

## IGP Stakeholder Technical Working Group Meeting

Thursday, September 23, 2021

10:00am - 12:00pm

WebEx

### Attendees

#### WebEx

Marc Asano, HE  
Christopher Lau, HE  
Therese Klaty, HE  
Eli Morris, AEG  
Ken Walter, AEG  
Andy Hoke, NREL  
Ashley Norman, HPUC  
Barry Usagawa, BOWS  
Brian Kealoha, Hawai'i Energy  
Caroline Carl, Hawai'i Energy  
Clarice Schafer, HPUC  
David Parsons, HPUC  
Dean Nishina, DCA  
Debbie Lew, ESIG  
Genevieve Lillis, RMI  
Gerald Sumida, Carlsmith Ball  
Gina Yi, HPUC  
Grace Relf, HPUC  
Henry Curtis, LOL  
Jacqui Hoover, HIEDB  
Jeremy Laundergan, EnerNex  
Keith Yamanaka, DoD  
Kevin Schneider, PNNL  
Kirsten Turner, HSEO  
Kit Batten, ASU  
Kylie Wager Cruz, Earthjustice  
Mac Wodicker, ASU  
Marcey Chang, DCA  
Matthias Fripp, Ulupono  
Mike Wallerstein, HPUC  
Natalie Frick, LBNL  
Paul De Martini, Newport Consulting  
Pete Polonsky, HPUC  
Rene Kamita, DCA  
Richard Rocheleau, HNEI  
Robert Harris, Sunrun  
Rocky Mould, HSEA  
Samantha Ruiz, HPUC  
Sherilyn Hayashida, DCA  
Stephen Mariani, HPUC  
Steven Rymsha, Sunrun  
Ted Pope, 2050 Partners  
Terry Surles, HNEI  
Yvette Maskrey, Honeywell  
Ken Aramaki, HE  
Li Yu, HE  
Christopher Kinoshita, HE  
Abel Siu Ho, HE  
Collin Au, HE  
Amanda Yano, HE  
Brian Lam, HE  
Robert Uyeunten, HE  
Anne Fuller, HE  
Jeslyn Kawabata, HE  
Alyssa Nada, HE  
Kent Kurashima, HE  
Shuk Han Chan, HE  
Kolter Kalberg, HE  
Jennifer Baker, HE  
Nathan Todaro, HE  
Peter Young, HE  
Jeremy Kwock, HE

## Agenda

- Discuss the results of our TOU Adoption Evaluation for Non-DER/-EV customers
- Continue discussion with AEG regarding the Energy Efficiency Supply Curves (AEG)

## Discussion

### TOU Adoption for Non-DER/-EV Customers Evaluation

- I. Stakeholder: Is the low TOU forecast based on an assumption that a large number of customers have DERs?
  - a. HE: Yes but we assumed a 25% opt-out rate.
- II. Stakeholder: Is there going to be a later discussion how TOU impacts DER customers?
  - a. HE: The “Comparison of Load Shift Impacts – Oahu” chart shows customers who are assumed to be shifting load via their batteries.
  - b. HE: Uncertainty around whether future rate designs may have an incremental effect on battery sizing is captured in the range of DER scenarios.
- III. Stakeholder: Why limit the range of the price differential? Have you looked at cell phone price differentials?
  - a. HE: No, we haven’t looked into applying a cell phone type of price differential. There is a fundamental difference in flexibility of when a customer makes a phone call versus when a customer needs to consume electricity. However, we can apply the elasticity to different price differentials. For instance, applying the elasticity to the price differential in the DER Parties’ final proposal could result in a maximum peak period reduction of around 20 MW. But with larger price differentials, if customers see their bills go up and can’t adjust their load, we might see more customers opt out of the TOU rate.
- IV. Stakeholder: What were the underlying rate assumptions over the various time periods?
  - a. HE: The underlying rates tie to the Hawaiian Electric Companies’ Initial ARD (Advanced Rate Design) proposal filed in December 2020. The Companies’ Final Proposal filed in March 2021 did not modify the rates that were proposed in the Initial Proposal.
- V. HE: The reductions we’re discussing are the maximum potential during the peak period of 5-10pm. That’s not necessarily coincident with the annual peak hour.
- VI. Stakeholder: How big are the day/night price differences in the ARD proposal? Do those reflect the expected difference in production cost at those times (low cost solar vs. high-cost storage/ biofuels)? Would you see a bigger load shift with bigger price differences?
  - a. HE: The ARDS rate differentials reflect the difference in average production costs at those times (but not the difference in marginal costs) plus a difference in allocation of some portion of fixed costs.
  - b. Stakeholder: If the savings moving from night-to-day is 15 cents/kWh, why is that not reflected in the price differential?
    - i. HE: Difference in approach, our approach is intended to be revenue neutral. Pricing at marginal costs create other challenges, both in rate



reference for residential elasticity but don't have something similar for commercial.

- XV. Stakeholder: Is the 1% overall load reduction included from the SMUD study?
  - a. HE: No, we did not include an overall energy consumption reduction. While SMUD saw an overall load reduction, NV Energy and KICU did not.
- XVI. Stakeholder: HECO's proposal also includes a customer charge of \$14/month and demand charge of \$3/kW.
- XVII. HE: Residential demand charge applies only to new residential DER customers in the Company's ARD proposal.
- XVIII. Stakeholder: When you say that the reduction and load shift is "immaterial", can you elaborate a bit more on how that is defined? Does this mean no benefit/value to the system?
  - a. HE: This goes back to the bookend discussion, there is quite a bit of load shifting occurring during the evening peak. The additional peak reduction from TOU is within the noise of everything else going on in the forecast. From a system perspective, that load shifting will help determine the grid needs after accounting for what the customers will do with TOU, batteries, EVs. Rates and programs will then have to encourage that amount of load shifting.
  - b. Stakeholder: What do you mean by its counted in the noise of the bookends? It would seem that adding a layer for TOU Non-DER/-EV customers is additive, there should be a noticeable difference?
    - i. HE: If the base case added a 6 MW load reduction for non-DER TOU, that 6 MW load reduction does not make a significant or material impact. Between the base and the high load forecasts, there is probably already a significant difference.
    - ii. Stakeholder: In my opinion, it would be a good idea to add the layers for TOU. DER Parties bookend as the high, and HE proposal as the low.
- XIX. Stakeholder: Have you looked into comparing Hawaii's MW peak reduction to studies done in other jurisdictions?
- XX. Stakeholder: Suggestion to use the SMUD study for commercial TOU.
  - a. HE: We'd need to be careful to not apply an elasticity from residential customers to commercial loads.
- XXI. Stakeholder: Would the estimated DER/BESS reduction be the same without TOU?
  - a. HE: It would be captured within the range of forecasts in the assumptions.
- XXII. Stakeholder: Military installation profile is driven by residential loads and peaks in the evening even more with more PV being added. The drivers to encourage load shifting will be unique. We are currently driven by demand charges.
- XXIII. Stakeholder: How do industrial loads play into the analysis?
  - a. HE: Industrial loads play a small role in our islands' load forecasts, in comparison to the mainland.

### **AEG EE Supply Curves**

- I. AEG: From the potential study perspective, a 20 year measure life expires, and it's a new purchase decision at that point. It won't increase the cumulative potential. Original potential had repurchases included. This was removed for IGP so we weren't double counting.
- II. Stakeholder: Is this residential exclusively? And what is the financial scaling factor? Equivalent to inflation?
  - a. AEG: No, this considers all measures. The scaling factor was for inflation to show nominal values, but there are not used in our model.
- III. Stakeholder: Is it possible to provide further information on the bundles?
  - a. AEG: We took every measure from the potential study and assigned it to a category (peak or other) using the ratio of peak impact to flat shapes based on the measure load shapes developed for the statewide potential study for the PUC and grouped by estimated cost effectiveness. There are similar but not identical impacts for the different islands.
- IV. Stakeholder: LED's might persist and not be more efficient 20 years from now, but other appliances like refrigerators or air conditioners increase in efficiency as newer products come out. So are you saying that isn't accounted for?
  - a. AEG: We discussed this possibility with HECO. While it is possible that the repurchased equipment in 2040+ may be slightly more efficient than what was initially purchased, the increases based on currently available technology data are minimal. Most improvements in energy efficiency will be in the near-term. We're taking a more conservative approach to not account for repurchases to not overstate the potential or speculate on new technology improvements that are not yet known.
- V. Stakeholder: Why wouldn't you include additional bundles for specific energy efficiency technologies? You're showing cooling as being a main driver. Why not adjust the analysis for potential new technologies that could have greater impacts?
  - a. AEG: Improvements in average efficiency or likely future technology options expected/known at this time are included in the potential study. Without a market disruption, purchases reach a steady state.
- VI. Stakeholder: What is the best way to provide comments on the EE supply curves?
  - a. HE: Comments may be emailed to [igp@hawaiianelectric.com](mailto:igp@hawaiianelectric.com).

## Next Steps

- Stakeholders may provide feedback on today's discussion to [IGP@hawaiianelectric.com](mailto:IGP@hawaiianelectric.com)