Hawaiian Electric
Maui Electric
Hawai'i Electric Light

IGP Stakeholder Council (IGPSC) Meeting Summary Notes

February 20, 2019
Ka Waiwai, Moiliili

Agenda

Meeting Agenda	
Time	**Topic**
8:30am – 8:40am	Welcome
8:40am – 9:00am	Status: Stakeholder Council and Workgroups
9:00am – 10:00am	Activity: Resilience Part 1
10:00am – 10:15am**	**Break
10:15am – 11:15am	Activity: Resilience Part 2
11:15am – 11:45am	Feedback
11:45am – Noon	Next Steps and Closing

Participants

Below is the updated list of IGPSC members. Those present at the meeting, denoted with an asterisk:

Stakeholder	Name	Affiliation
HPUC	Dave Parsons	Chief of Policy & Research
Consumer Advocate	Dean Nishina	Executive Director, Division of Consumer Advocacy
DBEDT	Carilyn Shon*	Hawai'i State Energy Office, Energy Administrator
Office of State Planning	Leo Asuncion	Office of Planning
DOD	Keith Yamanaka	USAG-HI, Directorate of Public Works
Large CI&I Customer	Barry Usagawa	Board of Water Supply
Community Delegate (Hawaii)	Jacqui Hoover*	President of Hawai'i Leeward Planning Conference and Executive Director & COO of Hawai'i Island Economic Development Board (HIEDB)
Community Delegate (Maui)	Alex de Roode*	Founder and Lead Researcher for High Performance Energy Resilient Communities
Community Delegate (Moloka'i)	Barbara Haliniak	Owner, The Business Depot, Inc., and President, Moloka'i Island Foundation
Community Delegate (Lana'i)	Alberta DeJetley*	Publisher and Editor of Lana'i Today, Owner, Albert's Farm, member of Lana'i Chamber of Commerce

Community Delegate (O'ahu)	Pono Shim*	President & CEO at Oʻahu Economic Development Board
Local Gov't (Hawaii)	Ron Whitmore	County of Hawaiʻi Deputy Director, Dept. of R&D
Local Gov't (Maui)	To be determined	County of Maui Energy
Local Gov't (O'ahu)	Robert "Rocky" Mould*	County of Honolulu, Energy Program Manager, Office of Climate Change, Sustainability and Resiliency
Sustainability Advocate (Local)	Murray Clay	Ulupono Initiative
Sustainability Advocate (National)	Merrian Borgeson	Natural Resources Defense Council (NRDC)
Small Solar & Storage	Chris Debone*	DERC
Demand Response	Yvette Maskrey*	Honeywell
Energy Efficiency	Brian Kealoha*	Hawaii Energy
Electric Vehicles	Melissa Miyashiro*	Blue Planet
Environmental Advocate	Henry Curtis*	Life of the Land
IPP (utility-scale resource)	Gerald Sumida*	Carlsmith Ball LLP
Chair of TAP	Rick Rocheleau*	Hawaiʻi Natural Energy Institute (HNEI)

A. Workgroups (WG):

Workgroups continue to be formed and convened

- Standardized Contract WG will conduct its third meeting on February 22, 2019
- Distribution Planning and Grid Services WGs will conduct a joint meeting on February 27, 2019 to discuss the IGP Soft Launch
- Forecast Assumptions WG (FAWG) meeting to be held in March
- Technical Advisory Panel (TAP) summary notes will be made available to IGPSC members soon as possible
- Working to convene the Resilience WG; open to suggestions for membership
- In the process of updating the IGP website to include all WG summary notes and other related documents
- IGPSC members advised to contact WG leads from Hawaiian Electric regarding suggestions for WG members and any issues with timeliness or other concerns with WG activities and reports
- Suggested WG members who are unable to attend all meetings or fully participate in WG meetings should still be suggested to WG leads and may be included in distribution list to receive all documents and communications for the WG to participate to the greatest extent possible
- Will endeavor to utilize conference call or WebEx participation for WG members to increase participation opportunities

B. IGPSC Members' Role:

1. Member Engagement with Community- Objective to continue to get IGPSC members engaged in the IGPSC and develop a better understanding of their role, including the following:
   a. As sounding board for IGP process
   b. As a subject matter expert in their field
   c. As a connector between IGP team and opportunities in their industries and communities; or
   d. As a partner with our company in outreach opportunities

2. Member Engagement with Process- Encouraging members to work together with other groups in IGP process
   a. Part of process to help provide input & feedback, as well as educate & inform the process and community.
   b. IGPSC discussions are valuable in establishing strategies.
   c. Seeking feedback in setting parameters that the IGP needs to fulfill, trying to find the right balance between the competing interests in a transparent manner.

I. KEY DISCUSSON POINTS

- **Resiliency:** Definition of resiliency is elusive and depends on many factors, including your particular perspective. Part of the discussion and determination of who pays for what in preparation for dealing with hazards or emergency situations are key considerations for resilience with regard to the IGP process. Like many of the challenges in planning out the system, this will require a healthy discussion of appropriate tradeoff between achieving certain levels of resilience and the impact on customer bills, generation or distribution options, or flexibility, etc. Resilience is a location specific variable, even what defines resilience in utility service is different between and amongst communities. Cost to provide resilience service can be very different and how do you determine what is the "fair" basis to which you plan out amongst communities.

- **Discussion**: group discussion included shared thoughts on resiliency:

1. Plan:

a. 3 pillars:
   (1) Community Preparedness;
   (2) Critical Infrastructure/Government Preparedness; and
   (3) Critical Infrastructure Risk Reduction.

b. Process overview:
   (1) Impacts of Hazards;
   (2) Identify Community Vulnerabilities & Strengths;
   (3) Identify & Prioritize Critical Facilities;
   (4) Determine Resilience Requirements; and
   (5) Put it all together (IGP)

c. Approach: Address resiliency from a holistic perspective. More cost effective to assess communities first, then shore up certain aspects in the community that would reduce costs for critical infrastructure. Part of this process is as much understanding what you are starting with and where to make the right investments, so as not to have to spend billions of dollars on work that is not necessary or could be done somewhere else for less.

2. **Identification and Prioritization of Potential Hazards**- groups were asked to identify and prioritize hazards, as well as explain factors considered in their decision-making processes. The Groups were advised that this exercise was designed to start the thought process, not necessarily for a definitive answer.

   Groups were also encouraged to explore potential issues raised regarding the multiplier effect of hazards, i.e. the idea that multiple hazards may occur at one time versus trying to prioritize singular hazards in a vacuum; and a broader definition of what constitutes a hazard, including socio- disasters or hazards, e.g. on Hawaii island, if military training areas are shut down, such would negatively impact the island.

   a. Group 1 findings provided more of a high-level discussion of factors to consider in determining prioritization.

   Broadly: Resilience is dependent on relevance
   - Socio-economic
   - Uniqueness = Fuel supply
     Resource/source independent
     Equity issues that also highlight community civility/engagement
     Military communities differ from non-military

   Tactical: Weather-related Disasters/Hazards
   - Most obvious/tangible
   - Generally immediate response that highlights people & skills

   Fabric: what are the foundations
   - Identifying community leaders/hub

   b. Group 2 findings assessed the highest priority to be weather-related disasters followed by cybersecurity.

   1) Hurricanes rate among the highest concerns because they occur most frequently and have the potential to have the most widespread impact
   2) Tsunamis, sea level rise, flooding
   3) Earthquakes and fire
   4) Parallel track of human activity – cybersecurity

Group 2 considered the need to assess where impacts will likely happen and looked at linkages between the energy supply and what it is serving, which will help determine what critical services are prioritized. The group noted that without energy, after three days – the water will not be pumped, the sewage will not be pumped, gas stations will not work, the cranes at the harbors may not work, the machines that clears debris may not work because they will need fuel. Other factors taken into consideration included:

Socio-economic factors	Geopolitics – cyber
Supply chains (disruptions)	Extent & probability of individual hazards
Location specific	Vulnerability & threat assessment
Population centers	Energy source connection to critical services
Food-transportation-healthcare-water	Law & order – when systems break down for long enough periods it will be a major concern and not only in high density areas.
Length of time you can sustain critical services – who is getting the services	Who is getting grid services - need community input in all of this.
Cost of inaction – if we don't do something how much will it cost.	Risk analysis, assessment and management
Master planning for long-term resiliency strategies	Rolling blackouts
Value judgment for prioritization	Distribution/spread the suffering (value judgment that needs to be kept in mind)
Water-energy nexus	Master planning for long-term resilience strategy
Cost of inaction	

c. Group 3 findings:

1) Hurricanes
2) Economic inequality
3) Cyber-security
4) Sea level rise & storm surges tied with Heat (temperature) & vog

Factors considered by Group 3:

Affordability over long term/utility financial viability- Cyber security; Rain bombs; Post event debris; Multi-effects- look at updated state mitigation plan
Inequality and impact of socio-economics
Hurricanes, winds, tornados, water spouts
Heat/VOG- near term impact of weather-related events
Prioritization can be a vulnerability
Many hazards are place specific- i.e. dams, flood zones, volcano, Pali highway, ports/harbors
Sea level rise & storm surge, tsunamis, earthquakes, arctic freeze, lightning, wildfires

d. HMP Hazard Ranking Results:

Table 4.16-6. 2018 HMP Update Hazard Ranking Results

Hazard Rank	Hazard	Probability	Impact: Population	Impact: Assets/ Economy	Impact: Environmental Resources/ Cultural Assets	Category: Spatial Extent	Category: Warning Time	Category: Duration	Category: Adaptive Capacity	Category: Changing Future Conditions	Relative Risk Factor
High	Climate Change and Sea Level Rise	3	1	3	2	2	0	3	2	3	4.6
High	Hurricane	2	2	2	1	3	0	3	2	3	4.5
High	Tsunami	1	2	2	1	2	3	3	2	3	4.3
High	Earthquake	1	2	2	1	3	3	3	2	1	4.2
Medium	Volcanic (Lava flow; vog)	2	1	2	3	2	1	3	2	1	4.0
Medium	Wildfire	2	2	1	1	2	1	2	2	3	3.8
Medium	Landslide and Rockfall	2	1	1	3	2	3	3	2	3	3.8
Medium	Health Risks	1	3	0	0	3	3	3	2	0	3.6
Medium	Event-Based Flood	1	1	2	1	2	1	3	2	3	3.4
Medium	Chronic Coastal Flood	3	1	1	1	2	0	3	2	3	3.4
Medium	Drought	2	1	1	1	3	0	3	2	3	3.3
Medium	High Wind Storm	2	1	1	1	3	0	3	2	2	3.2
Low	Dam Failure	1	1	1	1	2	2	3	2	2	2.9
Low	Hazardous Materials	2	1	1	1	1	3	1	2	0	2.6

Note: Relative Risk Factor Scores - High: > 4.0; Medium: 3.0 to 4.0; Low < 3.0

3. **<u>Critical Facilities</u>**- groups were asked to identify and prioritize a list of ten (10) categories of critical facilities and include any comments on other considerations in their decision-making processes.

a. <u>Group 1 findings:</u>

1) Emergency facilities (Shelters)- Libraries, Schools, community colleges, Gymnasiums, recreation centers
2) Hotels
3) Parking lot structures
4) Harbors/Ports/Airports
5) Military Bases
6) Water/wastewater
7) Medical centers (including nursing homes)
8) Financial institutions
9) Fuel infrastructure and transportation (ability to evacuate and relocate)
10) Communications networks
11) Foodbanks and supply hubs

b. <u>Group 2 findings:</u>

1) Mass shelters/evacuation shelters
2) Hospitals/pharmacies
3) Airports
4) Ports/harbors
5) Communications (radio, ham cell towers, morse code, carrier pigeons, communications on wheels (cows) and drones)
6) Water
7) Wastewater
8) First responders stations

9) Fuel supply/distribution
10) Food supply/storage distribution
11) Roads

c. <u>Group 3 findings:</u>

1) Airports- connection to the outside world (pharmaceuticals, food, etc.)
2) Ports/harbors
3) Fueling infrastructure
4) Hospitals & managed care facilities
5) Schools (short-term shelters/long-term for parents to have somewhere safe for children)
6) First responders
7) Cell towers/communications
8) Water/wastewater
9) Distributed water trucks/tanks
10) Hard copy databook- SOP manuals
11) EOC (emergency operation centers)
12) Grocery stores/distribution centers
13) Hotels
14) Military bases
15) Translation services
16) Refuse stations- how to manage debris?
17) Jails/prisons/correctional facilities

<u>NOTE:</u> Critical nature of facilities may be categorized by:

- Time- Immediate, Later
- Hazard-based approach
- Population-based services
- Degree of concern- Life & limb v. other
- Distributional spread of services

d. <u>HMP findings</u>-

Facility Core Category	Total Number of Critical Facilities
Commercial Facilities	60
Communications	142
Emergency Services	149
Energy	91
Food & Agriculture	39
Government Facilities	103
Healthcare & Public Health	193
Mass Care Support Services	353
Transportation Services	61

II. **FEEDBACK:** Other topics that the Resilience WG should consider and general thoughts on resilience and approach for the Resilience WG were discussed. Emphasis was made on the fact that this is the beginning of the process, which includes seeking input and trying to work out these issues, which will be an ongoing effort. Objective is to improve the process as it progresses. Reminder that the intent of the discussion is not to come up with the ultimate answer initially, but to start the process, get everyone thinking.

A. **IGPSC group discussion:**

1. Community Approach: Resiliency is the ability to respond, need to ensure that we consider actions and solutions that encompass the whole state, taking into consideration the greater role that Oahu can and should play in outreach to neighboring islands.

2. Future Considerations: FEMA's approach is to give money back to rebuild what was destroyed or damaged. Resiliency goals need to include hardening what exists, but also considering what should exist in the future.

3. Assess Community Assets: As part of the discussion about any particular community's vulnerabilities & strengths, we should look at community assets to shoulder some resiliency needs. Looking at community resources, e.g. community center, water resources, etc., and conducting a proper assessment of vulnerabilities and building resilience in a community should come only after determining the resources that are there. Point in time in the emergency situation will determine which facilities are priorities/critical facilities to get resources.

4. Run, Hide, Fight- Lesson learned from Columbine attack, people are waiting to be rescued. Instead need to think more proactively, i.e. Run, Hide, Fight.

5. Silo v. Holistic approach- Whether resilience works as silo, or whether to interact with other entities doing similar work.

6. Batteries- We discuss the use of batteries, but don't talk about their disposal. With landfill issues we already have, this needs to be a consideration.

7. Cybersecurity- The issue of cybersecurity is critical, because it will impact all the critical and other facilities.

8. Education- Need to consider lessons learned from prior events, such as Hurricane Iniki, where people were wandering around after storm not knowing what to do, where to go or what they are doing. Need to educate the public

that they have to take responsibility for themselves, to have a basic supply of food, have a plan, and know how to communicate after disaster occurs.

9. Work with HIEMA other Government Agencies- Need to get together with other groups, because in an emergency we're all working on our different areas, but need to communicate and work together.

10. Too Broad- Because there are already other groups dealing with these or similar issues, if our topic is the IGP, while the discussion is good, is it biting off more than we can chew? When you look at resiliency and response, the military is the one organization that can effectively play a role in disaster. Is this too broad of a discussion for the IGP?

11. Power to Convene- Anybody can exercise the power to convene. Having broad conversation, that isn't only addressing IGP, but is dealing with broader idea of preparing Hawaii.

12. Utilizing Available Resources- Members in the community are already installing lithium ion batteries in residential systems, but incentive to use solar may be for other purposes, i.e. monetary savings. However, those batteries can be used for other purposes, to power refrigerators, other necessary machines/technologies, etc., after a disaster. Within the community, members can help themselves and others after a disaster, but currently not considering how to utilize for the greater good.

13. Parallel Efforts- IGPSC has done a lot focusing on disaster preparedness, disaster recovery, which is important and we need to keep doing that. However, parallel to that effort, we also need to be taking an adaptive resilience approach, thinking more medium- and long-term and how to change the systems that we know have vulnerabilities. While these are two different paths, we need to look at both—engaging community and stakeholder outreach, but also getting information from them, informing data points (two-way flow). Suggestion for WG to either divide itself or think of all of these things at the same time.

III. Next Steps/Action Items

- Tentatively, next meeting will be held on **May 8, 2019** in conjunction with the Technical Advisory Panel (TAP) Workgroup meeting
- IGPSC members will be provided updates and opportunity to review the work of all seven (7) WGs at IGPSC Meetings
- IGPSC members can direct questions to IGP@hawaiianelectric.com or reach out directly to Colton Ching or Lisa Giang.