



**Hawaiian
Electric**

Stakeholder Council

Pre-Read Material for March 9, 2021

Strategic Topics for SC Discussion

1. **Assumptions and Inputs:** Are the assumptions (and application of assumptions) being used by Hawaiian Electric appropriate, relevant and reasonable for the IGP and IGP planning process?
2. **Modeling and Forecasting:** How are Hawaiian Electric's modeling efforts affecting the scenarios, plan options, and ultimate action plans in the IGP?
3. **The Future of Electrification:** Is Hawaiian Electric reasonably planning for the future of Electrification (e.g., electric vehicles (EVs))?
4. **System Reliability and Resilience:** What are Hawaiian Electric's reliability and resilience needs, and how are these maintained as generators age and retire and intermittent renewable energy resources, and energy storage, increase?
5. **Strategic Alignment with the IGP:** How are, and should, the IGP and key foundational PUC Orders in Performance-Based Regulation (PBR), Distributed Energy Resource (DER) and other dockets be aligned and integrated?
6. **DER Effectiveness:** Are there ways to improve the effectiveness of DER resources?
7. **Community Outreach:** What improvements should the Utility and development partners consider to align themselves and their programs and projects with the affected communities and thereby seek to improve project success?

Topics #5 & 7 – March 9

Topics #1-4, 6 – Future Meetings

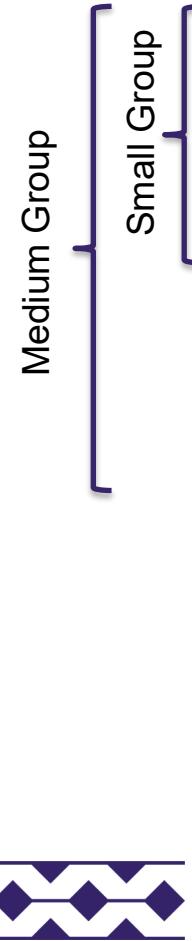


SC Groups' Primary Roles

	Small Group	Medium Group	Stakeholder Council
Purpose	Develops initial set of Proposed Topics; Improves effectiveness of SC Process	Provides feedback to Small Group's Proposals (including topics, process improvements, etc.)	Provide strategic input and feedback on IGP process development, activities and results, and aspects for improvement
Meeting Cadence	Meets 1-2 times per month; meets without Utility on an ad hoc basis	Communication primarily via email; meets on an ad hoc basis	Meets quarterly, or as identified by the Small/Medium Group
Topic Development	Propose strategic topics for future meetings		
Meeting Prep	Develops meeting materials (agendas, slides); decides on Strategic Topics	Reviews and provides feedback to meeting materials (prior to meeting)	Develops materials as needed
SC Meeting	Facilitate feedback and discussion from all SC members in the SC meetings Facilitate feedback or clarifications from SC members (between SC meetings)	Engage in strategic discussions in SC meetings; Provide recommendations and feedback to inform the IGP process; Identify ways to incorporate strategy discussions into IGP process; Participate in ad hoc discussions to provide additional feedback or clarify discussions in SC meetings	
Process Improvement	Helps refine, improve SC process	Suggest SC process improvement	



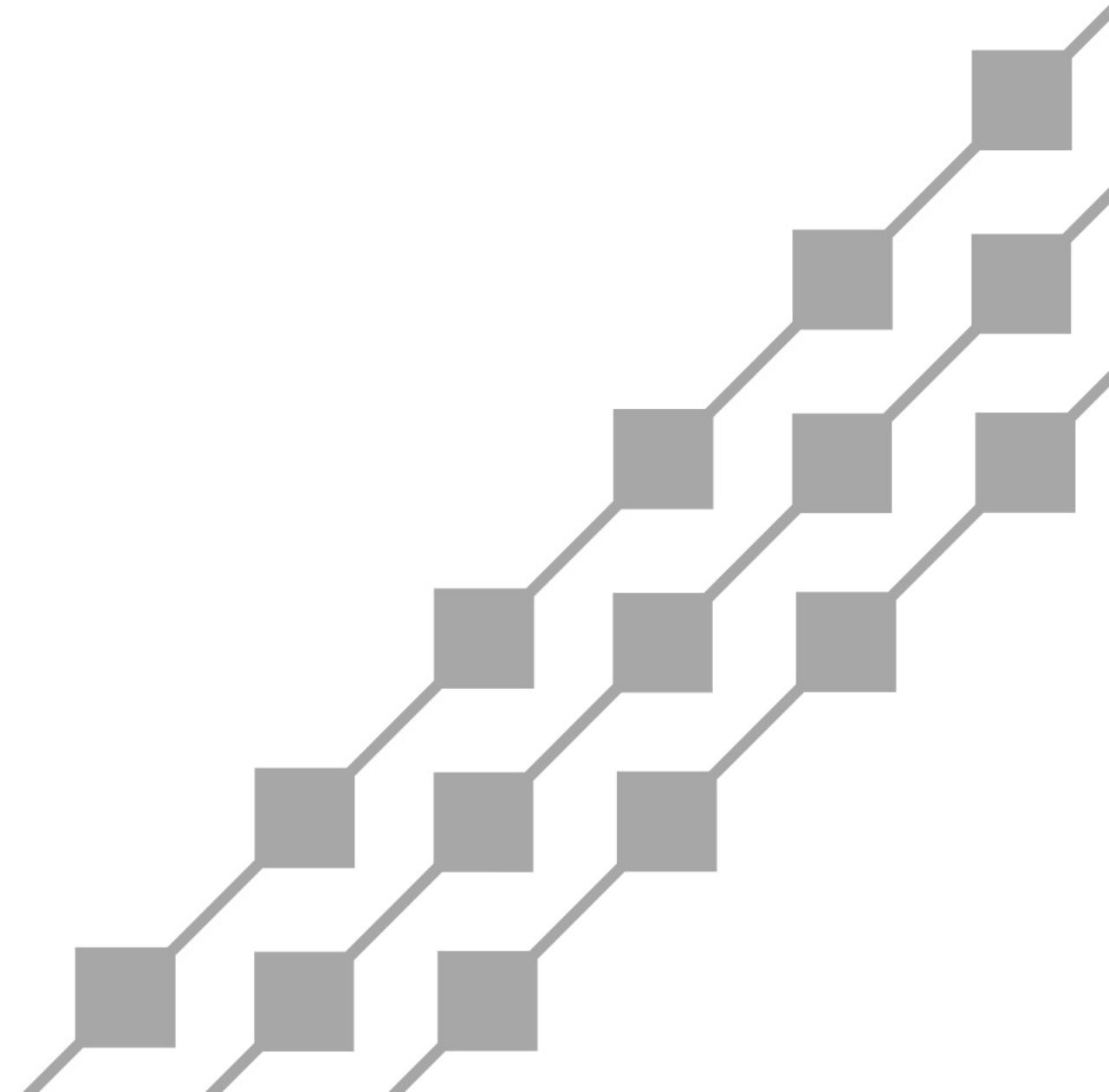
Stakeholder Council Groups



Stakeholder Council Member	Organization	SC Member	Medium Group	Small Group
Dean Nishina	Consumer Advocate	X	X	X
Gerald Sumida	Carlsmith Ball	X	X	X
Murray Clay	Ulupono Initiative	X	X	X
Rick Rocheleau	HNEI	X	X	X
Robert Harris	Sunrun	X	X	X
Noelani Kalipi	Progression Energy	X	X	X
Alex de Roode	Maui County Energy Office	X	X	
Audrey Newman	Sustainable Molokai	X	X	
Jacqui Hoover	Hawai'i Island Economic Development Board	X	X	
Robin Kaye	Friends of Lanai	X	X	
Scott Glenn	Hawaii State Energy Office	X	X	
Barry Usagawa	Honolulu Board of Water Supply	X		
Brian Kealoha	Hawaii Energy	X		
Chris DeBone	Hawai'i Energy Connection	X		
Dave Parsons	Public Utilities Commission	X		
Henry Curtis	Life of the Land	X		
Keith Yamanaka	Department of Defense	X		
Melissa Miyashiro	Blue Planet Foundation	X		
Merrian Borgeson	Natural Resources Defense Council	X		
Rocky Mould	Honolulu Resilience Office	X		
Yvette Maskrey	Honeywell International	X		

Topic Summaries

For Reference Only



1) Assumptions and Inputs: Are the assumptions (and application of assumptions) being used by Hawaiian Electric appropriate, relevant and reasonable for the IGP and IGP planning process?

1 of 2

- ◆ **Summary:** Hawaiian Electric has developed the IGP Inputs and Assumptions documents as part of its Solutions & Evaluation Optimization Working Group (SEOWG), which includes an exhaustive list of assumptions used for forecasting and resource modeling in the IGP process. Members of the Stakeholder Council, who are not part of the SEOWG or FAWG, may have specific questions or input for those documents, but also have expressed on a higher level questions about those multiple inputs/assumptions and the results of analyses and projections based on those inputs/assumptions. This leads to a consideration of what those inputs/assumptions are, how complete they are, and how they are being used in the IGP process, especially in the models being developed and used in the IGP planning process. An initial briefing on these issues may stimulate and encourage Stakeholder discussions at a policy, program level to provide directional guidance to the IGP team.



1) Assumptions and Inputs: Are the assumptions (and application of assumptions) being used by Hawaiian Electric appropriate, relevant and reasonable for the IGP and IGP planning process?

2 of 2

- ◆ **Other follow-on questions for discussion:**

- What are the high-level assumptions and inputs, including what are they based on, how are they projected into the 2045 time frame, how do they accommodate evolving forms of DER, and what other significant attributes are used that influence the assumptions made and inputs selected?
- How do these assumptions and inputs for the first IGP reflect the State's broader goals related to clean energy, energy efficiency and conservation, reliable energy, climate change, customer choice, reduction in electricity costs, electrification of transportation, and other state goals?
- For DER specifically, do the assumptions consider DER as a resource to be employed and integrated as part of a larger system for energy generation, DR programs and other arrangements to increase the use of DR in its different forms to supply and manage energy use, reliability and resilience?
- For various projections based on the assumptions/inputs, HECO proposes high and low scenarios. Should there also be a "most likely" or "probable" scenario that more realistically would be the basis for IGP planning and action plans?
- How have potential developments of microgrids, community-based renewable energy projects, and NWA projects been incorporated into the Utility's assumptions/inputs? What part do such projects play in the Utility's action plans?



2) Modeling and Forecasting: How are Hawaiian Electric's modeling efforts affecting the scenarios, plan options, and ultimate action plans in the IGP?

1 of 2

- ◆ **Summary:** Modeling and forecasting by Hawaiian Electric is a complex process, and involves licensed software with trained personnel to run such applications. As such, Hawaiian Electric's models have been looked at as a "black box". Stakeholders in other dockets, such as the DER Docket and the PSIP, have raised similar issues regarding transparency into the models, appropriateness of some of the modeling (e.g., limitations of models for planning purposes), accuracy and completeness of modeling results, and the use of such modeling results as the basis for programs and capital projects. Efforts to provide transparency into Hawaiian Electric's modeling have either involved extensive amounts of time by interested Parties (i.e., observe modeling) or have left Stakeholders unsatisfied. Similarly, these other concerns have not been addressed to the Stakeholders' satisfaction, and even the PUC has expressed concern on these matters.



2) Modeling and Forecasting: How are Hawaiian Electric's modeling efforts affecting the scenarios, plan options, and ultimate action plans in the IGP?

2 of 2

- ◆ Other follow-on questions for discussion:

- How can Hawaiian Electric ensure that Stakeholders understand (1) how Hawaiian Electric develops the scenarios and sensitivity analyses that it intends to use for developing its resource plans, (2) how the modeling results underlie certain outcomes, (3) how those modeling results are used to develop action plans, and (4) how modeling effectively incorporates changes over time as those plans are implemented, including changes due to unanticipated circumstances?
- What are the top 5 inputs that significantly change the outcome of customer bill impacts or other specified outputs?
- What are the top 5 inputs that significantly change the outcome of action plans for increasing renewable energy and DER?
- How will the acceleration of RPS goals impact customer bills? If it tends to increase bills, what are the tradeoffs to such an increase in impacts?
- How and when will the Utility be able to bring about significant reductions in retail energy rates for its customers? What are the driving factors to bring about such retail rate reductions on a continuing, if not permanent, basis?
- What will be the impact of a change in the definition of RPS from (1) renewable energy as a percentage of net sales of electricity to (2) renewable energy as a percentage of all generated electricity (including DERs)?
- How can Hawaiian Electric improve transparency into its modeling?
- How do we tell the difference between grid upgrades needed just to handle higher levels of renewables vs. upgrades needed in the normal course of operations for grid modernization - to ensure that all upgrades are not attributed simply to adding more renewables?
- How should Hawaiian Electric approach the development of NWA alternatives and more effectively structure NWA procurements (e.g., following the Independent Observer's Report for the East Kapolei project)? What improvements can be made to the NWA procurement program?



3) The Future of Electrification: Is Hawaiian Electric reasonably planning for the future of Electrification?

- ◆ **Summary:** Electrification presumes the future increase of energy demand, how and when the generation of energy is increased to meet such demand over time, and plans to mitigate the resulting impacts are significant issues for the IGP to address. Electric vehicles will play a large part in this role, but there are other end-use applications that are transitioning toward electrification - within transportation, buildings, heavy and agricultural industries, and possibly more. How and when these changes will occur will impact the Utility's assessment of usage, generation and T&D resource adequacy, and impact to customers' electric bills.
- ◆ **Other follow-on questions for discussion:**
 - What are the assumptions/inputs regarding Electrification in key segments of the potential and actual users in the state?
 - What considerations should the Utility take into account in assessing, and planning for, the impact of Electrification on existing load forecasts?
 - What modeling and resulting plans are being developed to project the Electrification future and Hawaiian Electric's roles in accommodating those Electrification needs and opportunities?
 - How can and should Electrification be used to support, and benefit from other energy resources (e.g., DER)?



4) System Reliability and Resilience: What are Hawaiian Electric's reliability and resilience needs, and how are these maintained as generators age and retire and intermittent renewable energy resources, and energy storage, increase?

- ◆ **Summary:** Hawaiian Electric's aging generation fleet is no secret. As more intermittent renewable resources are added, thermal units continue to play an increasingly critical role in maintaining grid system reliability and resiliency. Hawaiian Electric continues to maintain, and do what is necessary, to prolong the life of its thermal units, but as the baseload capacity (i.e., MWs) of thermal units are replaced, minimum loads are being pushed further down, leaving the aging units to run less efficiently, and requiring them to run more flexibly, than originally designed. There is no other utility in the United States facing these issues, challenging the Utility to find ways to model these generation system changes and provide for substitute reliable generation capabilities.
- ◆ **Other follow-on questions for discussion:**
 - What are the current levels of reliability and resilience of Hawaiian Electric's generation units under normal circumstances? Under non-normal circumstances, such as extreme weather conditions (e.g., Category III-V hurricanes)?
 - What assumptions/inputs and projections is the Utility using to address how to deal with these issues, and what are the resulting medium-term and long-term plans that the Utility is, or should, be developing to deal with these contingencies?
 - How is the Integrated Resilience Planning being implemented? What kinds of plans should be the result of using this approach? How realistic are these plans?
 - Should microgrids, and mini-grids, be considered as part of Hawaiian Electric's resiliency strategy? If so, how should the Utility plan to involve private and public partners (including communities) in developing microgrids?



5) Strategic Alignment with the IGP: How are, and should, the IGP and key foundational PUC Orders in PBR, DER and other dockets be aligned and integrated?

- ◆ **Summary:** The Commission filed Order No. 37507 on December 23, 2020, providing a PBR Framework to govern Hawaiian Electric. Attributes of this framework key to IGP are the Multi-year Rate Period (“MRP”), Exceptional Project Recovery Mechanism (“EPRM”), Revenue Decoupling with Cost Trackers, Performance Incentive Mechanisms (“PIMs”), Shared Savings Mechanisms (“SSMs”), Pilot Process, and Earnings Savings Mechanism (“ESM”). These outcomes are predicated on the wants and needs of Hawaiian Electric customers, and will influence, if not drive, decision-making within the IGP process. The Stakeholder Council will be interested to understand changes to the framework or technical processes within IGP to ensure that the IGP is more closely align with the PBR Order as well as other ongoing Hawaiian Electric rules and programs and other PUC dockets (e.g., DER, grid modernization, microgrid services tariff, etc.).
- ◆ **Other follow-on questions for discussion:**
 - How are outcomes driven by other key PUC dockets (PBR, DER and others), including RFP dockets, currently being aligned with, and incorporated into, the IGP process? How can this alignment be improved on a continuing basis, especially as new dockets are instituted and new PUC decisions are issued?
 - What changes are being contemplated (if any) to the IGP, given the PBR Order? How does PBR support the execution of the IGP process and plan?
 - How will customer and public reactions to the implementation of PBR by Hawaiian Electric be collated and assessed? What mechanisms exist, or will be developed, to provide for such feedback? How will these results affect the IGP process?



6) DER Effectiveness: Are there ways to improve the effectiveness of DER resources?

- ◆ **Summary:** DER resources continue to increase in scale and function, increasing their delivery of increasingly diversified services to the grid. Given the future of Electrification, DERs will have an increasing role in managing local demand to mitigate upstream impacts to the grid as well as providing energy and possibly grid services to some extent.
- ◆ **Other follow-on questions for discussion:**
 - Using the discussion on assumptions, modeling, and Electrification as a base, what are the Utility's concepts for the roles and functions of DERs in the future? How is Hawaiian Electric planning to integrate these roles and functions into the Utility's generation and grid system resources, and to use this integration to expand customer choice?
 - How can the role of DER be effectively expanded to serve as a more effective resource for the grid system? How can the Utility better manage such DER as a resource in its own service to customers?
 - How can emerging technologies, functionalities, and opportunities be incorporated into integrated solutions to enhance the development of portfolios of resources that can be stimulated by the IGP process?



7) Community Outreach: What improvements should the Utility and development partners consider to align themselves and their programs and projects with the affected communities and thereby seek to improve project success?

- ◆ **Summary:** In general, developers of utility-scale renewable projects have recognized the critical need to engage with community leaders and members in the development of their projects. As more projects are implemented, land is becoming scarcer and continues to compete with other important uses and industries (e.g., agriculture). These projects have generally been located in areas where surrounding communities have objected to diversion of agricultural lands, the proximity of large utility-scale projects, noise, biological kills, etc., increasing the difficulties of undertaking such projects.
- ◆ **Other follow-on questions for discussion:**
 - What strategies and solutions can be employed to improve effective engagement with communities in proximity to a large-scale potential energy development?
 - How and when should the Utility engage with community members earlier in the process (i.e., to streamline the procurement and interconnection process)?
 - How should the Utility more effectively assist developers in community outreach efforts undertaken by developers?
 - What trade-offs should be considered when determining where to locate a large- or utility-scale energy project? How should the community be involved, if at all, in dealing with those trade-offs?





Mahalo

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planning/stakeholder-engagement/stakeholder-council](https://www.hawaiianelectric.com/clean-energy-hawaii/integrated-grid-planning/stakeholder-engagement/stakeholder-council)