IGP Solution Evaluation and Optimization Working Group (Meeting #13)
Friday, October 2, 2020
10:00am - 12:00pm
WebEx

Attendees

WebEx
Christopher Lau, HE
Dale Murdock, EnerNex
Marc Asano, HE
Roderick Go, E3
Ari Gold-Parker, E3
David Parsons, HPUC
Gerald Sumida, Carlsmith
Ball/Ulupono
Robert Harris, Sunrun
Alex de Roode, County of Maui
Dean Nishina, DCA
Derek Stenclik, Telos Energy
Jay Griffin, HPUC
Jennifer Potter, HPUC
David Parsons, HPUC
Gina Yi, HPUC
Grace Relf, HPUC
Clarice Schafer, HPUC
Jay Paul Lenker, HPUC
Mike Wallerstein, HPUC
Jacqui Hoover
Jeffrey Burke, Arizone Public Service
Jeremy Laundergan, EnerNex
Josh Steiner, Salt River Project
Kevin Schneider, PNNL
Kylie Wager Cruz, Blue Planet
Lisa Hiraoka, DCA
Marcey Chang, DCA
Matthew Richwine, Telos Energy
Michael Schwing, HSEO
Chris Yunker, HSEO
Molly Keleher, RMI
Murray Clay, Ulupono
Noelani Kalipi, Progression Energy
Paul De Martini, Newport Consulting
Pete Polonsky, HPUC
Rene Kamita, DCA
Keith Yamanaka, USAG-HI
Richard Rocheleau, HNEI
Rocky Mould, C&C
Honolulu
Robert Harris, Sunrun
Steven Rymsha, Sunrun
Terry Surles, HNEI
William Giese, HSEA
Yvette Maskrey, Honeywell
Domonique Farr, Salt River Project
Gerald Brooks, Missing Link
Brian Kealoha, Hawai‘i Energy
Dean Oshiro, HE
Therese Klaty, HE
Christopher Kinoshita, HE
Collin Au, HE
Amanda Yano, HE
Sorapong Khongnawang, HE
Brian Lam, HE
Christin Chang, HE
Isaac Kawahara, HE
Greg Shimokawa, HE
Earlynne Maile, HE
Daniel Lum, HE
Jennifer Zelko-Schlueter, HE
Joanne Ide, HE
Ken Aramaki, HE
Kurt Tsue, HE
Mahina Martin, HE
Nohea Hirahara, HE
Peter Young, HE
Meredith Chee, HE
Ari Gold-Parker, E3
Roderick Go, E3
Agenda

- Welcome and Ground Rules
- Discussion of RESOLVE Modeling Resource Plans
- Next Steps

Objectives for Today’s Meeting

- Solicit feedback on the inputs and assumptions document for IGP planning assumptions
- Solicit feedback on the preliminary model results produced by RESOLVE
  - We have conducted preliminary RESOLVE runs using the forecasts and assumptions developed in the FAWG and planning criteria previously discussed in the SEOWG to gain insight into how the planning inputs, assumptions, and modeling methods proposed for IGP lead to long-term resource plans.

Discussion

I. RESOLVE Resource Plans/ Summary of Results Methodology

II. Oahu Resource Plan

a. Stakeholder: Why is 2040 the first year that offshore wind is built?
   i. HECO: Offshore wind was available to be built from year 2030. The model chose to build the resource in year 2040.

b. Stakeholder: It seems a lot of synchronous condensers were built to provide inertia. Was there any consideration for fast-reacting inverters to supply that service?
   i. HECO: RESOLVE has a minimum inertia requirement to limit the maximum rate of change of frequency to 3 Hz/second and allow adequate time for FFR to respond. Separately, RESOLVE has a minimum FFR requirement based on the largest unit contingency that is adjusted for UFLS on Maui and Hawai’i Island.

c. Stakeholder: In the base case, when you have that something is “added” does that mean it comes online?
   i. HECO: The resource is online at the beginning of the year that it’s added.

d. Stakeholder: With regards to DER Freeze, are you assuming the existing DER are continued or end on their normal life cycle?
   i. HECO: Our assumption in RESOLVE is that the existing DER continues. The forecast includes a small amount of degradation over time.

e. Stakeholder: There was some mention of analysis with energy efficiency, are you modeling that as well?
   i. HECO: If folks are interested in seeing an energy efficiency freeze, then we could do a similar analysis.
   ii. Stakeholder: It appears that the DER Freeze case is identifying the avoided cost value of DERs, and so that can be used in program development.
f. Stakeholder: How will you folks utilize the existing and new thermal units? During an extreme weather event, it takes time to fire up these generators. How would you address maintaining these units over a long period of time?
   i. HECO: Less typical weather events would be accounted for as part of a future sensitivity.

g. Stakeholder: Why are thermal units considered to be resources that can be added beyond 2045. Should those still be an option?
   i. HECO: The planning horizons and forecasts continue until 2050. The thermal units shown are capable of diesel and biodiesel operation.
   ii. Stakeholder: Would all the thermal units be converted to biodiesel?
      1. HECO: Yes, the new resources and existing thermal units would convert to biodiesel in 2045.

h. Stakeholder: Keeping the steam units until 2050 is a huge concern in terms of reliability. If these units are not running, how are you able to utilize them in a major event? The DoD may look to build its own generation.
   i. HECO: We’ll need to consider the additional maintenance costs to maintain the thermal units until 2050.

i. Stakeholder: Biomass seems unlikely for Oahu. Are the LM6000 gas turbines going in combined cycle or simple cycle?
   i. HECO: For O‘ahu, we have a simple cycle CT and a 2-on-1 combined cycle as options for the LM6000. The model chose the 2-on-1 combined cycle.
   ii. Stakeholder: Is the model able to look at combined cycle, and put it in earlier to remove the oil fired units? Are we looking at any natural gas fuel sources and natural gas burning units?
      1. HECO: To clarify, the LM6000s are 2-on-1, two combustion turbines and one steam turbine. Natural gas was not considered as a fuel source in this analysis.
      2. Stakeholder: How do you anticipate storing fuel if it’s not natural gas? It sounds like these units will be used for contingency purposes, so how would you store the fuel for long periods of time and limited usage? We see this as an issue in resiliency plans.
      a. HECO: This is something that will need to be considered outside of the RESOLVE model.

III. Hawaii Island Resource Plan
   a. Stakeholder: Why are you taking a different approach for FFR and load shedding on the neighbor islands in comparison to Oahu?
      i. HECO: Oahu has stricter load shedding requirements than the neighbor islands.
      ii. Stakeholder: On Kauai, they removed their load shedding requirements because they have enough resources to provide FFR. It seems to be that you are limiting the market for DERs to provide these services. It’s one thing to ask customers to upgrade their inverters to provide FFR, but why
IV. Maui Resource Plan  
  a. Stakeholder: How is RESOLVE making the decision to build new units in comparison to retaining existing generation?  
    i. HECO: The model is comparing the costs of operating and maintaining existing generation to the cost of replacing existing generation with new resources.  
    ii. E3: The model is looking at the fixed costs to continue with existing units to serve the energy reserve margin, in comparison to building new resources.  
    iii. Stakeholder: Is the comparable cost for existing units zero?  
      1. E3: The model has to pay the fixed costs to keep the unit operating. It doesn’t necessarily cover the maintenance costs. There may be additional work to include those maintenance costs.

V. Lanai and Molokai Resource Plan  
  a. HECO: The model did not select biomass as a resource in the base case and therefore we did not include a no biomass scenario.

VI. Additional Comments  
  a. Stakeholder: Are you going to continue to do preliminary runs to look into the feedback received?  
    i. HECO: Yes, we’ll be taking into consideration the comments and firming up the input assumptions.  
  b. HECO: Are there ways for us to share this information so it’s easier to understand?  
    i. Stakeholder: Sure, it would be helpful to get a better understanding of what the outputs look like. It would be helpful to know what data you are looking at to create the presentation slides, and to understand your thought process behind the way the modeling is done.
Next Steps

- Continue working with the TAP to vet the concepts proposed in the SEOWG deliverable.
- Stakeholders can provide feedback on the Inputs and Assumptions document that was provided prior to this meeting.
- Feedback may be submitted to – IGP@hawaiianelectric.com, or Chris Lau christopher.lau@hawaiianelectric.com