

Meeting Summary
State of Hawaii Public Utilities Commission (PUC)
Energy Efficiency Portfolio Standard (EEPS)
Technical Working Group (TWG)
2:30 to 5:30 PM, September 27, 2017

Suite 601, 1132 Bishop Street, Honolulu, HI

Opening Comments:

Hawaii Public Utilities Commission Chair Iwase welcomed attendees, encouraged them in their efforts on the EEPS Review process and spoke to the importance of equity in delivering the benefits of the EEPS program for all Hawaii ratepayers, particularly the people and businesses that cannot benefit from other means of managing their electricity use.

Introduction of Attendees and Agenda Review:

The PUC's energy efficiency manager (EEM) team led introductions in the room and on the phone followed by a quick review of the agenda.

EEM noted that the EEPS Framework¹ and research questions had been sent in advance.

EEPS Background—Legislative and Regulatory Framework for EEPS:

The EEM team presented a high-level overview of the legislative launch of the EEPS program. EEM then outlined the basics of the EEPS Framework document.

[See separate file containing the presentation slides]

No significant discussion was associated with this background presentation.

EEPS Review Process Overview:

The EEM team presented the draft proposal for EEPS Review process, including how the research would be broken into four "tracks" and staged over time.

[See separate file containing the presentation slides.]

No significant discussion was associated with this background presentation.

¹ Decision & Order 50089 Docket 2010-0037 on January 3, 2012.

Stakeholder “Hopes and Dreams” for EEPS*:

During this portion of the meeting, the TWG was asked to describe their “hopes and dreams” for topics that the EEPS review should address, areas of investigation, and work that will or could benefit their organizations if it is built into the EEPS review design. The comments were to be prompted by an initial set of EEPS topics/questions distributed prior to the meeting, expanding to contain topics that were not included yet but could be, or to rephrase/reframe certain initial draft questions. It was noted that the TWG will have a further opportunity to comment in writing about “hopes and dreams,” ahead of the EEPS review launch and will of course be in a position to help guide the review along the way.

As the state approached 100% renewables, how does that affect EEPS? He noted avoided cost is an important question in this context and the distinction between the value of capacity and energy and the changing values in the context of renewables dominated grid. He said that because KIUC’s avoided costs are based on renewables, and those costs are expected to drop over time, we need to find ways to boost the value of energy efficiency (EE) so that it continues to make sense going forward as renewables begin to dominate.

It would be good to encourage more rapid implementation of EE activities and integration of EE with other distributed energy resources (DER) support. EE uptake needs to be viewed in comparison to other options. There are lots of renewable energy options and those options will change over time based on what is happening on the grid. There needs to be a process for systemic valuation of the different DER options for planning purposes.

An existing projection/estimate of 40,000 EVs by 2030 is well below what was presumed by policy makers in earlier planning processes (400,000). Can 40,000 EVs can provide “backfill” adequately to take fossil generation off line. Overestimation of resource savings measures can actually hurt the deployment process and asserted that over optimistic forecasts of EV sales hurt the roll out of EVs.

Note that any electricity use in the state added by deployment of EV is explicitly excluded from EEPS savings tracking *vis a vis* the 2009 baseline forecast for 2030). (Since electricity use will increase from EVs, even if EE is deployed, when calculating savings from EE, the tracking baseline must be adjusted to “back out” additional electric use due to EVs.)

Energy storage should be treated outside of the EEPS planning process. HECO has already included some storage in the demand forecast as part of the renewables “self-supply” program as a “load shift” measure.

However, storage associated with DR programs is not included in the demand forecast for specific reasons.

It is critical to get the right information into the forecast. The EEPS impacts are expected to be bigger than most other factors affecting long-term demand forecasts. The utilities are depending on everyone at the table to help provide additional savings contribution estimates from all “contributing entities” (any organization or policy that contributes savings to EEPS) to get the projection as realistic as possible. HECO needs more granularity of savings data including information regarding the location and timing of EE accomplishments and projected EE forecasts. Demand forecasters also need information regarding codes and standards savings (including location and time (when/what year to the degree possible). They need to be able to identify EE savings by island. They also need hourly data (aka load shapes).

It is important to be clear on the objectives of EEPS goals. He asserted that the original objective behind EEPS was to reduce dependence on fossil fuel. Given progress toward renewables, and that EE savings are beginning to offset clean generation rather than fossil fuels, it makes sense to revisit and refine the official policy objectives of the Hawaii Clean Energy Initiative (HCEI) and the EEPS program.

Valuation of EE is changing by time and location. For planning for future programs, we need to know what these values are. Also, overall integration of (EE and other DERs) shouldn't get lost in the discussion. Technologies often combine functionalities that support EE, DR and/or storage. Customer and island equity is still a key question. How do we get fair value for programs to serve hard-to-reach customer groups – reaching these customers is more expensive than other groups. It is important to consider what role the Public Benefits Fee Administrator (PBFA) programs have in addressing these opportunities.

If EE delivers the highest value relative to other DERs it might be good to look at how to achieve EE goals sooner than currently planned.

The way we measure things, metrics should be addressed in Track 4 of the draft approach to the current EEPS review, as the third vector...the flexibility component. Attributes with which we look at different measures, not just kWh, such as ancillary services are important. Weather-driven events will control and create different system values. Both looking forward and backward, if we look at a “do nothing” scenario, to what extent do we understand those impacts?

The Commercial/Residential Split for Public Benefits Fee (funds) and PBFA program spending needs to be considered going forward.

Relating to valuation of various program opportunities, market transformation often gets shoved down or off the list when budgets are tight. Hopefully through this EEPS review process we can find more creative ways to value market transformation in the context of the overall EE portfolio planning.

If you follow logical progress of integration of different DERs into your planning, you will find that “many hands make light work”. More than one entity can work from different positions to deploy these integrated efforts.

PBF surcharge design is an important consideration for the EEPs review. The current approach affects different customer groups disproportionately, especially allowing self-generation customers to shift their burden onto customers that haven’t been able to access various PBF and renewables programs.

Hard to reach programs can be a challenge when there is only one cost effectiveness metric. As it gets harder to just do EE where it is less cost effective (e.g., in hard to reach market segments), we may need to start looking a Societal Cost Test rather than a Total Resource Cost (TRC) test.

Perhaps the Commission could broaden the TRC to something like the Societal Cost Test if Hawai’i Energy programs can’t get well below the current avoided cost of 12 cents/kWh the cost of energy in 2017.² If the EEPs framework stipulates that the TRC test is the primary criterion for determining whether EE is cost effective, then the Commission should consider the Societal Cost Test replace it in the framework.

A ratepayer impact test should also be included to ensure that rate payers are fully considered in cost-effectiveness test consideration.

In discussing data sources for market and other contributing entities, data from military energy efficiency projects should be on the research list.

Much of military EE impacts were already captured in through their participation in Hawaii Energy programs.

Other sources of reporting or mandatory reporting include: counties, state government and federal agencies.

² Correction from Tim Blume, KIUC (10/12/16): ‘Instead of “...Power Purchase Agreement (PPA) prices seen”, this should read “...cost of energy in 2017”. I think I remember mentioning our recent PPA deals and potentially future even-lower-priced PPA deals (the most recent one was signed at \$0.11080/kWh) in the context of lowered energy cost over time; but our modeled average cost of energy in 2017 (based on current generation portfolio, current fuel and PP costs, generation requirements, and dispatch scenarios) is around \$0.12200/kWh. Important note: since costs are fairly flat across the entire 24 hour period, KIUC’s incremental/marginal costs are roughly the same as the average costs.’

We need to tap industry allies to get sales data for appliances etc. He proposed joining trade associations to get that data.

This is an area we should talk more about. Do we need to spend the money through the PBF or perhaps other ways to get impacts?

We should also review the interim goals to see if timing and amounts of the interim goals are still appropriate.

We should be looking at savings on annual basis when re-assessing EEPS goals.

There are nuanced questions that will be looked at about the interplay between the cumulative savings goal as described in the legislation and how savings are being tracked with the current metrics.

There are complexities around cumulative savings tracking and that factors such as effective measure life and other measure characteristics factor in to the accounting.

While there are different ways to consider metrics and accounting, at a minimum the legislation was clear that 4,300 GWh is the stipulated goal and that the Commission needs to make sure that at a minimum it can document that 4,300 GWh are demonstrably saved through the EEPS program by 2030 or look at whether the goals need to be adjusted.

The EEM team presented the one page schedule (Gantt chart) to the attendees to further describe the draft schedule for the four EEPS review research tracks.

Stakeholders would like to see the conversation about what the goals really are happen sooner than proposed in Track 4.

*The EEM team attempted to capture all substantive, unique suggestions for research questions from the discussion above. It is likely that some comments may have been missed during the note taking process. Corrections are welcome.

Hawai'i Electricity Trends and Forecast:

MECO presented slides depicting past energy sales trends and forecast through 2030 (for the combined Hawaiian Electric Companies, designated as HECO in these notes).

The projected decline in HECO's long term forecast is due to EE, conservation and DER adoption. Economic factors like recession (in prior years) and high fuel prices also affect actual electricity use and forecasts of future demand. HECO's graph showing electricity use and forecasts include HECO energy efficiency programs from 1996 to July 2009 then Hawaii Energy's programs from 2009 forward. Savings implemented on January 1, 2009 or thereafter count toward EEPS goals (therefore savings from the prior programs do not count toward EEPS goals,

noting that HECO ran programs for the first six months of 2009 before Hawaii Energy took over).

HECO projections use the following method for showing EE in past sales and future sales (annual electricity demand) projections. HECO reconstructs electricity sales as if no EE occurred and then adds then reduces forecasts for historical and future EE. This analytic method allows forecasters to directly reflect EE in past sales and in forecasts. In other words, this method is used because it backs EE savings out historic sales. Otherwise, EE effects are embedded in the historic sales numbers because existing EE has reduced use/sales. This method does require quality information about EE impacts (past) and forecasts of future EE. The HECO forecasts assume no decay of EE savings once measures reach their effective useful life (EUL). HECO uses projections for Hawaii Energy programs but these do not go out very far (a year or couple of years). For years beyond that, the HECO forecasts use EEPS goals to represent EE effects. The HECO forecasts go out to 2045.

HECO would really like to see/have:

- EE information with load shapes to enable planning for peaks in load (ideally with locational information)
- An updated EE potential study
- Baseline surveys
- A database to track and report impacts from various sources
- And where needed to borrow studies from other utilities.

KIUC presented slides addressing energy trends in KIUC territory.

KIUC is wrestling with how to handle additional air conditioning (AC) loads. There are increasingly more units in place and the weather has been getting hotter. KIUC planners are still working on approaches to handle this information in forecasts/planning. The increase in AC is mostly in the residential sector. KIUC does 10 year forecasts, and plans to meet future load mostly with DERs and PPAs. Even given the increase in AC, KIUC load has been dropping; rates are also dropping. KIUC has negotiated very good PPA rates. By 2019/2020 they will be 70% or so clean/renewable electricity. They have a lot of hydro generation there are regulatory (etc.) hoops to jump through with hydro.

Summary of discussion:

Demand response (DR) is part of the forecasts and if not whether it should be. The utilities respond that in order to properly value DR, it is not included in demand forecasts (peak) since it is a tool for managing peak demand and providing ancillary services.

Is real-time/dynamic pricing is (or should be) incorporated into the forecasts?

HECO is creating sales and peak forecasts but without knowing when DR will be deployed the process is iterative. They don't make assumptions about how DR will be used. Rather, they

make forecasts then use DR to meet the forecast. Also, at this time, HECO forecast is not in 8760 format (meaning for each hour of the year, 8760 hours total) although HECO is planning to move to hourly forecasts.

During the upcoming EEPS review, past EE accomplishments are important. While what has happened is important but changes going forward are also important.

Next Steps/Wrap Up:

The EEM team thanked participant for their participation and the presenters for their contributions, as well as Hawaii Energy for hosting the meeting.

Next steps for the TWG process:

1. The EEM team will send out a meeting summary together with the research questions already distributed asking for stakeholder comments on the notes and any additional input they would like to add.
2. The EEM team, with input from Commission will, then finalize the EEPS Review Plan in light of the input collected from the TWG meeting and subsequent written comments.
3. A follow up TWG (potentially via phone) meeting will be scheduled for late in the year or early in 2018.

Appendix 1: Meeting Attendees

Attendees (in person) and (please note this list may not be complete)

Ted Pope, EEM
Clarice Shaffer, PUC
Ashley Norman, PUC
Yvette Maskrey, Honeywell
Dave Rolf, HADA
Chris Ann Dickerson, EEM
Tim Blume, KIUC
Dave Parsons, PUC
Erik Kvam, Reach
Caroline Carl, Hawaii Energy
Valerie Kubota, HGIA
James McCay, Ameresco
Brian Kealoah, Hawaii Energy
Sehun Nakama, Hawaii Energy
Alan Okimoto, HSEO/DBEDT
Sherilyn Wee, DCA
Tom Kawal, Hawaii Energy
Todd Kanja, HECO
Melissa Miyashiro, Blue Planet
Debbie Santiago, KIUC
Jennifer Baker, HECO
Michael Chang , HECO

Attendees by Phone/Webcast (may not be complete)

Y. Kamita, DCCA
Frederick Redell, HECO?
Mike Ito
Therese Klaty, MECO
Jeremy Eddy, Opinion Dynamics Corporation
George Willoughby, HECO

Agenda

- 2:30 PM Welcome/Introductions/Agenda Review
- 2:40 PM Commission Welcome Comments
- 2:50 PM EEPS Background—Legislative and Regulatory Framework for EEPS
- 3:05 PM EEPS Review Process Overview
- 3:20 PM --Break--
- 3:35 PM Hawai'i Electricity Trends and Forecast
- 4:05 PM --Quick Break--
- 4:10 PM Stakeholder “Hopes and Dreams” for EEPS
- 5:00 PM Stakeholder Input on Research Scope and Questions
- 5:20 PM Next Steps/Meeting Wrap Up

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Note: due to technical difficulties with webcasting platform and resulting delay of the early presentations, the Hawai'i Electricity Trends and Forecast discussion was moved after the “Hopes and Dreams” and “Research Scope and Questions” topics.

Appendix 3: Imagines from Whiteboard Showing Ordering Of Issues by EEPS Review Research Track Number

