Objectives

◆ Get to know each other
◆ Answer questions regarding participation in the IGP Stakeholder Council
◆ Explain the purpose and objectives of the IGP process
◆ Provide overview of the IGP process including stakeholder engagement
Agenda

- Welcome & Introductions (8:30am-9:30am)
- Stakeholder Council Charter (9:30pm -9:45am)
- Questions & Feedback (9:45am-10:15pm)
  **Break (10:15-10:30am)**
- IGP Context & Overview (10:30-11:00am)
- Questions & Feedback (11:00am-11:30pm)
  **Break (11:30-11:45am)**
- Next Steps (11:45am-12noon)
## Invited Stakeholder Council Members

<table>
<thead>
<tr>
<th>Stakeholder</th>
<th>Name</th>
<th>Affiliation</th>
</tr>
</thead>
<tbody>
<tr>
<td>HPUC</td>
<td>Dave Parsons</td>
<td>Chief of Policy &amp; Research</td>
</tr>
<tr>
<td>Consumer Advocate</td>
<td>Dean Nishina</td>
<td>Executive Director, Division of Consumer Advocacy</td>
</tr>
<tr>
<td>DBEDT</td>
<td>Carilyn Shon</td>
<td>Hawai‘i State Energy Office, Energy Administrator</td>
</tr>
<tr>
<td>Office of State Planning</td>
<td>Leo Asuncion</td>
<td>Director, Office of Planning</td>
</tr>
<tr>
<td>DOD</td>
<td>Keith Yamanaka</td>
<td>USAG-HI, Directorate of Public Works</td>
</tr>
<tr>
<td>Large CI&amp;I Customer</td>
<td>Barry Usagawa</td>
<td>Board of Water Supply</td>
</tr>
<tr>
<td>Community Delegate (Hawaii)</td>
<td>Jason Fujimoto</td>
<td>President &amp; CEO of HPM Building Supply</td>
</tr>
<tr>
<td>Community Delegate (Maui)</td>
<td>Alex de Roode</td>
<td>County of Maui Dept. of Water Supply</td>
</tr>
<tr>
<td>Community Delegate (Moloka‘i)</td>
<td>Barbara Haliniak</td>
<td>Owner, The Business Depot, Inc.</td>
</tr>
<tr>
<td>Community Delegate (Lana‘i)</td>
<td>Alberta DeJetley</td>
<td>Publisher and editor of Lana‘i Today newspaper</td>
</tr>
<tr>
<td>Community Delegate (O‘ahu)</td>
<td>Pono Shim</td>
<td>President &amp; CEO at O‘ahu Economic Development Board</td>
</tr>
</tbody>
</table>
Invited Stakeholder Council Members

<table>
<thead>
<tr>
<th>Stakeholder</th>
<th>Name</th>
<th>Affiliation</th>
</tr>
</thead>
<tbody>
<tr>
<td>12 Local Gov’t (Hawaii)</td>
<td>Ron Whitmore</td>
<td>County of Hawai’i Deputy Director, Dept. of R&amp;D</td>
</tr>
<tr>
<td>13 Local Gov’t (Maui)</td>
<td>Fred Redell</td>
<td>County of Maui Energy Commissioner</td>
</tr>
<tr>
<td>14 Local Gov’t (O’ahu)</td>
<td>Joshua Stanbro</td>
<td>County of Honolulu, Executive Director &amp; Chief Resilience Officer</td>
</tr>
<tr>
<td>15 Sustainability Advocate (Local)</td>
<td>Kyle Datta</td>
<td>Ulupono Initiative</td>
</tr>
<tr>
<td>16 Sustainability Advocate (National)</td>
<td>Merrian Borgeson</td>
<td>Natural Resources Defense Council (NRDC)</td>
</tr>
<tr>
<td>17 Small Solar</td>
<td>Leslie Cole-Brooks</td>
<td>DERC</td>
</tr>
<tr>
<td>18 Storage</td>
<td>Paul Karaffa</td>
<td>Sales Engineer, Fluence</td>
</tr>
<tr>
<td>19 Demand Response</td>
<td>Yvette Maskrey</td>
<td>Honeywell</td>
</tr>
<tr>
<td>20 Energy Efficiency</td>
<td>Brian Kealoha</td>
<td>Hawaii Energy</td>
</tr>
<tr>
<td>21 Electric Vehicles</td>
<td>Melissa Miyashiro</td>
<td>Blue Planet</td>
</tr>
<tr>
<td>22 Environmental Advocate</td>
<td>Henry Curtis</td>
<td>Life of the Land</td>
</tr>
<tr>
<td>23 IPP (utility-scale resource)</td>
<td>tbd</td>
<td>tbd</td>
</tr>
</tbody>
</table>
Stakeholder Council Charter
Stakeholder Council:

The IGP Stakeholder Council ("Council") represents our customers and other broad stakeholder interests in Hawai‘i. The Council is a key element of and one of several stakeholder groups in the overall stakeholder engagement process essential for IGP success.
Purpose:
The Council helps ensure alignment of Hawaiian Electric’s grid plans with customer and stakeholder interests and facilitates the development of broadly supportive action plans.

Objectives:
• Provide strategic input and feedback on IGP process development, activities and results, and aspects for improvement.
• Discuss priority issues that may benefit from a subject matter expert–based working group to address tactical and technical issues.
• Foster collegial, balanced discussion to achieve shared understanding of issues to address in IGP, planning results, and to build common ground through iterative discussion and feedback.
Responsibility

- Council members are expected to be **ambassadors** for their respective stakeholder communities representing their interests by providing input and disseminating information.

- Members must be willing to **commit** to in-person participation (online participation by limited exception) on the Council for a full 2-year IGP planning cycle.

- Members should be prepared to **contribute** to achieving the meeting goals by sharing ideas, asking questions, and contributing to discussions.

- Members should **respect** others’ thinking and **value** everyone’s contributions.

- Follow Chatham House Rule: *Participants are free to use the information received, but neither the identity nor the affiliation of the speaker(s), nor that of any other participant, may be revealed.*

  - Summary notes of meetings will be provided by facilitator and posted publicly.
Initial SC Meeting Schedule (proposed)

<table>
<thead>
<tr>
<th>Stakeholder Council</th>
<th>2018</th>
<th>2019</th>
<th>2020</th>
<th>2021</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Aug</td>
<td>Sep</td>
<td>Oct</td>
<td>Nov</td>
</tr>
<tr>
<td>Kick-off Meeting</td>
<td>Aug 30</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

~14 hours quarterly (i.e., in-person meeting, meeting preparations, stakeholder engagement, etc.)
Questions & Feedback
IGP Context & Overview
General Background
This map shows the generating facilities in our service area and the maximum potential power in megawatts (MW) they can produce.

Note: As of May 2018, PGV has been offline due to lava flow.
This map shows the generating facilities in our service area and the maximum potential power in megawatts (MW) they can produce.
Where Our Power Comes From

This map shows the generating facilities in our service area and the maximum potential power in megawatts (MW) they can produce.
On June 8, 2015, Gov. David Ige signed Act 97 into law, giving Hawai‘i the most ambitious clean energy goals in the country – requiring 100 percent of electricity sales to come from renewable resources by 2045.
In 2017, our Companies achieved 26.8 percent net electricity sales from renewable energy resources and are on track to meet our 2020 goal of 30%.
Power Supply Improvement Plan

- Considers multiple long-range pathways to inform development of specific near-term actions that the Hawaiian Electric Companies will take from 2017 through 2021 to accelerate the achievement of Hawaii’s 100 percent Renewable Portfolio Standard (RPS) by 2045

- Accepted by the PUC in July 2017

Renewable Energy Planning Principles

1. Renewable energy is the first option
2. The energy transformation must include everyone
3. Today’s decisions must not crowd out tomorrow’s breakthroughs
4. The power grid needs to be modernized
5. The lights have to stay on
6. Our plans must address climate change
7. There’s no perfect choice
### Attaining Hawai‘i’s 100% RPS Goal

(Half expected to come from DER)

#### 2017-2021 Renewable Energy and Demand Response Additions

<table>
<thead>
<tr>
<th>Category</th>
<th>Island 1</th>
<th>Island 2</th>
<th>Island 3</th>
<th>Island 4</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rooftop Solar</td>
<td>255 MW</td>
<td>30 MW</td>
<td>38 MW</td>
<td>0.7 MW</td>
<td>1.4 MW</td>
</tr>
<tr>
<td>Demand Response</td>
<td>89 MW</td>
<td>11 MW</td>
<td>15 MW</td>
<td>0.3 MW</td>
<td>0.3 MW</td>
</tr>
<tr>
<td>Grid-Scale Wind</td>
<td>64 MW</td>
<td>22 MW</td>
<td>62 MW</td>
<td>4 MW</td>
<td>5 MW</td>
</tr>
<tr>
<td>Grid-Scale PV</td>
<td>352 MW</td>
<td>1 MW</td>
<td>7 MW</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Feed-in-Tariff</td>
<td>24 MW</td>
<td>6 MW</td>
<td>1 MW</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**PSIP Assumes:**

- Control of future DG-PV
- Future Grid Scale projects are dispatchable
PSIP System Planning & Solution Sourcing Processes

Forecast & Other Planning Inputs

PSIP Near-term Action Plan and 2045 Long-Term Planning
Resource and T&D Needs, Value of Service

5-year Resource Solution Sourcing
Resource Procurement (Grid Scale, Aggregated DER/DR)
DER and DR Programs
Tariffs
Utility Resource Development

T&D Solution Sourcing
Targeted DER Programs
NWA Competitive Bid
Grid Modernization
Traditional Grid Solution estimate

Solution/Bid Evaluation
Grid Resources
Grid Services
NWA

Regulatory Approval
Seek PUC approval of related applications

Reference: Integrated Grid Planning Report, Figure 1, page 10
Integrated Grid Planning
Why was there a need to change from PSIP?

- PSIP was a significant advancement over prior planning processes in terms of:
  - Transparency & Stakeholder engagement
  - Use of best & leading practices
  - Consistent use of forecast assumptions

- We’re continuously looking for opportunities to improve:
  - Fully integrated resource, transmission and distribution planning
  - Use real prices instead of theoretical price/cost assumptions for resources
  - Incorporate project specific planning (i.e., location, size, type)
  - Encourage market innovation
  - Shorten the planning and procurement processes
What is Integrated Grid Planning (IGP)?

- **Integrated Grid Planning**
  - Integrates planning analysis for resources, transmission and distribution to ensure the net requirements for the system are transparently identified & optimized
  - Integrates market-sourced alternatives into the analysis instead of relying on theoretical price/cost assumptions
  - Integrates stakeholders’ input and feedback into the overall process

- **Results in better value for customers**

- **Creates greater market opportunities for developers & aggregators**

IGP Enables Convergent Outcomes
Discrete Objectives Converge Thru Unifying Planning & Solution Selection Process

- Affordability
- Resiliency
- Renewable Energy
- Distributed Energy Resources
- Electrification of Transportation
- Economic Development
- Other Policies

Inputs, Forecasts & Assumptions
**IGP & Solution Sourcing Process**

**SYSTEM NEEDS IDENTIFICATION**
Engineering analysis to determine optimal energy needs to meet policy goals and system reliability. Includes generation, transmission, and distribution needs.

**SOLUTION SOURCING**
Identification of least cost, best fit solution options to fulfill grid needs through the establishment of a marketplace through procurements, pricing, and programs.

**SOLUTION OPTIMIZATION**
Evaluation and optimization of resource and transmission and distribution solutions acquired through marketplace. Includes an optimized 5-year grid plan.

**COMMISSION REVIEW OF PLAN**
Seek commission approval of 5-year plan with discrete investments, programs, and pricing proposals.
IGP Process

Reference: Integrated Grid Planning Report, Figure 3, page 14
Stakeholder Engagement Model

Hawaiian Electric Companies IGP Process

Education & Information  
- Broad Public Engagement
- Stakeholder Council
- Technical Advisory Panel

Input & Feedback  
- Individual Stakeholder Engagement
- Working Groups

Reference: Integrated Grid Planning Report, Figure 4, page 16
Technical Advisory Panel

<table>
<thead>
<tr>
<th>Role</th>
<th>Name</th>
<th>Title</th>
<th>Organization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chair</td>
<td>Rick Rocheleau</td>
<td>Executive Director</td>
<td>Hawai‘i Natural Energy Institute</td>
</tr>
<tr>
<td>Member</td>
<td>Jeff Smith</td>
<td>Program Manager, Distribution Planning, Operations &amp; Studies</td>
<td>Electric Power Research Institute</td>
</tr>
<tr>
<td>Member</td>
<td>Elijah Pack</td>
<td>Manager, National Planning</td>
<td>Australian Energy Market Operator</td>
</tr>
<tr>
<td>Member</td>
<td>Julia Matevosjana</td>
<td>System Reliability Engineer</td>
<td>ERCOT</td>
</tr>
<tr>
<td>Member</td>
<td>Anderson Hoke</td>
<td>Senior Electrical Engineer</td>
<td>National Renewable Energy Laboratory</td>
</tr>
<tr>
<td>Member</td>
<td>Jeff Burke</td>
<td>Director, Resource Planning</td>
<td>Arizona Public Service</td>
</tr>
<tr>
<td>Participant</td>
<td>Lisa Giang</td>
<td>Manager, Advanced Planning</td>
<td>Hawaiian Electric</td>
</tr>
</tbody>
</table>

- Standing group with deep subject expertise convened to provide independent assessment of IGP planning process, methods and results (peer review)
- 2-year rotating chair (for each planning cycle), starting with HNEI
- Role: Independent reviewer to provide input & feedback – not decision making group
- Clearly defined charter to include purpose, roles and ground rules
Technical Advisory Panel

- Held Kick-off meeting on June 6, 2018

- Planning in-person meeting for Sept. 25-26. Draft topics for discussion:
  - Best practices (tools and methods)
  - Workplan
Hawaiian Electric Companies shall convene a public workshop by October 1, 2018 (Order No. 35569, page 25)
  – Scheduled for September 25, 2018

Public comments may be filed until October 15, 2018 (Order No. 35569, pages 25-26)

On or before December 14, 2018, the Hawaiian Electric Companies shall file an IGP Workplan providing additional details about the activities, timelines, and outcomes of the major components of the IGP process. (Order No. 35569, pages 27-28)

Questions & Feedback
Next Steps

- Individual outreach to Stakeholder Council members
- Next meeting October/November
  - Will look for date/time based on preferred day of the week and time of day
  - Discuss draft Workplan to be filed by December 14
  - Prioritize topics
  - Status of Engagement Groups

- Any follow-up questions
  - Email: IGP@hawaiianelectric.com
  - Colton Ching @ 543-7986 or Lisa Giang @ 543-7982
Mahalo!