

Microgrid Services Tariff Phase 2: Status Conference

Docket 2018-0163

July 28, 2022



**Hawaiian Electric
Maui Electric
Hawai'i Electric Light**

Agenda

1. Act 200 Original Intent
2. Working Group (WG) Progress
 - ◆ Meeting Recap
 - ◆ Objectives
 - ◆ Key Learnings
3. Outstanding Questions
4. Areas of Consensus
5. Preliminary Recommendations
6. Updated Work Plan

Act 200 Original Intent

- ◆ “The legislature finds that Hawaii's residents and businesses are vulnerable to **disruptions** in the islands' energy systems **caused by extreme weather events** or other disasters.”
- ◆ “...the legislature finds that **microgrids can isolate themselves** from the larger electricity grid **in a time of emergency...**”
- ◆ “The legislature believes that the use of microgrids would **build energy resiliency into our communities**, thereby increasing public safety and security.”

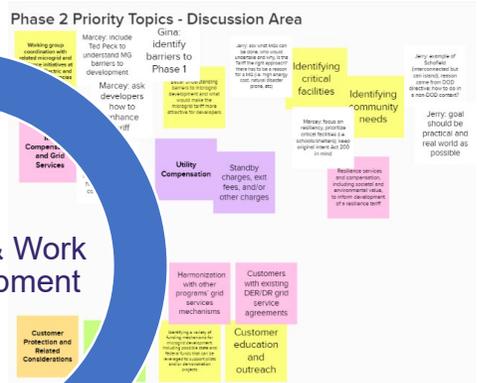


Hurricane Maria, Puerto Rico (September 2017)



Tropical Storm Darby, Hawaii Island (July 2022)

Working Group Progress – Meeting Recap



Meeting #1 – April 29, 2022

- Determined WG members (Hawaiian Electric, Consumer Advocate, Ulupono, and Commission staff)
 - DERC, Microgrid Resources, and Energy Island not participating in meetings
- Discussed WG objectives and prioritized Phase 2 Priority Issues for future meetings

Meeting #2 – May 17, 2022

- Finalized WG objectives and ground rules
- Guest speakers from Holu Hou & Ameresco provided developer perspective on development barriers

Meeting #3 – June 16, 2022

- Guest speaker from DOE discussed how resiliency is viewed and compensated across the country from a utility planning perspective
- Guest speakers from NREL & Hawaiian Electric informed how ETIPP is addressing community needs and customer education/outreach

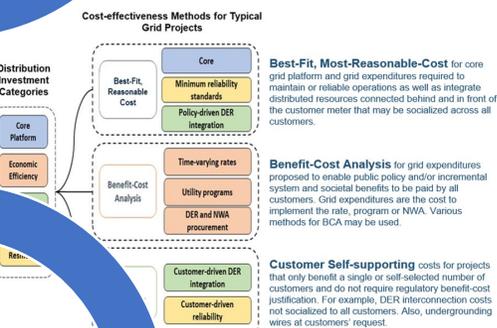
Meeting #4 – July 12, 2022

- Discussed Priority Issues table by MG type to determine remaining gaps based on PUC guidance letter received on June 30
- Updated High Level Work Plan to focus on third party hybrid MG compensation

Framework & Work Plan Development

Information Gathering & Initial Discussions

Commission Feedback & Work Plan Reprioritization



Meeting / Deadline	Date	Priority Issues
WG Mtg #8	Friday, August 5, 2022	<ul style="list-style-type: none"> • MG Compensation and Grid Services / Better understanding barriers to microgrid development and what would make the microgrid tariff more attractive for developers (cont.) – Guest Speakers from Enchanted Rock and NREL • Identifying critical facilities – HECO update on Resilience Application Filing / GIP Next Steps • Review draft consensus list and identify areas of disagreement
	Tuesday, August 30, 2022	<ul style="list-style-type: none"> • MG Compensation and Grid Services (cont.) • Utility Compensation/Standby charges, exit fees, and/or other charges (cont.)
	Tuesday, September 20, 2022	<ul style="list-style-type: none"> • Review draft consensus list and identify areas of disagreement
	Tuesday, October 11, 2022	<ul style="list-style-type: none"> • Discuss how to draft report and tariff revisions
Reference	Thursday, October 27, 2022	
WG Mtg #9	Tuesday, November 8, 2022	<ul style="list-style-type: none"> • Finalize report and tariff revisions
Parties to file Phase 2 WG Report	Wednesday, November 23, 2022	
Technical Conference	Thursday, December 8, 2022	
HECO to file Revised Draft MST Tariff, Rule 14h revisions	January 6, 2023	
Parties to file comments to Revised Draft MST Tariff, Rule 14h revisions	February 6, 2023	

Working Group Progress - Objectives

PUC Phase 2 Objectives:

1. Continue development of the Tariff
 - ❖ Promote self-sufficiency and resiliency among microgrid project operators
 - ❖ Streamline MST
2. Enhance Tariff to support broader use of microgrids in non-emergency situations
 - ❖ At minimum, enable voluntary islanding
3. Further explore opportunities to support resilience through microgrid development
 - ❖ Encourage development of microgrids that can provide power to remote communities and critical facilities such as schools, shelters, and hospitals
4. Identify grid services that can be provided by microgrids
 - ❖ Explore ways related exchanges between the utilities and microgrid operators could happen

Working Group Objectives:

1. Coordinate and align with other Dockets to leverage resources and streamline efforts
2. Focus on resiliency
 - ❖ Microgrids and/or other tools/programs
 - ❖ “Low-hanging” fruit, with such considerations as Act 200 goals, practical implementation, “real-world” goals, technical, costs, etc.
3. Understand how the tariff could support microgrid operations in non-emergency situations
 - ❖ Taking existing microgrid operations into consideration
4. Keep costs to all customers in mind (cost equity)
 - ❖ Compensation (e.g., rates, standby rates, exit fees, etc.)
5. Encourage development of grid services

Working Group Progress – Key Learnings

Priority Issue	Key Learnings	Guest Speaker(s)
<p><i>e. iv. Better understanding barriers to microgrid development and what would make the microgrid tariff more attractive for developers</i></p>	<ul style="list-style-type: none"> Barriers include C&C permitting process, supply chain issues, overall project economics, and rate design (e.g., more level demand charges to customer microgrids) Barriers did not include interconnection or tariff improvements 	<p>Ted Peck, Holu Hou Aiden Coyle, Ameresco</p>
<p><i>a. iii. Resilience services and compensation, including societal and environmental value, to inform development of a resilience tariff</i></p> <p><i>e. ii. Identifying a variety of funding mechanisms for microgrid development. Including possible state and federal funds that can be leveraged to support pilots and/or demonstration projects</i></p>	<ul style="list-style-type: none"> A “technology-neutral” perspective may not include a MG to get to the same resiliency objective (one size does not fit all) MG projects will likely use a “best-fit, most-reasonable-cost” cost-effectiveness method Customer funds Ratepayer funds (whether the MG provides public benefits) Infrastructure Investment and Jobs Act (IIJA) federal funding available allocated to states to support resilience investments 	<p>Joe Paladino, Office of Electricity US Department of Energy</p>
<p><i>e. iii. Identifying community needs</i></p> <p><i>e. iv. Customer education and outreach</i></p>	<ul style="list-style-type: none"> ETIPP final report due in December 2022, will include a map of potential sites for hybrid microgrids on Oahu under 3MW and community outreach with HNEI Map inputs include existing DER, supporting infrastructure, as well as area vulnerability, criticality, and societal impact 	<p>Katy Waechter, NREL & Ken Aramaki, Hawaiian Electric</p>

Outstanding Questions

Phase 2 Priority Issue	Questions
a. Microgrid Compensation and Grid Services	<ul style="list-style-type: none"> • Who should get compensation and the factors to consider. • Aside from resilience service, are there any energy and grid services not already available to MGs through PPA, tariff or program?
c. Customer Protection and Related Considerations	<p>For Hybrid MGs that may island voluntarily:</p> <ul style="list-style-type: none"> • What protections need to be put in place for MG customers if 100% of load not met during blue-sky conditions (MGs typically are not designed for 100% of load, or long duration if renewable energy based)? • What are the benefits of voluntary islanding for all customers? • What compensation needs to be put in place to mitigate subsidization by non-participating customers?
e. ii. Identifying a variety of funding mechanisms for microgrid development, including possible state and federal funds that can be leveraged to support pilots and/or demonstration projects	<ul style="list-style-type: none"> • State access to IJJA funding potential for hybrid MG, what is the potential? Also, DOE’s Loan Program Office funding potential. • How much funding would be needed to support Hawaii’s community resilience goals (how many projects)? • Should there be a focus on disadvantaged and vulnerable communities at risk to address equity issues? • How to address preliminary engineering, implementation costs and ongoing operational costs for a third party owned & operated Hybrid MG?
e. v. Customer education and outreach	<ul style="list-style-type: none"> • What types of Customers are interested in Customer MGs or Hybrid MGs?
Overall	<ul style="list-style-type: none"> • What are the “low-hanging fruit” that can result in a tangible Hybrid MG project to help critical infrastructure and vulnerable communities as soon as possible?

Areas of Consensus

- ◆ After discussing the Phase 2 Priority Issues in detail, Hawaiian Electric, Consumer Advocate, and Ulupono have agreed that in order to fully understand how to encourage MG development in a **practical and efficient manner to provide immediate value to the Commission**, the Working Group should:
 1. Use **real world examples** to delineate **development barriers, project benefits/revenue opportunities, and total life-cycle cost considerations** (particularly for hybrid microgrid structures) to identify gaps and further discussions on **compensation, incentives, and potential federal and state funding sources**;
 2. Then determine the best regulatory framework to address potential changes to the MST, which may be best served for example, through a **broader hybrid microgrid rule** and a complementary tariff associated with a potential resilience service and any incentive program, or PPA structure.

Preliminary Recommendations

- ◆ Hawaiian Electric, Consumer Advocate, and Ulupono propose to use the following **case studies to answer open fundamental and Phase 2 Priority Issues** for successful implementation of the MST:
 - ◆ Third Party Independently Developed & Operated Hybrid Microgrid: **Calistoga Community Microgrid**
 - ◆ Northern California town (~2,000 PG&E customers) with high wildfire risk
 - ◆ Feasibility study completed by Clean Coalition and presented to City of Calistoga in 2019
 - ◆ Utility Initiated Need & Utility Operated Hybrid Microgrid employing a third party contracted solution: **North Kohala Microgrid¹**
 - ◆ Proposed project to improve reliability and resilience for North Kohala (~2,000 HELCO customers)
 - ◆ Feasibility study completed in 2019 and filed in Docket No. 2022-0012 in June 2022

¹Case study would be based on a hypothetical development of a Microgrid for North Kohala based on Hawaiian Electric's pending North Kohala Energy Storage RFP, but not meant to inform or otherwise in any way be related to that RFP

Updated Work Plan

Meeting / Deadline	Date	Priority Issues
WG Mtg #5	Aug 9, 2022	<ul style="list-style-type: none"> • MG Compensation and Grid Services / Better understanding barriers to microgrid development and what would make the microgrid tariff more attractive for developers (cont.) – Guest Speakers from Enchanted Rock and NELHA • Introduce Utility Hybrid MG Case Study: North Kohala Microgrid • Introduce Third Party Hybrid MG Case Study: Calistoga Community Microgrid • Review draft consensus list
WG Mtg #6	Aug 30, 2022	<ul style="list-style-type: none"> • MG Compensation and Grid Services (cont.) / Utility Compensation/Standby charges, exit fees, and/or other charges – Potential Guest Speakers from CPUC • Identifying a variety of funding mechanisms for microgrid development – Potential Guest Speaker from HSEO • Continue case study discussion on barriers and lifecycle project costs • Review draft consensus list and identify areas of disagreement
WG Mtg #7	Sep 20, 2022	<ul style="list-style-type: none"> • Identifying critical facilities – Potential HECO update on Resilience Application Filing / IGP RWG Next Steps • Discuss best regulatory framework and identify areas for tariff revisions • Review draft consensus list and identify areas of disagreement for final report
WG Mtg #8	Oct 11, 2022	<ul style="list-style-type: none"> • Review and discuss draft report and tariff revisions
Status Conference	Oct 27, 2022	
WG Mtg #9	Nov 8, 2022	<ul style="list-style-type: none"> • Finalize report and tariff revisions
Parties to file Phase 2 WG Report	Nov 23, 2022	
Technical Conference	Dec 8, 2022	

Mahalo / Appendix



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Phase 2 Priority Issues (Order No. 38293)

a. Microgrid Compensation and Grid Services

- i. Harmonization with other programs' grid services mechanisms
- ii. Customers with existing DER/DR grid service agreements
- iii. Resilience services and compensation, including societal and environmental value, to inform development of a resilience tariff

b. Utility Compensation

- i. Standby charges, exit fees, and/or other charges

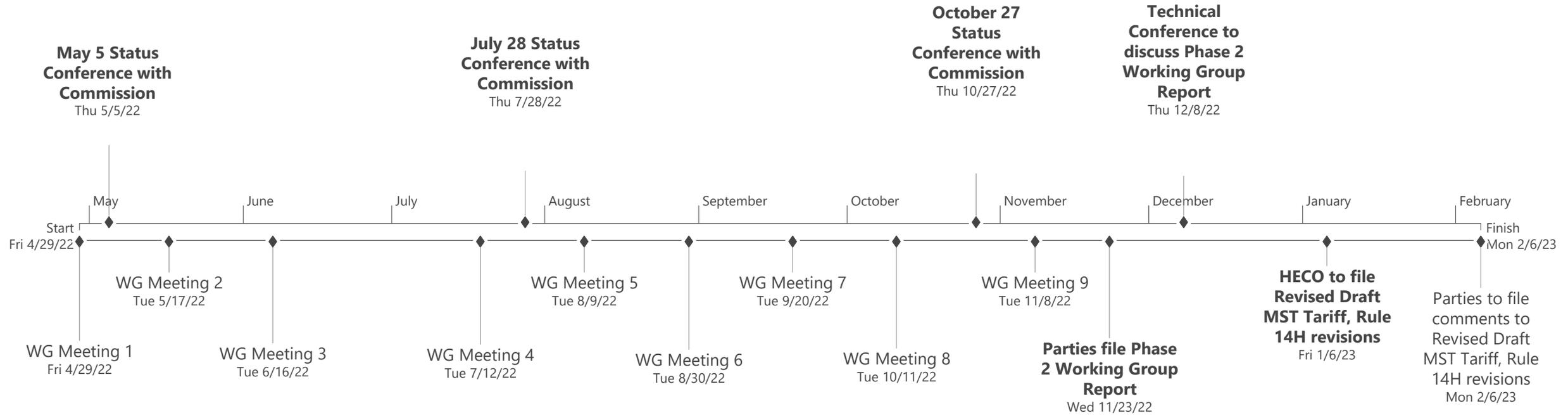
c. Customer Protection and Related Considerations

d. Interconnection

e. Working group coordination with related microgrid and resilience initiatives at Hawaiian Electric and government agencies

- i. Identifying critical facilities
- ii. Identifying a variety of funding mechanisms for microgrid development. Including possible state and federal funds that can be leveraged to support pilots and/or demonstration projects
- iii. Identifying community needs
- iv. Better understanding barriers to microgrid development (e.g., economic, project opportunities, technical expertise) and what would make the microgrid tariff more attractive for developers
- v. Customer education and outreach

Timeline



Working Group response to June 30 Guidance Letter

- ◆ Prioritized discussions by 1) Third-party operated Hybrid MGs (listed NELHA as example), 2) Utility operated Hybrid MGs, and 3) Customer MGs; emphasized discussions should cover all three types
- Drafted Priority Issues table to discuss with Working Group members and will reprioritize remaining discussions
- Reached out to NELHA to share microgrid project updates
- ◆ Reiterated expectations for discussion on Microgrid Compensation and continued outreach and participation of Microgrid Developers
- Reached out to Enchanted Rock to share Hybrid MG case studies and further understand barriers to development