

Forecasting Assumption Working Group (FAWG) Meeting 1: Introduction

Wednesday, March 13, 2019

9:00am – 12:00am

ASB 1 and WebEx

Attendees

Attendee	Organization	In Person	WebEx
Pono Shim	Oahu Economic Development Board	X	
Rocky Mould	City & County of Honolulu	X	
Jacqui Hoover	Hawaii Island Economic Development Board	X	
Teena Rasmussen	Maui County	X	
Ron Whitmore	County of Hawaii, Department of Research and Development		X
Dr. Carl Bonham	University of Hawaii Economic Research Organization (UHERO)	X	
Dr. Binsheng Li	Department of Business, Economic Development & Tourism (DBEDT)	X	
Jay Paul Lenker	Hawaii Public Utility Commission	X	
Ashley Norman,	Hawaii Public Utility Commission	X	
Dave Parsons	Hawaii Public Utility Commission		X
Rene Kamita	Consumer Advocate	X	
Henry Curtis	Life of the Land	X	
Ramsey Brown	Hawaii Energy	X	
Calvin Opheim	Electric Reliability Council of Texas (ERCOT)		X
Terry Baxter	NV Energy		X
Amber Riter	Portland General Electric		
Patrick McCoy	Sacramento Municipal Utility District (SMUD)		X
Omar Saddiqui	EPRI Understanding Electric Utility Customers		X
Pam Anukoolthamchote	Hawaiian Electric	X	
Collin Au	Hawaiian Electric	X	
Divesh Dhingra	Hawaiian Electric	X	
Anne Fuller	Hawaiian Electric	X	
Cathy Hazama	Hawaiian Electric	X	
Joanne Ide	Hawaiian Electric	X	
Sorapong Khongnawang	Hawaiian Electric	X	

Therese Klaty	Hawaiian Electric	X	
Christopher Lau	Hawaiian Electric	X	
Earlynne Maile	Hawaiian Electric	X	
Thomas Yokota	Hawaiian Electric	X	
Peter Young	Hawaiian Electric	X	
Mike Ito	Maui Electric		X
Kolter Kalberg	Maui Electric		X
Lisa Dangelmaier	Hawaii'I Electric Light		X

Presentation Highlights

- Overview of the IGP process and timeline
 - Scheduled to start January 2020 - Process will take around 18 months (Ending of evaluation).
 - Currently identifying needs, assumptions, planning inputs etc. through working groups.
 - Different working groups, councils and panels that have been established.
 - Meetings will use Chatham House Rules.
- Background information on Hawai'i's Electrical Utility Service Territories.
 - Hawaiian Electric: Oahu
 - Hawai'i Electric Light: Hawai'i Island
 - Maui Electric: Maui, Moloka'i, and Lana'i
- Customer and sales mix (i.e. Residential vs commercial) vary by island.
 - The residential sector has the most customers when compared to the commercial sector however, the allocation changes when looking at the split by sales where the commercial sector makes up a larger share.
 - The ranking of the commercial sectors vary widely by island.
 - For example, the military is the largest sector for commercial accounts on Oahu compared to hotels on Maui or Lanai.
- Forecasting Overview
 - Creating a forecast is a group effort that involves many organizations from both inside and outside of the Company.
 - The number of customers, energy use, and peak demands are forecasted.
 - Forecast developed in layers, starting with an underlying forecast (driven by the economy, weather, electricity price...), other layers include energy efficiency, distributed energy resources and electrification of transportation are added or subtracted to result in the Sales Forecast at the Customer Level.
 - The effects of demand response and controllable distributed energy resources are accounted for downstream of the forecast process in the resource planning phase.
- Group Composition
 - The working group is made up of a diverse mix of experiences from organizations with a strong interest in community planning and economic development, experts on the economy, the Commission and Consumer Advocate, and environmental/public interest member and experts on projecting energy use or designed programs. This working group is the "Core" group as identified in the presentation.

- The working group will assist the Company in coming up with sound assumptions on the key components that go into the development of the forecast and vetting the results including sensitivities and scenarios.
- In addition to the core group there will be groups with expertise in the economy, DER, EE and EoT that will be brought in to assist the core group in the development of the forecast assumptions.
- The core group is expected to explore inputs from economy experts and how the inputs are factored into the assumptions. (i.e. real estate, retail, manufacturing, resort & hotels, military)
- DER experts are expected to provide insights into residential & commercial projects.
- EE experts are expected additional insights into EE projects, as well as providing perspectives of EE adoption.
- EoT experts are expected to provide insights into auto market and charging solutions.

Discussion:

- Forecast assumptions:
 - Economic Drivers
 - Is life expectancy taken into account? People are living longer and use more energy in their lifetime.
 - Births and deaths are factored into the population forecasts. Birthrates have been slowing over the last decade.
 - Current studies show that Oahu's population has been declining
 - How is affordability incorporated into the economic forecasts? e.g. As water systems are privatized they get less affordable to those most in need.
 - Weather
 - Discussion on whether climate change is being taken into consideration.
 - Weather is immediate and short term; climate is longer term.
 - Will climate change be a factor in population, i.e. will unfavorable weather in other locations cause migration to Hawai'i?
 - The economic forecast does not account for possible effects of climate change on population projections however; the growth in population is slowing.
 - Will rising sea levels threaten utility infrastructure? If so, what will be the cost of retreating further inland?
 - Electricity Price
 - How will the privatization of electricity generation (i.e. each person has their own energy source and storage) affect those who are financially unable to defect.
 - Will all the costs go on to them?
 - Will the costs of defection be passed on to those that do not, and what will be the costs?
 - Someone mentioned an exit fee that would cover the cost of upgrades incurred to upgrade the system for a customer that is defecting.
 - How is affordability incorporated into the economic forecast? i.e. As water systems are privatized they are less affordable to those in need. This is a lesson to be looked into.
 - Migration in the population forecasts are affected by affordability.
 - Energy Efficiency
 - Would like more detailed analysis in how efficiency affects the forecast.
 - Is home automation (i.e. smart homes) factored in?
 - What is the impact of EE on the peak?

- Currently, the forecast derives a simple ratio of the historical energy impacts to historical peak impacts then applies to the forecasted energy impacts. Considers the type of equipment installed in the historical periods to find an appropriate time frame. Looking forward to receiving the EEPS potential study.
 - The ratio of EE will need to change for the future because the “low-hanging fruit” i.e. replacing light bulbs will be unavailable and getting higher EE’s will be more difficult.
 - Has ratio changed over the last 10 years?
 - The ratio can vary by year depending on changes to the programs however; using a blended average over multiple years smooths that out.
 - Newer modeling uses load profiles of sectors to shape efficiency.
 - Where does home automation come into the forecast?
 - Demand Response (“DR”)
 - How is demand response included in the forecast?
 - DR is considered a resource and is included downstream of the forecast development in resource planning.
 - Storage
 - Are disposal fees considered?
 - What are the project costs for large storage?
 - If battery prices continue to drop will people defect from the grid?
The forecast factors in the lower usage from PV paired with storage but not specifically customers leaving.
 - Electrification of Transportation
 - Charging in the afternoon is too problematic
 - Will having everyone charge after 9PM just move the peak?
 - The forecast currently includes uncontrolled charging. Programs can then be designed to control the charging.
- Other Issues Raised/ Discussed
 - Battery cost in assumption – how is lifespan, safety, and its effects on environment are factored into the cost?
 - How are future substitute technologies considered in assumptions?
 - How do future renewables (cheaper and more efficient) affect customer’s decision to stay on the grid?
 - Should there be an “actual” forecast that does assume that the utilities will hit the RPS goals?
 - How will the projects accommodate current fire code.
 - I.e. “Camp” Fire where Lithium Ion batteries started a fire and local fire dept were unprepared.
 - Will there be engagement between the various working groups where intersections exist?
 - Yes, likely some cross-over but not as much with this particular group
 - Some members of this group are already engaged in multiple workgroups

Actionable Items

Date for the next meeting (May timeframe) – list of panel of experts and topics to cover will be provided. FAWG members are welcome to add to the list and topics for discussion.

Next set of meetings will be on May 22 and 23.