

State of Hawaii Public Utilities Commission
Energy Efficiency Portfolio Standard (EEPS)
Technical Working Group (TWG)

Meeting Summary

February 25, 2020

8:30 – 10:15am Hawaii Time

Hawaii Public Utilities Commission, Honolulu

8:30 – Welcome and Meeting Objectives

- Attendees (~ 20 attending live in Honolulu and ~ 17 on the videoconference) were welcomed and advised that the meeting was being recorded.
- PUC staff described the goals for the meeting.
- The Energy Efficiency Manager (EEM) previewed the agenda.

8:40 – Baseline Study Findings

- Applied Energy Group (AEG) presented findings from the Hawaii Statewide Baseline Study. As background, AEG is also conducting a Market Potential Study (MPS) for the state of Hawaii, sponsored by the HPUC. It quantifies the landscape of energy efficiency and demand side management over the next 20 years and assesses current status with regard to EEPS target and paths to continue to reach goals.
- To support the MPS, AEG conducted a Statewide Baseline Study, which had the following objectives:
 - Identify electricity and gas-using equipment
 - Obtain building / dwelling characteristics and occupant energy-use behavior
 - Acquire descriptive information about households, businesses and the military
- An important feature of the surveys is the ability to link customer responses and characteristics to their electricity bills that allows the survey to establish a baseline for estimating change in appliances and equipment and energy use.
- AEG described the survey approach and presented some survey results. Surveys covered the Hawaiian Electric Industries (HEI) service areas: Oahu, Maui, Molokai, Lanai, and Hawaii Island.
- The Baseline Study Report will contain saturation results, supplemental survey results, and appendices with cross tabulations for each survey question.
 - *A participant asked if each island will get its own data and offset consumption. Answer: yes, this data can be provided, but there will not be related hourly shapes.*
 - *A participant asked about the definition of Low and Medium Income (LMI). Answer: The LMI definition aligned with the ALICE definition.*

- *A participant asked if AEG has a breakout of what was produced to offset consumption. Answer: The chart showed the net sales and estimates of additional that was sold back. This was based on HECO billing data. AEG will look back to see if this could be customer by customer. They don't have hourly shapes.*
- *Net energy metering has what is on the bill. Do you have energy consumed as it is being produced? Answer: AEG will check. Another participant said HECO has delivered and received, which could show what is existing that wasn't consumed and could give indication of how much is used at the same time it is produced and not being put in a battery.*

9:11 – Hawaii Statewide Market Potential Study

- AEG provided the overview of study and approach, progress towards Energy Efficiency Portfolio Standards (EEPS) goals and residential and non-residential potential.
- AEG described the Statewide Potential Study objectives.
- AEG described the EEPS Progress to Date and Future Projections. “Our preliminary analysis indicates that **the EEPS target appears to be attainable.**” Interventions can come from many sources described with graphs showing:
 - o Embedded impacts: progress from 2009 Through 2019.
 - o Potential impacts: projecting savings potential from 2019 Through 2030
- AEG described definitions of energy-efficiency potential and approach to adoption rates:
 - o Technical – everyone chooses the efficient option when equipment fails regardless of cost
 - o Economic – is a subset of technical potential that includes only cost-effective measures based on total resource cost test (TRC) using current avoided cost forecasts from HECO and KIUC
 - o Achievable – is a subset of economic potential that accounts for likely customer adoption of EE measures
 - o Adoption rates represent actions customers will take above and beyond compliance with codes and standards. Adoption rates are applied to economic potential to calculate achievable potential.
- Questions
 - o *A participant asked about the difference between business as usual and high potential. Answer: AEG referred to the slide on estimating long-term market transformation. The solid line shows what is done under aggressive programs; the dashed line might be more realistic for Hawaii. Business-as-usual is the gradual maturation of future interventions which are similar to those in the market today. High potential is program maturation and market transformation from a variety of sources, such as expanded programs, future state and federal codes and standards, and future market effects.*
- AEG does baseline end-use projection – forecasts to 2040 (even though EEPS goes to 2030).
 - o Residential end-use savings: lighting makes up a majority of the early-year potential. Top measures for cumulative savings in 2030 are: solar water heater (replacing greater than or equal to 55-gallon water heaters), ductless mini-split

- AC, general service lighting, room AC, refrigerator (decommissioning and recycling).
- Commercial end-use savings are similar: lighting accounts for a majority of the early-year savings. Cooling and refrigeration savings phase in over the second half of the study as big measures. Top six measures are lighting: linear, general service and high-bay lighting; and water-cooled chiller and advanced new construction design.
- AEG describes changes to the model since MPSWG January 7th meeting (e.g., for the impacts of the 2020 Energy Independence and Security Act backstop from general service lamp standards) but the net impact for EEPS target stays similar.
- Next steps with respect to the Technical Working Group - Please provide any questions and comments by February 28. AEG is available to discuss this afternoon or by phone later in the week. AEG is also working to package up hourly analysis results. And an assessment of possible future demand side rates coming from Brattle Group.

9:45 Observations from Baseline and Potential Study Research

- The group was invited to ask questions. *The first question was about the temporal aspect for appliance by end technology. Answer: AEG developed end-use load shapes by island, segment, end use and technology, as well as savings shapes. Delivery of these is to be determined.*
- *Another participant noticed that there was residential EV charging but not for commercial space. Why is that? Answer: AEG described that data is shown for residential. Commercial charging forecast is coming from HECO, but it is expected to be smaller.*
- *Going back to baseline data, for NEM customer disaggregation, do we also have the renter and income classifications for the different NEM categories? Answer: AEG thinks this could be estimated from the survey, but notes that these are small sample sizes, especially with the NEM customers.*
- *Referring to slide 46, how do these relate to percentages of total consumption? Answer: the projection is expected consumption. Another line includes C&S on the books and actions that will be taken outside of programs or other interventions. This is the jumping-off point, sometimes referred to as “net savings”. Slide 38 shows the reference point in 2030; and slide 46 shows what comes from other end uses, to put this in the context of total consumption.*
- *Will there be a scenario looking at future codes and standards, since the State has this lever? Answer: AEG said this can be considered under “program concepts”, which includes policy and other efforts.*
- *What about homes that have gas appliances. Will tables be split? Answer: we have the info for gas appliances (e.g., clothes dryers and pool heaters), but the data is thin. The participant noted that when you see averages, some can be masked because of gas uses; also, it would be good to know what that is for future consideration of a “gas RPS”.*
- *In terms of residential saturation of HVAC, were there notable difference with how rates affect folks across different islands? Answer: AEG Says that it might be able to look at for*

O'ahu, given the larger sample size. AEG notes that this is true across the country due to residential saturation of air conditioning.

- EEM thanks AEG for their work. AEG thanks the Working Group for their contributions.

10:00 EEPS Review

- The EEM provided the EEPS Review process update. Other EEPS review activities include EEPS Framework review, assessing existing goals and potential to meet them, and considering enhanced EEPS metrics
- Regarding metrics, following discussion with the Technical Working Group and Staff, the following four new metrics are proposed for statewide reporting.
 - o [Clarified] Cumulative persisting energy savings (kWh)
 - o Cumulative persisting peak demand reduction (kW)
 - o Avoided generation fuel consumption (barrels of fuel oil)
 - o Emissions reductions (tons CO₂e)
- Regarding the EEPS Framework review, the EEM reported that:
 - o the Potential Study shows sufficient but not excessive savings potential to allow meeting the 4,300 GWh by 2030 goal
 - o various policy context and other “administrative” updates could be made to the 10-year old Framework
 - o the proposed “EEPS reporting” metrics can be tracked and reported, but need not be commemorated in the EEPS Framework itself to have effect

As a result, the recommendation is to:

- o finalize and implement proposed metrics and begin annual tracking
 - o do not update EEPS framework document at this time
 - o continue to expand “energy optimization” in the PBF portfolio as approved by commission
- The EEM described work to formalize the EEPS tracking process, including:
 - o establish an ongoing EEPS tracking database and process as envisioned in the EEPS Framework to capture PBF and “Other Contributing Entity” savings impacts
 - o The PBF EM&V consultant (AEG) is the likely candidate to maintain EEPS Tracking Database
 - o Provision of data collection templates to “Other Contributing Entities” to help standardize their data inputs for EEPS impacts tracking

Closing discussion

- *A participant asked if there is time for feedback on the metrics? Answer: This is not closed, there will be work with HECO and other on details*
- *For metrics are carbon emissions considered from the electricity sector only, and what about EVs?. Answer: If it is an impact of the program or a replacement program, we would try to capture it. Work to finalize metrics is needed by June. Some of the data is less detailed, work would start with annualized data. At some point, the goal is to report on hourly impacts on fuel oil and carbon.*

10:15 – Adjourn