

Microgrid Services Tariff Working Groups Status Update

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Background

Date	Action	Comments
November 14, 2019	PUC Status Update	<ul style="list-style-type: none"> • Customer / Hybrid MG Definitions • Confirmed focus of Order
November 21, 2019	MST Working Group Meeting	<ul style="list-style-type: none"> • Guidance on Resiliency • Focus on Customer MGs
December 3, 2019	MST Working Group Meeting	<ul style="list-style-type: none"> • Confirmed MG Definitions • Puerto Rico Update • Hybrid Microgrid Discussion • Proposed Hybrid Concept • WG Leads to provide draft documents for WG review
December 13, 2019	Drafts sent for review	<ul style="list-style-type: none"> • Draft Microgrid Tariff • Revisions to Rule 14H • Revisions to Rule 24 (CGS Plus)

11/14/19 PUC Status Update - Feedback

◆ PUC Feedback

◆ Customer Microgrids

- ◆ Consider whether a tariff is needed for Customer Microgrids
- ◆ More clarity needed on Synchronizing Microgrids

◆ Hybrid Microgrids

- ◆ WG needs to prioritize the development of the Hybrid MST
 - ◆ Focus of Act 200 was to facilitate Hybrid Microgrids
 - ◆ Development of a Hybrid MST will facilitate development
- ◆ Confirm Hawaii examples of Hybrid Microgrids

◆ WG Member Questions

- ◆ Are there Tariff/Materials/Insights available from the Walter Reed Hospital MG?
- ◆ How do you determine whether the MG is a utility or hybrid MG when joint development is involved?

Company Proposed Hybrid Microgrid Tariff Concept

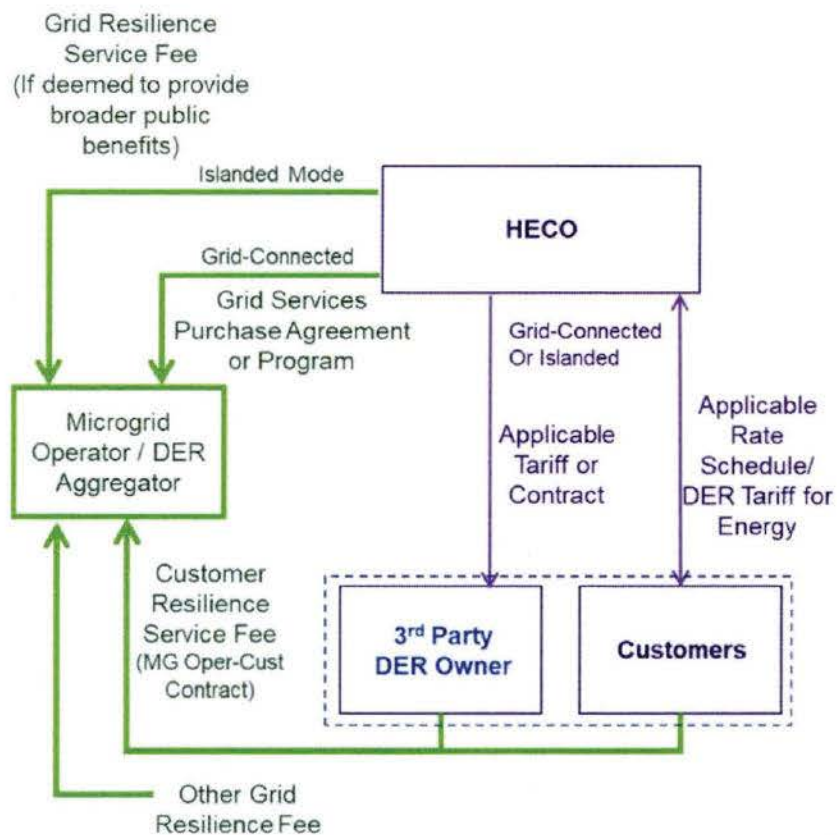
- ◆ Employ simplifying approach to expedite development & implementation of Hybrid MGS Tariff
 - ◆ Based on WG member suggestion from experience in other states
 - ◆ Enables hybrid microgrids to develop in Hawaii – WG suggested a focus on Hawaii specific opportunities recognizing that Hawaii Hybrid MG opportunities may be different than mainland
 - ◆ Limited industry experience with Hybrid Microgrids (only 2 examples identified by WG in development – simple hybrid microgrids in NY & CA)
- ◆ Proposed approach reflects feedback to focus on emergency situations and recognizes that emergency conditions are likely to be relatively rare and short in duration
- ◆ Within this context, the proposed approach simplifies the transactional relationships for all parties (i.e., customers MG developers/operators).
 - ◆ Existing DER tariffs and programs are in effect in normal and emergency (islanded) modes – simplifies the customer experience and minimizes the back-end accounting and settlement costs
 - ◆ The MG operator that may also be a DER aggregator during normal conditions continues any grid services provided during emergency conditions as needed
 - ◆ Allows MG Operator to provide resilience service relationship directly with Hybrid MG Customers independent of HECO/PUC
 - ◆ Enables opportunity for MG operator to provide HECO grid resilience service for if broad public benefit is provided
- ◆ Proposed approach avoids more complex issues that have little hybrid MG precedence in the industry, for example retail wheeling, regulatory issues associated with the microgrid operator being deemed a public utility, and grid operational responsibilities during emergency conditions.

Company Proposed Hybrid Microgrid Tariff Concept

Diagram illustrates financial transactions between parties during normal and emergency conditions

Roles & Responsibilities

- **Microgrid Operator:**
 - Provides any aggregated contracted/ programmatic grid services to HECO (incl. energy)
 - Provides grid resilience service, if applicable
- **Customer:**
 - Contracts with MG Operator to allow their DER to be used for grid services/ Hybrid MG formation and operation
 - Contracts with MG operator for resilience services
- **Independent DER Owner (may also be the MG Operator):**
 - Provides any contracted/ programmatic grid services to HECO (incl. energy under CBRE)
 - Contracts with MG Operator to allow their DER to be used for grid services/ Hybrid MG formation and operation
- **Hawaiian Electric:**
 - Responsible for T&D grid operations, repair and maintenance during normal and emergency conditions
 - Provides tariff services to customers during normal and emergency conditions
 - Selling and buying any tariff based energy under existing applicable tariffs
 - Providing grid delivery services and customer services as part of existing tariffs



Draft Tariff Comments / Guidance Requested

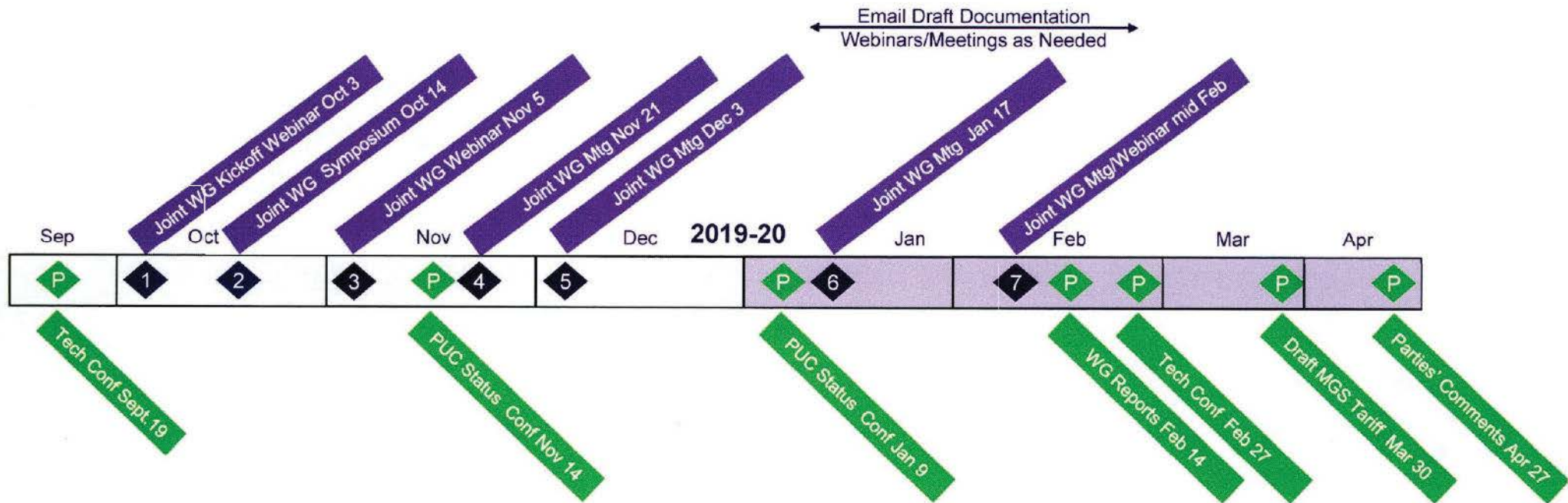
- ◆ Received Comments from 3 WG Members
 - ◆ Comments from WG member:
 - ◆ Ability to arbitrage between different sources
 - ◆ Allow Non-Renewable Energy in Grid-Connected Mode
 - ◆ Customers within the MG do not need to have an account with the utility
 - ◆ Is a MG serving an electrically bounded area a Public Utility?
 - ◆ Guidance Requested
 - ◆ Should the WG address compensation (other than established tariffs) during grid-connected mode beyond the WG's focus to enable MGs that can disconnect from the grid to operate in island mode during emergency events or grid outages?
 - ◆ Are retail energy sales (competitive energy services over the grid) to HECO's retail customers during **normal conditions** part of the scope of the MGS Tariff? Is it more appropriate and can this issue be addressed more fully in a separate proceeding?
 - ◆ Should MGs operating in grid-connected mode support RPS? If not, who is responsible for RPS compliance for this portion?
 - ◆ Is it acceptable to consider more complex issues involving "Mini-grid" Hybrid MGs, such as establishing a PCC on the primary distribution system, customer opt-out, and retail wheeling operational coordination, regulatory, and consumer protection issues, specific terms and pricing during emergency conditions in a later phase as those development opportunities emerge in the appropriate proceedings?
 - ◆ Other comments received to be discussed at the next WG meeting

Parking Lot Items

- ◆ Change of ownership of Microgrid
- ◆ Standby Charges or Exit Fees
- ◆ Customer protection-related considerations
- ◆ Microgrid/IGP procurement considerations
- ◆ Considerations of gaming between utility-owned and 3rd-party MGs
- ◆ Army/Military MG issues such as WG will consider nested microgrids, if appropriate
- ◆ Interactions with other dockets
 - ◆ DER Tariff/Programs
 - ◆ IGP Resiliency
- ◆ Consideration of societal, environmental value
- ◆ Development of PPA model for hybrid MGs
- ◆ Other types of microgrids that don't fit Act 200 definition
- ◆ Gap in tariff for customers greater than 100kW participation & compensation in non-normal, non-island scenarios. Eg, SIA
- ◆ Harmonize compensation with other grid service mechanisms
 - ◆ Expanded functionality from MG service and whether should be included in MST.

Timeline for MGS Tariff WGs

Adjust as needed based on stakeholders feedback & co-chairs' direction



Summary

◆ Agreements/Progress

- ◆ 5 WG Meetings Held
- ◆ Website: <https://www.hawaiianelectric.com/about-us/our-vision-and-commitment/resilience/microgrid-services-tariff>
- ◆ Draft MG Tariff, Rule 14H Revisions, Rule 24 Changes sent to WG for review
- ◆ Upcoming meeting Jan 17 to go through comments on the drafts

◆ WG Disagreements

- ◆ Alternate Hybrid Tariff Concept will be presented by other WG member(s)
- ◆ Whether compensation or retail competition should be allowed during grid-connected mode
- ◆ No proposed Hawaii Hybrid MG project