



**Hawaiian
Electric**

Overview of Innovation Pilot Process

August 24, 2021



Welcome to Innovation Pilot Process meeting!

Meeting instructions

- ◆ Please use computer audio if possible
- ◆ Turn on your camera and mute your microphone (icons are all on controls bar)
- ◆ If you have any technical issues, click on chat bubble icon. @Nojiri, Andrew will be able to help you out.
- ◆ To Raise your hand, click on the hand raising emoji and then on the hand



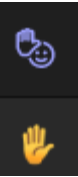
Agenda

12:00 – 12:15	Introductions – 10 min a. Opening comments b. Round-robin intros (30sec/person). “Name. Favorite spot or activity in Hawaii”
12:15 – 12:45	Background and objectives of Innovation Pilot Process
12:45 – 12:50	Break
12:50 – 13:50	Discussion on Areas of Collaboration
13:50 – 14:00	Closing comments



Meeting Norms

- ◆ Be present
- ◆ Be respectful of everyone
- ◆ This is an open space for discussion
- ◆ Chatham House rules:
 - Comments are non-attributable
- ◆ Practice democracy of time. Please raise your hand
- ◆ The facilitator will keep things moving and use “parking lots” to ensure everyone is heard



Purpose of the Innovation Pilot Process

"...the Commission is including a Pilot Process to foster innovation by establishing an expedited implementation process for pilots that test new technologies, programs, business models, and other arrangements. This is intended to support initiatives by the Companies to test new programs and ideas quickly and elevate any successful pilots for consideration of full-scale implementation."

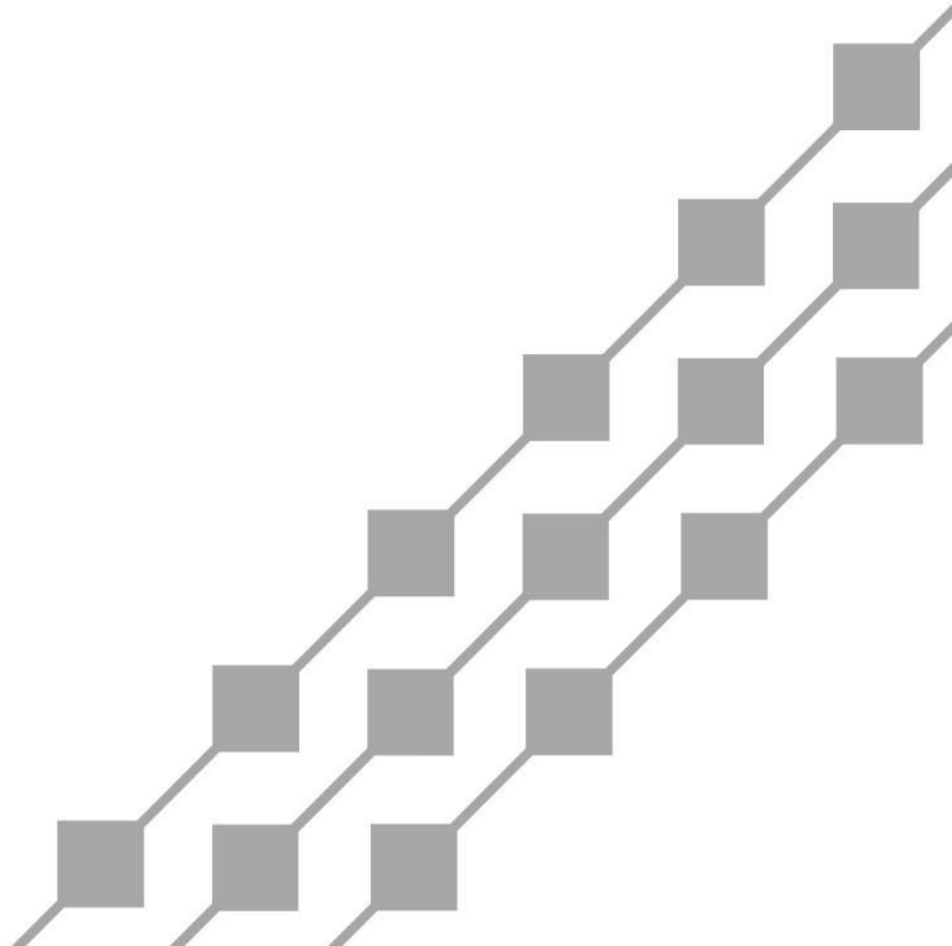


Workplan Development Phase

Develop a Workplan that identifies the high priority areas of collaboration for piloting innovative solutions that can provide value and benefits to electric utility customers.



Background



Workplan Development Framework: Guiding Principles

- ◆ **Innovation**
- ◆ **Flexibility**
- ◆ **Iteration**
- ◆ **Collaboration**
- ◆ **Prioritize Learning**
- ◆ **Customer-focused**
- ◆ **Speed**
- ◆ **Ownership**



Workplan Development Framework: Guiding Principles

- ◆ **Innovation** - Innovation can take many forms and does not require paradigm-shifting inventions. The Framework will be open to testing Pilots across a broad array, including but not limited to new technologies, customer engagement programs, business models, products, services, and other arrangements.
- ◆ **Flexibility** - The Framework process will incorporate innovative ideas and be open to input and continuous improvement. Since Pilots operate with a higher degree of technology risk and market uncertainty, there must be an ability to adjust and pivot during the Pilot, with reasonable communication and transparency.
- ◆ **Iteration** - The Framework process itself will incorporate lessons on the process of launching and executing multiple Pilots over time and be open to input from Stakeholders and will thereby improve over multiple iterations with time. Learnings from previous Pilots will be used in planning for future Pilots.
- ◆ **Collaboration** - Ideas for Pilots can originate from the Companies or from Stakeholders through a flexible engagement process that will value and respect the time commitments, contributions, and expertise of the participants.

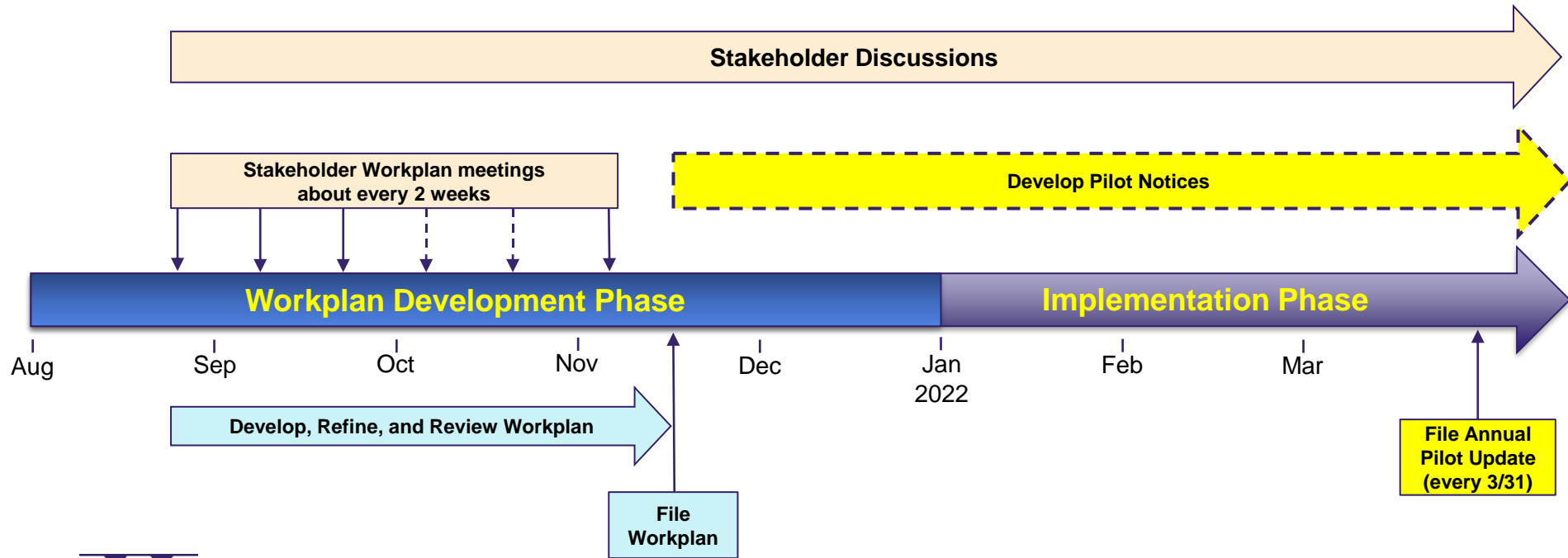


Workplan Development Framework: Guiding Principles (cont.)

- ◆ **Prioritize Learning** - The goals and objectives of each Pilot will be set to prioritize learning and communicating results to Stakeholders. Learning from Pilots includes clearly stating assumptions, measuring results, and adjusting. Since there is inherent uncertainty in testing new approaches, there is an understanding that not all Pilots will be expanded into full commercial or permanent business offerings as originally stated in a Workplan or Notice.
- ◆ **Customer-focused** - An overarching objective of all Pilots collectively will be to enable customers to make empowered choices or benefit from innovative solutions. Pilots will be set up to test ideas, assess solution readiness, and measure customer and market feedback.
- ◆ **Speed** - The Framework process is set up to act quickly within the guardrails set by the Commission. Notices should be filed and approved in a timely manner and Pilot schedules will be set to prioritize speed of execution.
- ◆ **Ownership** - All Stakeholders should take ownership of the Framework process and Pilots that emerge. The Companies recognize that developing Pilots will require a shared vision and common set of values. Empowering Stakeholders to identify opportunities for innovation, following through on implementing their ideas, sharing in others success, and achieving measurable impacts and lessons learned will help to build a strong foundation for transitioning successful Pilots to full-scale solutions.



Overview



Innovation Pilot Process general parking lot

Possible additions to Principles

"Community focused" to make a larger umbrella

Renewables focused
New gen.
decommissioning

How to balance clear reporting with meaningful reporting
Streamlining short and sweet filings

Clarity of communication is important

Overall goals

Expanding the capacity of HECO to innovate
Create a practice and culture of innovation

Desire to achieve quick and informed decisions

Potential tension: speed, flexibility
Discuss at a future meeting in more details

Continuous (annual?) updates to the Workplan and Pilot Process

Lot of cheap experiments implies quick approval
Cheap = price cap (ficom)

Balancing between the objective of the pilots. Some pilots focused on scaling vs other

Prioritize Near-term wins Not just technologies, but also business models

Collaboration with stakeholders, startups could be a way to speed up and reduce risk

bringing DOT to the conversation can be helpful, but tension with more cooks in the kitchen

Portfolio of options across the 3-year time frame. Certain tech will take longer than others

Not all pilots are the same. Possibly buckets: quick vs longer term objectives

Path to accelerate refined ideas? What defines 'shovel ready'?

Look for opportunities to match funds with Federal Infrastructure Bill

Cost-share requirements. Timing of Fed opps & Approvals vs NOI timing

What's the process to get from ideas to fully fledged projects and executing

How to leverage local Hi resources? e.g. HNEI hardware in the loop test labs

Leverage existing initiatives to start new

BREAK – 5 minutes



Areas of Collaboration



Areas of Collaboration

Electrification of Transportation

Curtailed renewables
e.g. making H₂ or energy storage

RESILIENCE

Cyber-security

IDEAS

Innovation discussion group
Free flow of information
Highlighting existing capabilities in H

Opportunity of a group of innovators and stakeholders coming together in one space

Inverter tech V2X for resilience
Fleets for grid ops

micro-mobility Docking stations with connected charging and solar
Relative impacts of scooters vs delivery

How to use existing inverters
Existing fleets
How to compensate

e-mobility options
Scooters, bikes

site-agreements to facility installation of EV infrastructure
Public chargers

bike lanes, parking, business bike to work programs

micro- or mini-grids for community or grid resiliency

Develop renewables sources for large customers

how to try new legal and data sharing frameworks to enable data access while not compromising security

share renewable load across multiple meters
e.g. pump stations have area to build PV vs wastewater

Each pump station has a diesel backup gen.
How could those assets be used by HECO - perhaps tweak rules to

shared battery storage at critical use facilities
Serves grid capacity in normal ops, but acts as resilience

Resilience. Prioritizing which customers come back on after an outage.

Microgrids +1 Critical customers geographic

Take advantage of existing assets.
Perhaps run at full load during testing to meet load requirements.

Communications protocols
Testing different standards
Demand-side management

Next gen inverter protocols

EPR1 and DOE national labs are looking at standardization

Customer outreach
New marketing strategies
Communication channels
Behavioral component

Financing of LMI programs.
Virtual sharing of resources

How to monetize & finance efficient mechanisms in LMI, Multi-unit dwellings

Data-sharing possibilities. Platforms
Figure out ways to get more information for DER providers

Develop solutions with that data
From 3rd party developers

Is the data useful at an aggregated level vs keeping finer resolution to make decisions

unlocking demand flexibility

Wholistic solution of battery+PV+EV charging at apartment buildings

+1 Grid-interactive efficient buildings DER participation

grid mod and make better use of pole infrastructure

New processes to engage with LMI customers.

understand needs and then explore solutions, rather than bolt-on programs

Solar & DER - how to reduce soft costs
New tech at the panel-level
Permitting, standardized tools

How to drive competitive market forces to come up with and test solutions

Next Meeting

- ◆ September 7th (1 - 3 PM)
- ◆ Let us know if you want to have a separate discussion
- ◆ Purpose:
 - Discuss the consolidated Areas of Collaboration
 - Dive a level deeper into what pilot projects would look like
- ◆ Proposed Homework:
 - Send us more Areas of Collaboration
 - Think about what constitutes a good pilot project and overall goals for the Innovation Pilot Process
 - Feedback on the meeting



Feel free to contact any of us:

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Closing Comments

Mahalo for your time!

