Integrated Grid Planning

Stakeholder Council

Kick-off Meeting

August 30, 2018

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

	Stakeholder	Name	Affiliation
1	HPUC	Dave Parsons	Chief of Policy & Research
2	Consumer Advocate	Dean Nishina	Executive Director, Division of Consumer Advocacy
3	DBEDT	Carilyn Shon	Hawaiʻi State Energy Office, Energy Administrator
4	Office of State Planning	Leo Asuncion	Director, Office of Planning
5	DOD	Keith Yamanaka	USAG-HI, Directorate of Public Works
6	Large CI&I Customer	Barry Usagawa	Board of Water Supply
7	Community Delegate (Hawaii)	Jason Fujimoto	President & CEO of HPM Building Supply
8	Community Delegate (Maui)	Alex de Roode	County of Maui Dept. of Water Supply
9	Community Delegate (Molokaʻi)	Barbara Haliniak	Owner, The Business Depot, Inc.
10	Community Delegate (Lanaʻi)	Alberta DeJetley	Publisher and editor of Lanaʻi Today newspaper
11	Community Delegate (O'ahu)	Pono Shim	President & CEO at Oʻahu Economic Development Board

Invited Stakeholder Council Members

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

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.

Stakeholder Council Purpose & Objectives

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:

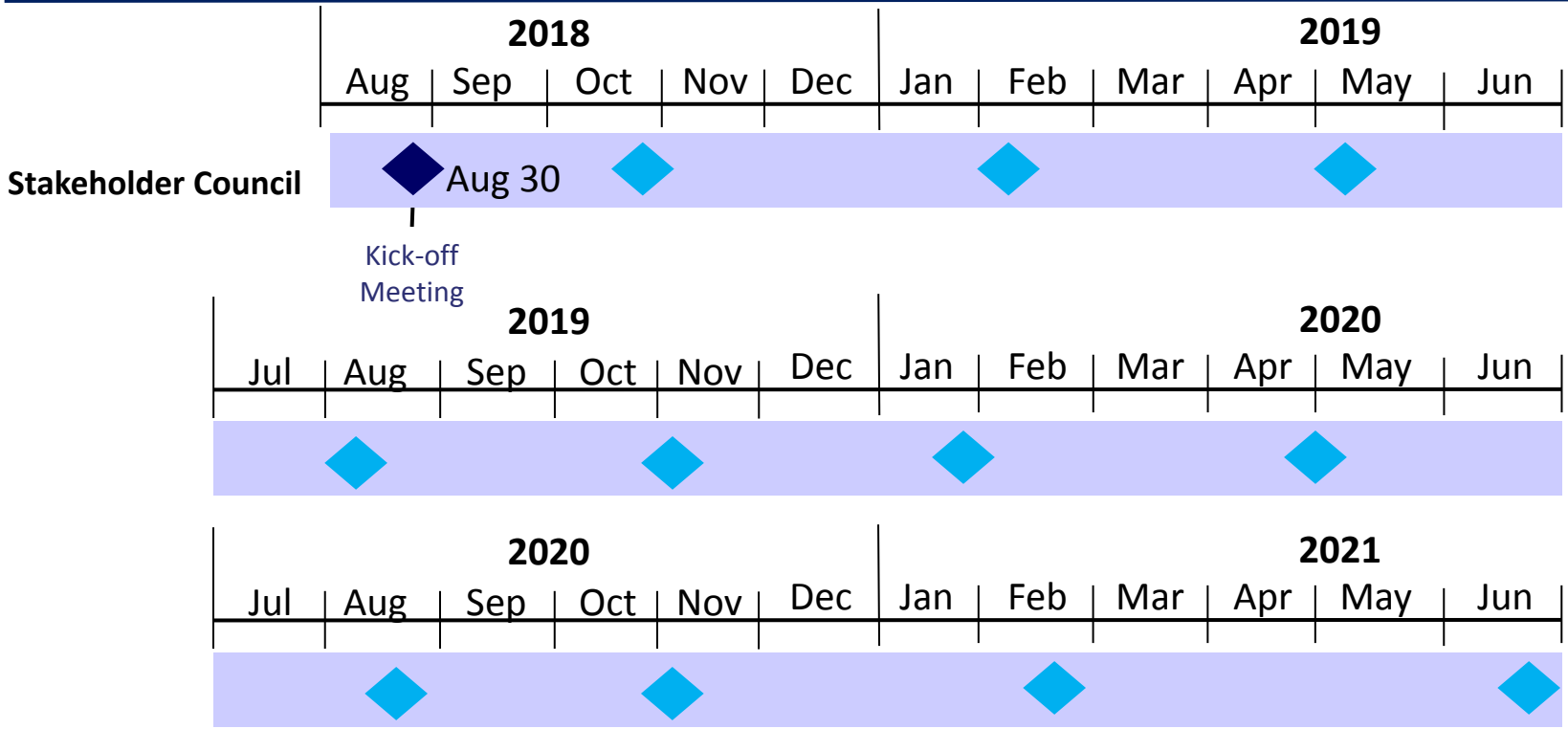
- Provide strategic input and feedback on IGP process development, activities and results, and aspects for improvement.
- Discuss priority issues that may benefit from a subject matter expert–based working group to address tactical and technical issues.
- Foster collegial, balanced discussion to achieve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

Stakeholder Council Responsibility

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)



~14 hours quarterly (i.e., in-person meeting, meeting preparations, stakeholder engagement, etc.)

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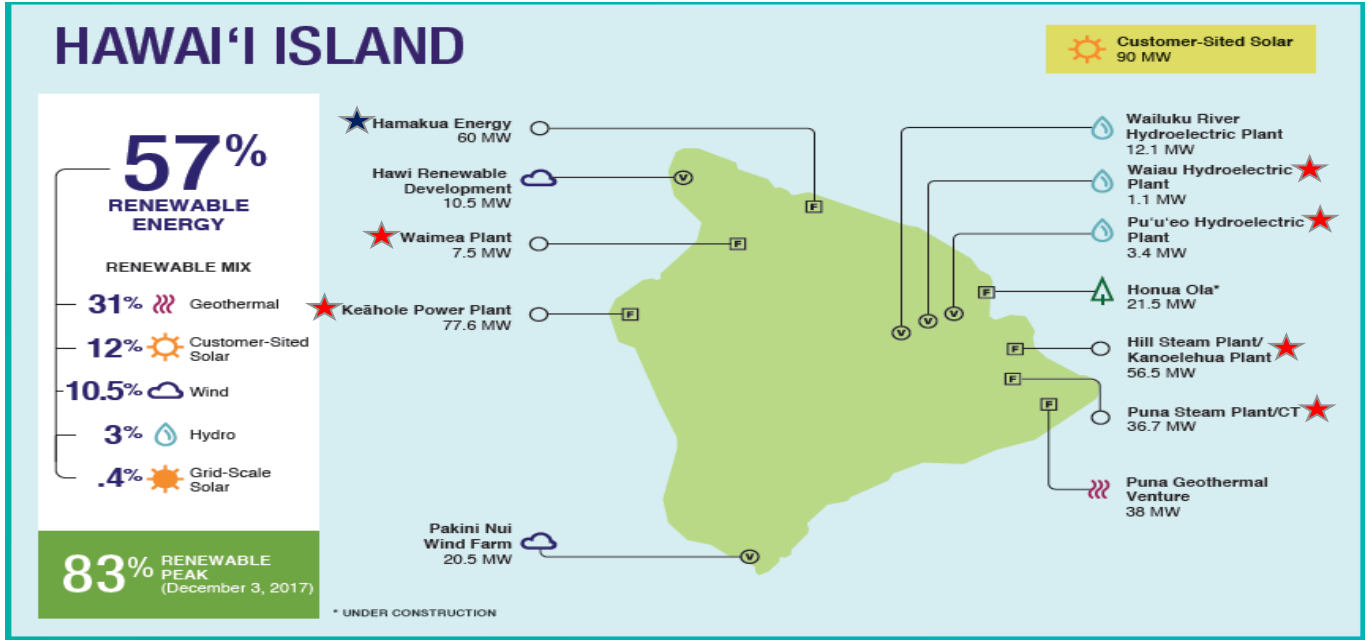
Questions & Feedback

IGP Context & Overview

General Background

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

- BIOFUELS
- BIOMASS
- GEOTHERMAL
- HYDRO
- CUSTOMER-SITED SOLAR
- GRID-SCALE SOLAR
- STORAGE
- WASTE TO ENERGY
- WIND
- COAL
- OIL
- OIL (DEACTIVATED)
- HAWAII ELECTRIC LIGHT OWNED
- HAMAKUA ENERGY (PACIFIC CURRENT) OWNED

Note: As of May 2018, PGV has been offline due to lava flow

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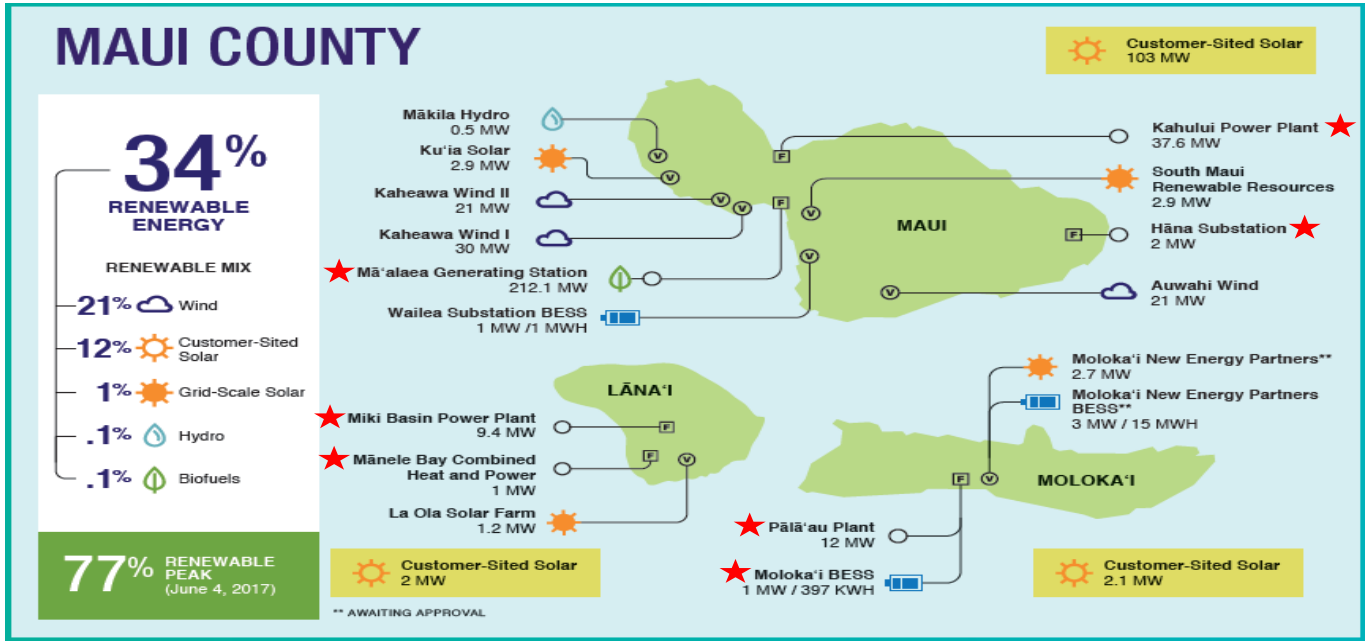

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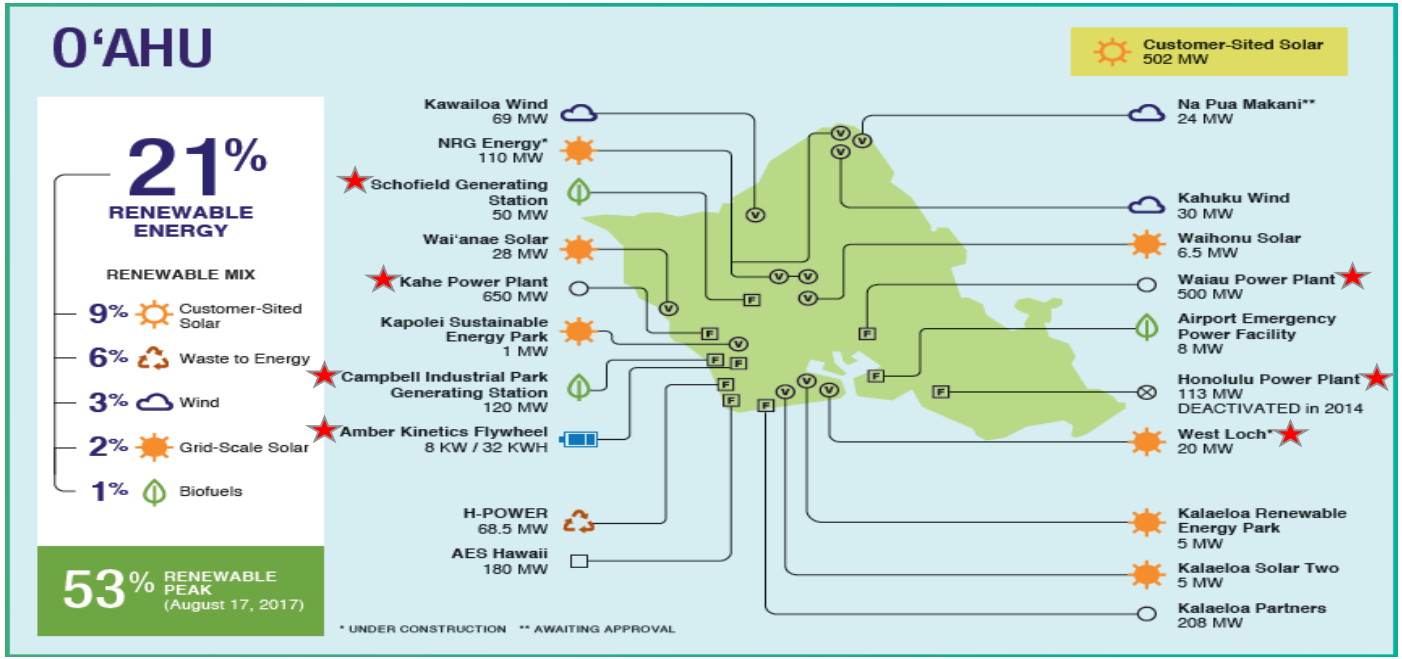

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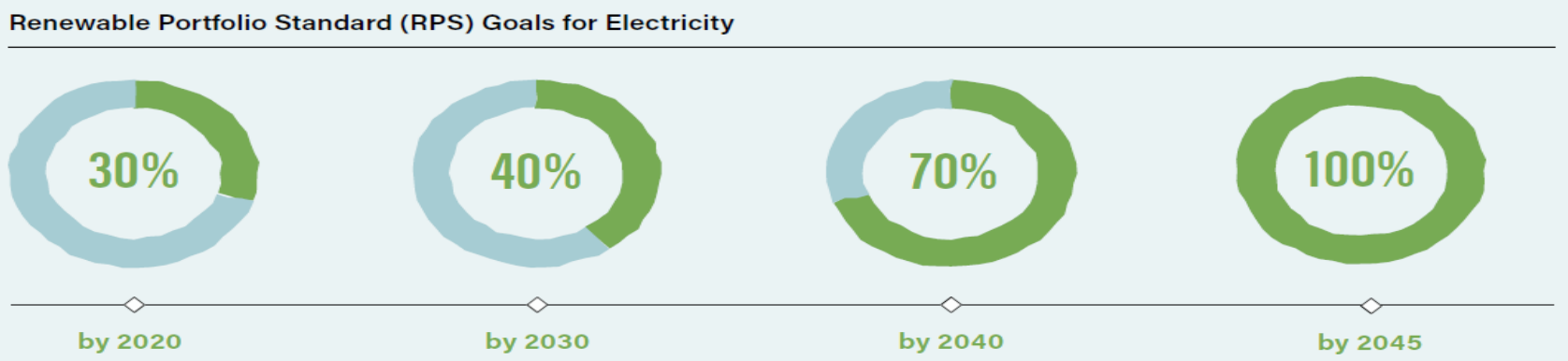
Renewable Energy Goals

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.



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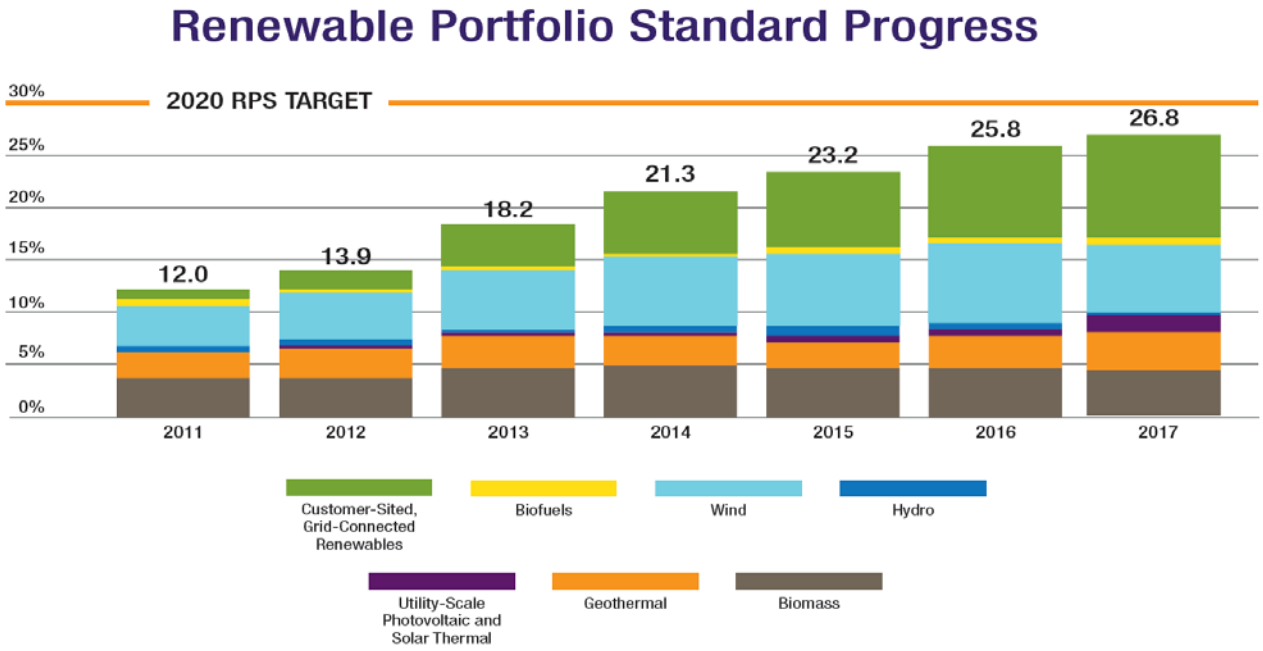
Our 2017 RPS Progress



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%.

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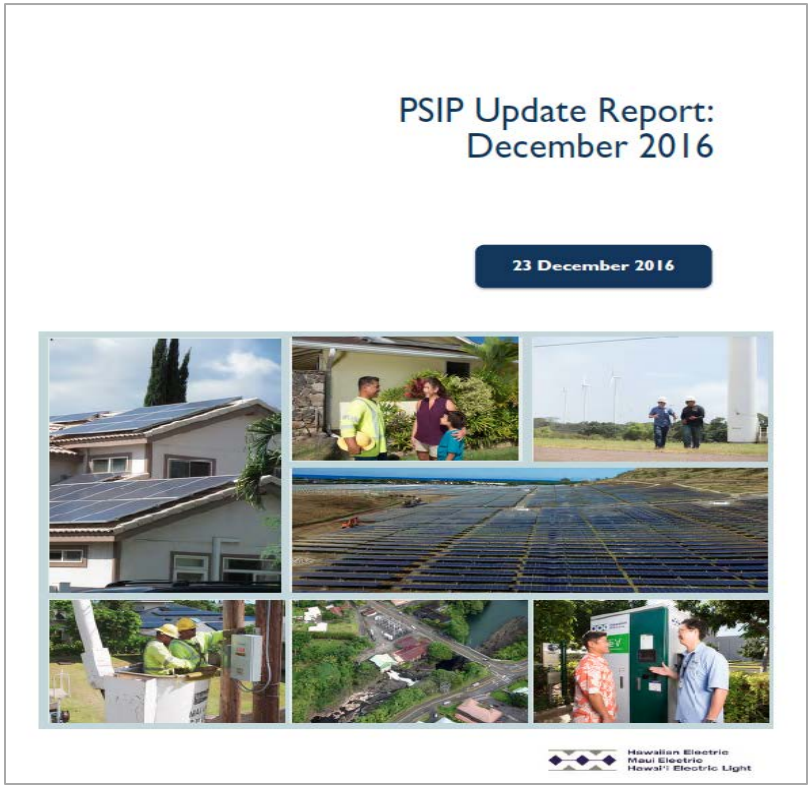
Power Supply Improvement Plan



- 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

https://www.hawaiianelectric.com/about-us/our-commitment/investing-in-the-future/integrated-grid-planning

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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

Rooftop Solar	255MW	30MW	38MW	0.7MW	1.4MW
Demand Response	89MW	11MW	15MW	0.3MW	0.3MW
Grid-Scale Wind	64MW	22MW	62MW	4MW	5MW
Grid-Scale PV	352MW	1MW	7MW		
Feed-in-Tariff	24MW	6MW	1MW		

PSIP Assumes:

- Control of future DG-PV
- Future Grid Scale projects are dispatchable

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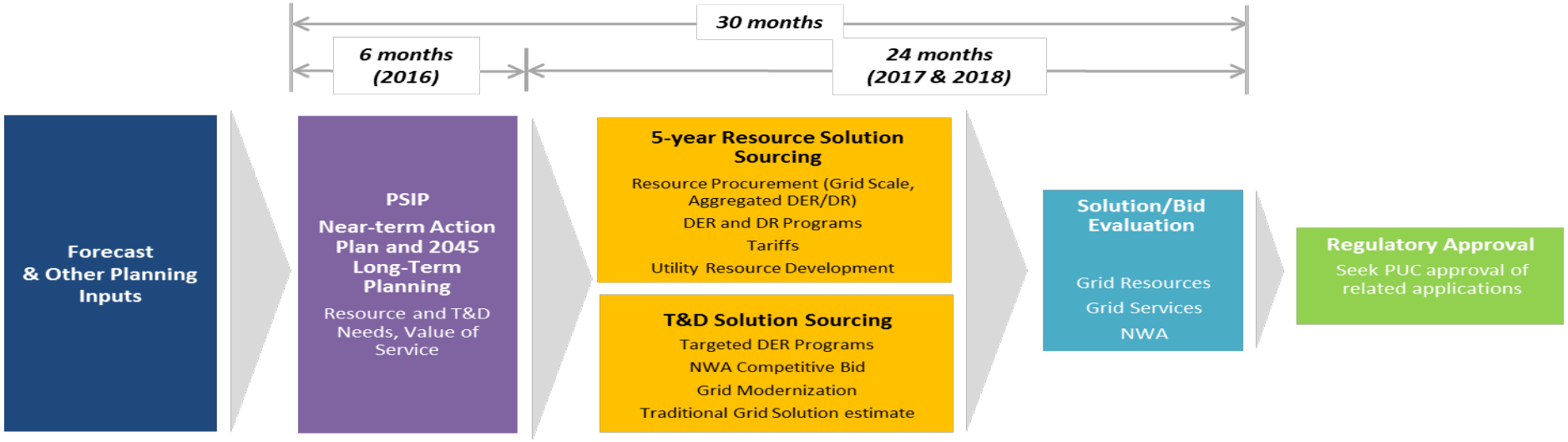
PSIP System Planning & Solution Sourcing Processes



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

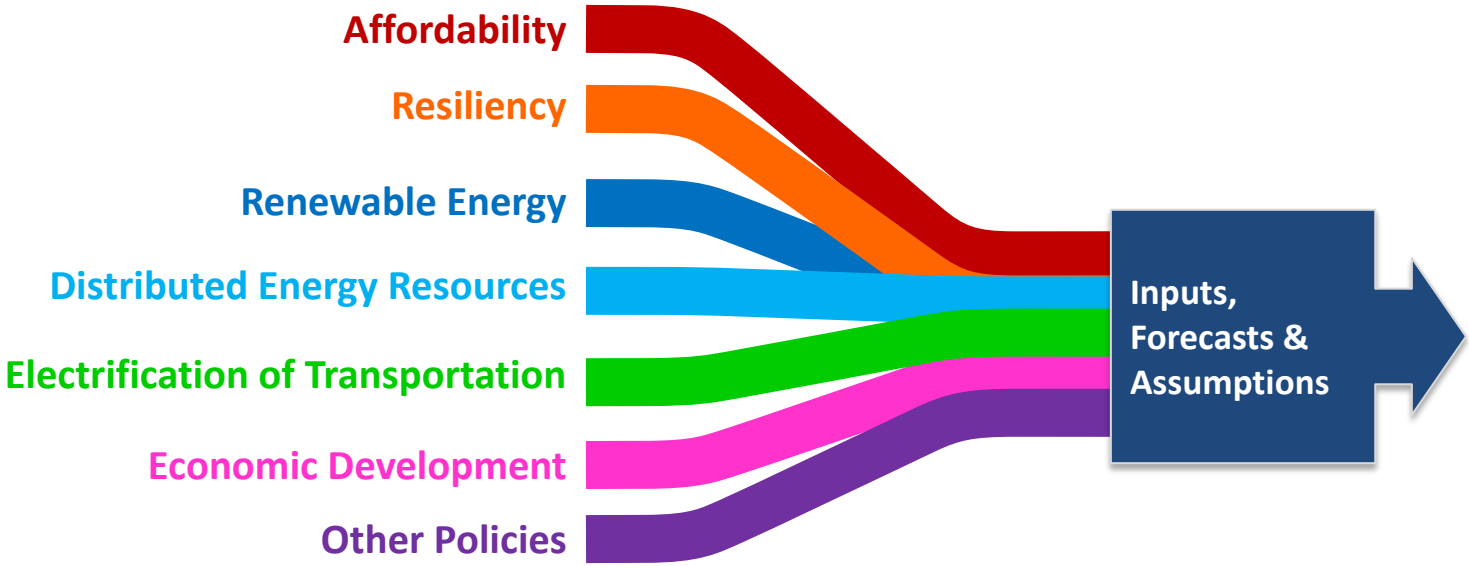
What is Integrated Grid Planning (IGP)?

- 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

https://www.hawaiianelectric.com/Documents/about_us/our_commitment/20180301_IGP_final_report.pdf

IGP Enables Convergent Outcomes

Discrete Objectives Converge Thru Unifying Planning & Solution Selection Process



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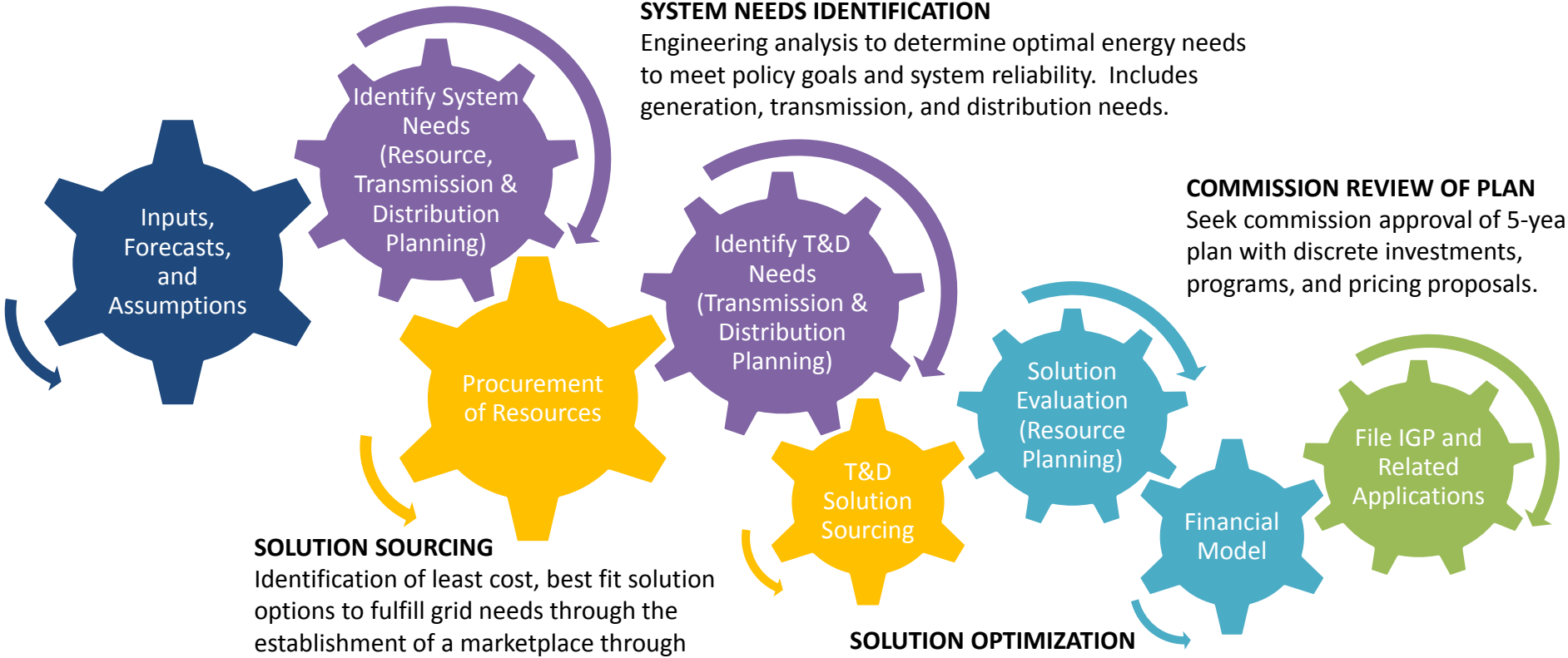
IGP & Solution Sourcing Process



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

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

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.

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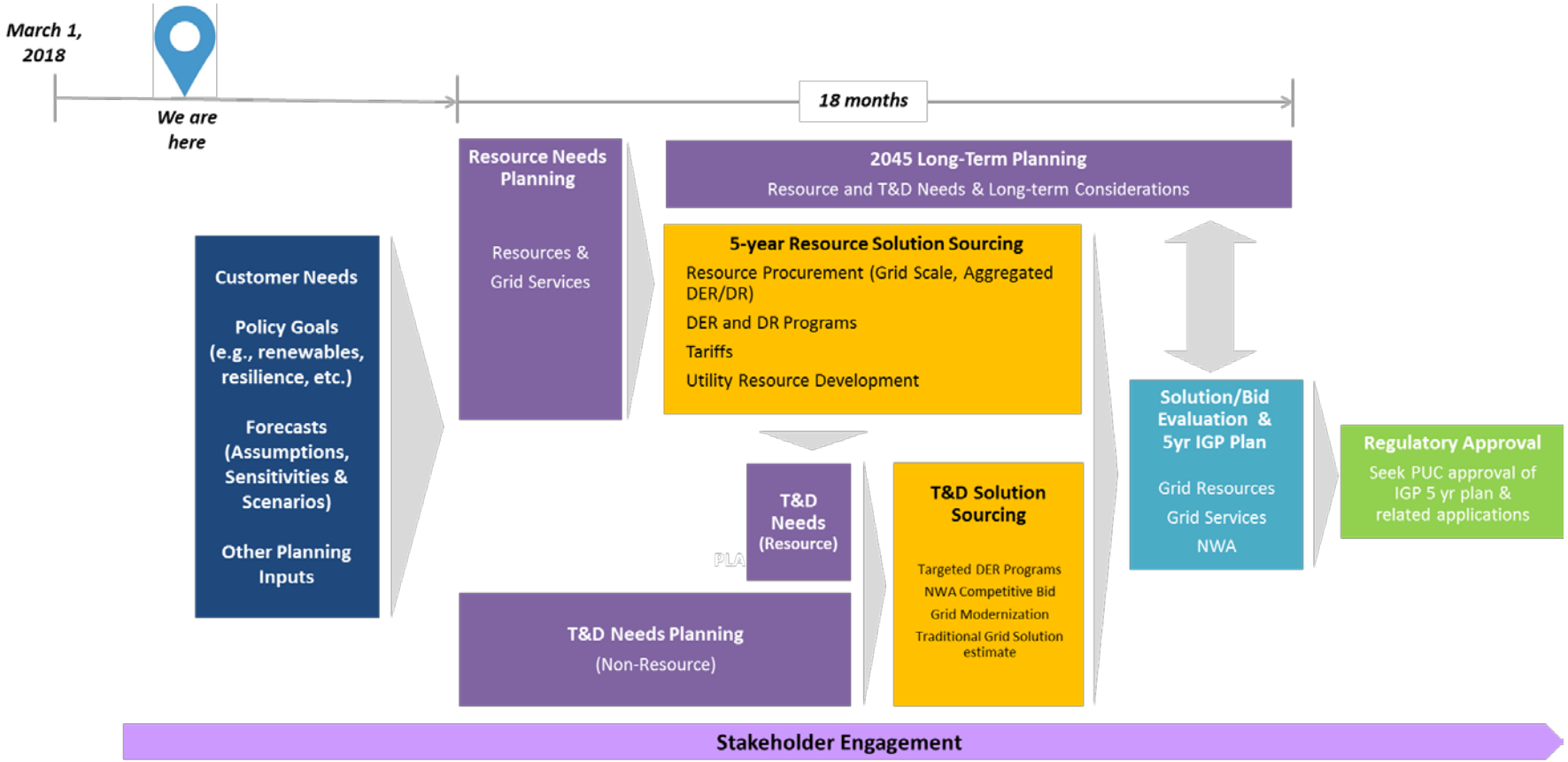
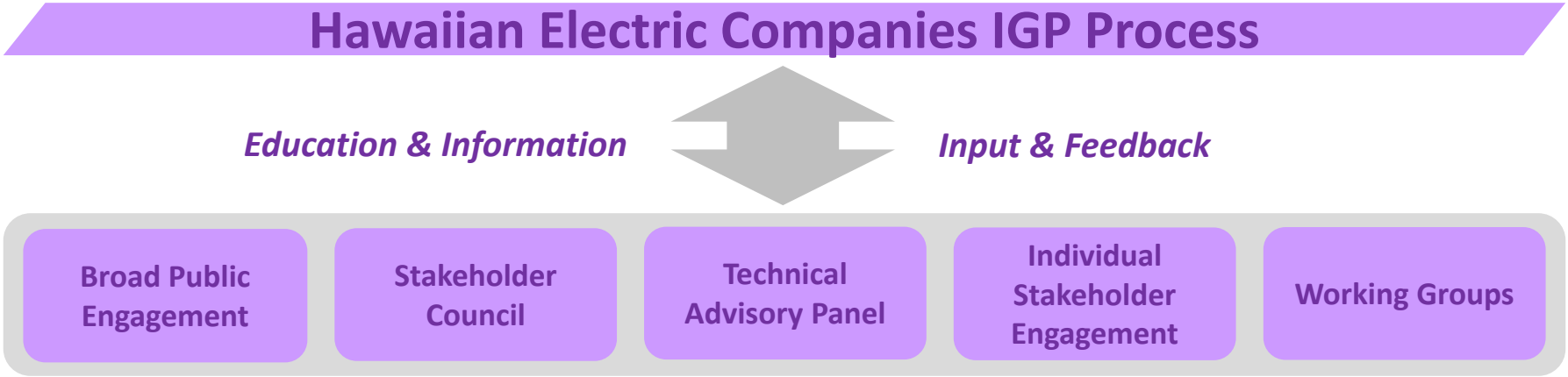
IGP Process



Reference: Integrated Grid Planning Report, Figure 3, page 14

Stakeholder Engagement Model



Reference: Integrated Grid Planning Report, Figure 4, page 16

Technical Advisory Panel

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

- 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

Docket No. 2018-0165 Integrated Grid Planning

- 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)

https://www.hawaiianelectric.com/Documents/about_us/investing_in_the_future/dkt_2018_0165_20180712_PUC_order_35569_opening_dkt.pdf

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!

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