission include in a new tariff?
- To protect the public interest, what information should a new tariff include? For example, a description of the roles and responsibilities of participating entities, configuration and technology eligibility, contractual obligations to ensure operational security and safety.
- What **terms and conditions** should the tariff include?
- What additional or enhanced consumer protections for **customers taking service** under the new tariff? What additional or enhanced consumer protections for **ratepayers who are not participating** should be adopted?

# Behind the Meter Tariff



California Public  
Utilities Commission

# Commission Order

The Commission authorized the utilities to create a behind-the-meter microgrid tariff

This new tariff:

- Creates regulatory identification in the utilities' tariff books;
- Establishes a new, statutorily defined entity (a microgrid) pursuant to SB 1339.
- Makes terms of existing tariffs available to combinations of resources that meet California's statutory definition of a microgrid.
- Does not change any compensation that would otherwise be available to individual resources.

# Tariff Applicability

Limiting applicability to net energy metering (NEM)-eligible resources, while constraining the use of nonrenewable generation for backup power, may facilitate rapid implementation of a simple microgrid tariff as a foundational step, and is consistent with the state's goal of eliminating greenhouse gas emissions.

Eligibility under the new tariff:

- A microgrid project may consist of multiple components of different technologies and fuels.
- Only the portions of the project using NEM-eligible technology are eligible to take service under the microgrids tariff.
  - Net Energy Metering resources are eligible;
  - Storage resources allowed under NEM are eligible;
  - Non-renewable fueled generation resources are ineligible;

# Open Policy Issues

Some Parties sought to eliminate costs -- potentially shifting them to non-participating customers. A non-participating customer is the average ratepayer, small business, or medium-large commercial customer that is not receiving any microgrid service or benefit.

Potential cost bypass categories:

- (1) Distribution system costs;
- (2) Wildfire mitigation expenditures;
- (3) Catastrophic wildfire costs;
- (4) Transmission revenue requirements;
- (5) Net above-market generation costs that are included in the Cost Allocation Mechanism and Power Cost Indifference Adjustment; and
- (6) Public purpose program costs collected through non-bypassable charges.



# Working Group Next Steps

With the Working Group, parties will have another venue to pursue prudent and equitable cost allocation, guided by the legislative prerogative to prevent cost shifting and while preserving bundled customer indifference for new market developments.

- (1) Whether to provide compensation to energy exports generated by nonrenewable resources in a microgrid that takes service under the new microgrids tariff;
- (2) What a prudent level of compensation to nonrenewable exports should be, if any;
- (3) How any interrelated impacts to the wholesale distribution access tariff should be resolved; and
- (4) How to ensure that the use of nonrenewable resources in microgrids, if any, is consistent with other state law and policies.

For more information:

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# QUESTIONS & ANSWERS



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