

IGP Stakeholder Technical Working Group Meeting

Tuesday, September 7, 2021

11:00am - 1:00pm

WebEx

Attendees

WebEx

Marc Asano, HE
Christopher Lau, HE
Colton Ching, HE
Ken Walter, AEG
Eli Morris, AEG
Andy Hoke, NREL
Clarice Schafer, HPUC
Dean Nishina, DCA
Douglass Adams, CoH
Genevieve Lillis, RMI
Gerald Sumida, Carlsmith Ball
Gina Yi, HPUC
Grace Relf, HPUC
Jeff Burke, APS
Jeremy Laundergan, EnerNex
Jessie Ciulla, RMI
Keith Yamanaka, DoD
Kevin Schneider, PNNL
Kirsten Turner, HSEO
Kit Batten, ASU
Kylie Cruz, Earthjustice
Lisa Hiraoka, DCA
Marcey Chang, DCA
Maria Tome, HSEO
Matthias Fripp, Ulupono
Mike Wallerstein, HPUC
Murray Clay, Ulupono
Noelani Kalipi, Progression HI Offshore
Wind
Pete Polonsky, HPUC
Rene Kamita, DCA
Rick Rocheleau, HNEI
Riley Saito, CoH
Rod Aoki
Scott Glen, HSEO
Sherilyn Hayashida, DCA
Stephen Mariani, HPUC
Steven Rymsha, Sunrun
Terry Surles, HNEI
Wren Wescoatt, Progression HI Offshore
Wind
Ken Aramaki, HE
Alan Hirayama, HE
Christopher Kinoshita, HE
Abel Siu Ho, HE
Collin Au, HE
Amanda Yano, HE
Brian Lam, HE
Ryan Murai, HE
Robert Uyeunten, HE
Talin Sokugawa, HE
Therese Klaty, HE
Anne Fuller, HE
Jeslyn Kawabata, HE
Alyssa Nada, HE
Kent Kurashima, HE
Shuk Han Chan, HE
Lisa Dangelmaier, HE
Shannon Putnam, HE
Kurt Tsue, HE
Nick Paslay, HE
Chie Reyes, HE
Kolter Kalberg, HE
Leland Cockcroft, HE

Agenda

- Walk through the Inputs and Assumptions filing and provide any clarifications or answer any questions the Parties may have
- Discuss the upcoming schedule of meetings

Discussion

PV and Wind Resource Assumptions

- I. Stakeholder: Can a percentage of DoD lands be included instead of all in or out?
 - a. HE: We would need a GIS layer to define where those included DoD lands would be located.
- II. Stakeholder: How are costs on higher slopes being accounted for? Is there a range to indicate what the cost adder would be?
 - a. HE: A cost adder could be incorporated into the resource cost.
 - b. Stakeholder: After further discussions with developers, our revised study is looking at 20-25% slopes with a 5-7 cents/watt adder.

Forecasts/Bookend Scenarios

- I. Stakeholder: What is the difference between the EV forecast and the TOU Load Shape columns in the Bookend scenarios?
 - a. HE: The EV forecasts are the load impact by itself. The TOU load shape under managed charging is taking that EV impact and reshaping it.
- II. Stakeholder: Have you modeled TOU for DER customers?
 - a. HE: No but we will be sharing the non-DER, non-EV TOU impacts at a future stakeholder meeting. The bill impact with TOU and without TOU for DER customers is not a material difference and wouldn't affect the DER uptake.
- III. Stakeholder: HE was looking into a faster customer technology adoption for energy efficiency, EVs, and DER uptake. Why wasn't it included in the August 3 filing?
 - a. HE: There is no difference in load between managed and unmanaged EV charging. The load shape differs between the two. The high load bookend will help us to identify the cost and resource plan impacts of high EV adoption, and the faster customer adoption scenario would fall under this bookend. The idea is to look at which combination of forecasts places the highest stress on the system.
 - b. HE: High EV adoption with unmanaged charging will have the highest grid impact. Additional analyses would be informed by the results of the bookends.
- IV. Stakeholder: Is the high forecast no longer the 30% increase in load but now a 100% saturation?
 - a. HE: Yes.
- V. Stakeholder: With the scenarios, are you looking at just the MW peak or MWh needs as well?

- a. HE: It's both. The DER PV + Battery shapes and EV managed and unmanaged charging shapes influence the time of day when resources are needed.
 - b. Stakeholder: Are you including hours in a day where the EVs are not charging?
 - c. HE: Yes, at different times of the day, the DER is serving the EV load, and at other times, it's not.
- VI. Stakeholder: Is the base case the most probable case between the bookends?
- a. HE: Yes, it's considered to be the set of forecasts most likely to happen.
- VII. Stakeholder: Regarding the emergency demand response (EDR) assumptions. In the low DER/No ITC cases, why is the EDR excluded? Is the low forecast meant to be a policy choice or model low enrollment?
- a. HE: For the low cases, yes, it could be looked at as low EDR customer adoption.
 - b. Stakeholder: In the filing, it looked like EDR was excluded completely. Should all forecasts show a gradual incline of EDR?
 - c. HE: To stress the forecasts, the low assumes self-consumption. It goes back to the question of, is the base case our best assumption, or the mid-range assumption? The low case would be business as usual without new EDR adoption.
- VIII. Stakeholder: On the workbook feedback, comparative statistics for the other load scenarios relative to the base would be helpful. Average, variance, max, min over planning horizon.
- IX. Stakeholder: Are the DER being modeled as load or a curtailable resource?
- a. HE: The export portion of the forecasted DER could be a resource.
 - b. Stakeholder: So primarily self consumption?
 - i. HE: Yes.

Work in Progress for Next Review Point

- I. Stakeholder: In the ERM testing, how is the demand response being incorporated?
 - a. HE: Demand response is modeled as a resource.
- II. Stakeholder: Would it be possible to add a demand response or energy efficiency shape to that ERM parameter?
 - a. HE: The base energy efficiency shape is included in the net load in RESOLVE. The demand response is modeled as a resource. The hourly dependable capacity (HDC) is meant to represent the dependable capacity from wind or PV based on historical production.
 - b. HE: The ERM testing is to see how the RESOLVE results change for different ERM target percentages. It's more significant for the retirement of units and what capacity is needed. Once we settle on a target percentage, the grid needs assessment can be run.
- III. Stakeholder: Why was the offshore wind sensitivity removed?
 - a. HE: In the land constrained scenario, we're going to reduce the land availability for solar and wind development. We will also remove biomass as an option. Offshore wind will be fully available in that scenario.

- b. Stakeholder: Why only that scenario? Offshore wind is the lowest cost option, shouldn't it be in all scenarios?
- c. HE: Yes, offshore wind is available in all scenarios. It may look more attractive in the land constrained scenario with the latest forecasts we've seen from NREL's Oahu offshore wind study.
- d. Stakeholder: What year is offshore wind available?
 - i. HE: We assumed 2030 as the first year available to build.
- e. Stakeholder: Tax credits should be assumed through the last qualifying year through safe harbor (i.e., 2035 for offshore wind).
- IV. Stakeholder: What is 2040 for the REZ?
 - a. HE: Just the year assumed for the load assumptions. There is capacity available that can be connected without upgrades. A larger amount would need transmission upgrades, taking at least 10 years.
- V. Stakeholder: Would this affect when different resources are available in different areas?
 - a. Potentially yes. The models would still allow solar and wind to be built.
- VI. Stakeholder: Recommend to not put the REZ ahead of the current processes already going on.

AEG Presentation

- I. Stakeholder: What is driving the jump in 2044 and 2045? Is it the RPS?
 - a. HE: These results are taken from the statewide potential study. The jump is due to end of equipment life and being discussed with HECO.
- II. Stakeholder: Regarding the "Cumulative Persistent Energy Savings through 2030, EEPS Perspective" figure. What are the assumptions going into the layers?
 - a. HE: What's being shown here is what is being assumed in the underlying forecast for energy efficiency. This assumes the business as usual and for the high it's the high achievable forecasts. There could be instances where there is some overlap, so we need to work that out to prevent double counting.

Future Meetings

- I. Stakeholder: When is the next meeting?
 - a. HE: The next STWG meeting is scheduled for 9/23/2021.
- II. Stakeholder: When do you anticipate having the results for the various analyses (e.g., DER hosting capacity, ERM, etc.) for stakeholders to review and discuss?
 - a. HE: Looking at the first week of November to respond to stakeholder comments. Targeting to have certain preliminary analyses done by October 1.
- III. Stakeholder: As inputs are reviewed and revised, are the analyses being done in parallel? Are there any potential bottlenecks?
 - a. HE: We are comfortable with the inputs that have been filed. Results of the REZ analysis could change the resource costs through the interconnection cost. EE supply curves will be a resource option in a future scenario. The goal now is to lock down the inputs and assumptions as much as possible to avoid creating

rework, identify items that can be addressed further down the process, and proceed with the analysis.

Next Steps

- Stakeholders may provide feedback on today's discussion to IGP@hawaiianelectric.com