

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

**Meeting Summary**

Wednesday February 28, 2018  
11:00 AM to 12:30 PM<sup>1</sup>  
1132 Bishop Street, Suite 601  
Honolulu, Hawai'i

**11:05 AM Review of Fall TWG Meeting, EEPS Review Plan, and Progress**  
Chris Ann Dickerson (EEM team)

*[See presentation slides for more information/context to notes below as well notes from September 27, 2017 TWG]*

Provided highlights from the TWG meeting to launch the current EEPS review held on September 27, 2017, including:

- Review of EEPS law and history briefly
- Review of the four track approach proposed for the EEPS review
- Review of the highlights of September presentations from HECO and KIUC on the role of energy efficiency in resource planning
- Reminder to stakeholders of the summary of TWG “Hopes and Dreams” for the EEPS Review developed in previous TWG meeting and available in the notes.

**11:20 AM EEPS Goals in a DER Environment: Initial Concepts --** Chris Ann Dickerson

*[See presentation slides for more information/context to notes below]*

- EEPS Goals were developed in a binary construct – electricity supplied by utility or offset by efficiency.
- Electricity supply is no longer binary. It comes from utility, self-generation for consumption at site, self-generated by customers put supplied to grid, etc.
- Each of these types of electricity supply have different avoided costs and they vary by hour, day, season.
- Energy efficiency is valued on the basis of avoided utility cost, so the value of energy efficiency is becoming highly variable in the new paradigm.
- Energy efficiency still offers value to customers who need to buy less electricity because they have installed energy efficient measures

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<sup>1</sup> This TWG meeting followed a meeting of the Hawaii Energy Technical Advisory Group (TAG) in the same location 9:00 AM – 10:30 AM.

- Even in later years, when utility supply is based increasingly on renewable sources, energy efficiency will benefit customers who buy less electricity after installing energy efficient measures
- However, as the electric supply becomes greener and more distributed, system benefits as reflected in the traditional metric of “avoided costs of electricity supply” are less clear, especially in the mid- and outer-years of the EEPS implementation horizon
- Since EEPS policies are designed to facilitate a trajectory toward a long-term goal, it is important for the EEPS review to reflect changes in the electricity system in long-term policy but to not lose sight of the benefits of energy efficiency.

### **11:30 AM TWG Discussion Track 1 – Regulatory, Programmatic and Policy Environment for EEPS Review**

#### **Moderator Context setting**

- The fundamental goal of the Hawaii Clean Energy Initiative (HCEI) and Energy Efficiency Portfolio Standard (EEPS) was to reduce reliance on imported oil and as part of that overall objective, generate electricity using local, renewable resources.
- The EEPS goals are based on energy (kWh) not capacity (kW). The system value of energy efficiency is different in an environment with renewable supply and DERs than it was when 100 percent of the electricity was supplied by utilities burning imported oil.
- Benefits to the state envisioned as a result from HCEI, in particular, EEPS, may need to be re-envisioned during this EEPS review or possibly a subsequent EEPS review.
- RPS goals require 100% clean energy by 2045 but projections indicate that the RPS goal will be achieved a bit earlier in both HECO and KIUC service territories.
- Program participants who install energy efficient measures will save money when they spend less on their bills than they would have done in the base case, whether the avoided supply is based on fossil or renewable generation.
- Not all customers have equal access to DERs – hard to reach customers (residential and business) and ALICE customers (above the poverty line but not by very much) have less ability to modify the amount of electricity they need to buy from utilities by installing DERs
- HECO and Hawaii Energy are currently working together and with the Electric Power Research Institute (EPRI) regarding forecasting, implementing and evaluating demand-side activities using information containing locational and temporal characteristics.
- The “temporal” properties encompass at least two dimensions:
  - Load shapes for the energy efficient measure showing the time of day that the measure is saving electricity vs. baseline equipment (time of day and if possible time of day with seasonal breakouts).

- It is necessary to have indications regarding when the efficient measures will be installed at a particular location.
- If the value of energy efficiency is based on the value of energy supply that is saved or “offset” the value is becoming blurry or ill defined. In some cases, state policies can be at odds with one another.

## **Post-PY2018 perspectives on PBF energy efficiency portfolio – Hawai’i Energy**

*[see Hawaii Energy presentation slides]*

- House Bill 2248, being considered in the current session of the Hawaii State Legislature proposes to adopt appliance and equipment efficiency standards consistent with California’s standards.
- California has sufficient market power to drive manufacturers to produce appliances and equipment that meet their code. Although Hawaii by itself is not sizable enough to be a market-maker, Hawaii can leverage California’s efforts by adopting the same (or similar) standards.
- Language in Bill 2248 highlights the value of savings that would accrue to the people and businesses in Hawaii if incoming appliances and equipment used less electricity and thus cost less to operate.
- Also, since the state is comprised of islands, imported appliances and equipment tend to stay in the state. This is different than in mainland areas where appliances and equipment can more easily be exchanged across state borders and markets.
- Hawaii Energy works on an ongoing basis with appliance and equipment suppliers and (as applicable) manufacturers to ensure that inefficient equipment isn’t “dumped” in Hawaii in situations where other states/jurisdictions require energy efficient units and as a result, leftover inefficient units are shipped to states/jurisdictions with lower standards.
- Hawaii Energy has been planning their programs to reflect changes in lighting baselines as the EISA standards that ratchet upward in 2020. (Codes and standards that take effect after January 1, 2009 count toward EEPS so the effects of EISA standards count toward EEPS.
- The Hawaii Energy programs only provide incentives/market support for technologies above current codes/standards and/or above general market baselines.
  - Need to consider whether “DR-ready” incentives can be offered by programs.
  - With respect to “grid support” actions, Hawaii Energy needs more direction on to what extent they can message across technologies and DER types.
- Need to address the residential/commercial split. More is spent on commercial and collections should be reconsidered to support that reality.

## Participant Comments During Appliance Standards Discussion

- In California, the California Energy Commission is responsible for designing and implementing building codes, and appliance and equipment standards. However, California Public Utilities Commission encourages the investor-owned utilities (the primary implementers of energy efficiency programs) to assist the Energy Commission with codes and standards development and implementation. The utilities are allowed to spend portions of their energy efficiency budgets to support codes and standards, and to count a percentage the savings from codes and standards toward their annual energy efficiency goals.
- In California these investments are extremely cost-effective. About 50% of the utility energy efficiency programs' annual savings derives from their support for building codes and appliance standards (about half of that for appliance standards alone). But the expenditures for code and standard support are low – about 2%-3% of the annual investor-owned utilities' energy efficiency program budgets.
- Currently, HECO is using estimates from the Commission's 2014 energy efficiency potential study to represent effects from codes and standards that promote energy efficiency.
- The County of Hawaii wants to stand up a data management technique. This could serve as a model for other counties and possibly for statewide tracking.
- The appliance and equipment standards contemplated by House Bill 2248 would also save water and provide other benefits.
- In theory the standards could include requirements or preferences for demand response readiness and other features that would enhance grid support. Need to investigate HB 2248 language to determine whether such requirements are included in the current draft. Also, it would be useful to determine if there is precedent, i.e., in California or elsewhere, for these types of requirements.
- Fifteen other states have standards for energy efficiency and water efficiency. None of the other states had to recreate the infrastructure of CA. Implementation is as simple and low cost as maintaining a list of qualified products which can be borrowed from California if using their standards. Vermont is an example of very cost implementation. The cost is close to zero.
- Start small leveraging other state standards and build from there, if desired.
- Interest expressed in whether state standards can address “on-board intelligence” of products.
- A codes logic model for Hawai'i Energy seems like a good idea.
- Concern expressed about backsliding of standards and possible dumping of lower performance whitegoods in Hawai'i where they will be stuck.

## Participant Comments During Other TWG Topical Discussions:

- It will be necessary to effectively coordinate activities, programs, policies and data between PUC/Hawaii Energy and the DBEDT State Energy Office (and other organizations, e.g., the utilities as needed).
- Data clarity and quality is an important characteristic that must be supported by specific resources devoted to that purpose; assuming that useful data developed as a byproduct of other activity is not sufficient for long-term planning and analysis.
- Data on a wide variety of topics is needed in general for developing statewide policies and reporting statewide activities (including breakouts for certain areas, customer-types, etc.). These data are not limited to energy efficiency accomplishments.
- TWG needs to consider approaches to organizing and synthesizing these data, developing similar terminology and planning assumptions, and processes to house and store useful data for long-term reference.
- “In addition to coordinating data collection, definitions and sources, TWG must think carefully about metrics that are not yet captured but should be.
- The effects of behavior modification programs and market transformation programs/activities tend to be overlooked, yet these programs can have significant impacts. How can the effects of these programs be reflected for purposes of EEPS?
- What metrics not-yet-imagined should be identified, measured and tracked?
- GEMS programs are designed primarily to help hard to reach residential customers with energy efficiency, solar-thermal measures and solar PV.
  - GEMS activities for business customers needs additional funding.
  - Tracking GEMS impacts, alone and together with impacts from Hawaii Energy and other activities that promote energy efficiency will highlight questions regarding whether, and the degree to which it is possible to characterize and measure energy efficiency impacts in a context where distributed energy provides a significant share of electricity, at least in certain identifiable customer sectors/segments.
- The objectives for energy efficiency have become blurry and complex. There is now a conflict between energy efficiency and renewables. KIUC will be at 80% renewables by 2022. They are already curtailing PV generation. What is the value of efficiency during curtailment? In this context, we need to clarify the objectives for energy efficiency to get it right.
- Doesn't the price of electricity itself drives efficiency to the extent appropriate? On the mainland customer purchases \$1300 kWh/month here it's \$500. What does appliance efficiency accomplish in this context?
- There is more to energy use than a bill. With pricing coming down, high penetration of fixed price solar has reduced fixed price. As a result, cooling is being introduced. People are using more power and that is providing a social and economic good, expanded security. More energy use is a good thing as long as it is green.

- There are lots of questions and challenges relating to forecasting demand. It used to be pretty easy. Now hourly load shapes of equipment and DERs are important.
- The HECO forecast goes out to 2045 and there is no EEPS goal beyond 2030. Not clear how energy efficiency should be forecasted beyond 2030. Should there be a new further out EEPS goal? This should be considered.
- People think of DR as addressing system peak issues, but that is a narrow interpretation. We should be looking more broadly at how DR can support the grid on a year-round basis. Giving control of DR to the operators of the grid allows embracing the notion of DR as a tool for flexibility. What is the objective for energy efficiency versus other DERs? Flexibility is becoming more important to grid operation. Ideally, we would be doing IDSM to avoid conflicts at the device level.
- It is a good time for the Commission to consider during the EEPS review what we have achieved and where things are going and the issues raised are good topics for consideration in that review.
- The EEM should update the one-page EEPS Review Summary schedule page to reflect changes in the schedule that is driving by the timing of the hiring of the EEPS EM&V contractor.