IGP Solution Evaluation and Optimization Working Group (Meeting #10)

Monday, April 20, 2020
1:00pm - 3:00pm
WebEx

Attendees

WebEx

Christopher Lau, HE
Collin Au, HE
Vladimir Shvets, HE
Chie Reyes, HE
Dale Murdock, EnerNex
Roderick Go, E3
Aryeh Gold-Parker, E3
Paul DeMartini, Newport Consulting
Derek Stenclik, Telos Energy
David Parsons, HPUC
Jay-Paul Lenker, HPUC
Gina Yi, HPUC
Ashley Norman, HPUC
Clarice Schafer, HPUC
Grace Relf, HPUC
Mike Wallerstein, HPUC
Dean Nishina, DCA
Rene Kamita, DCA
D. Noelani Kalipi, Progression Energy
Wren Wescoatt, Progression HI Offshore Wind
Diwakar Tewari, Leidos
Gerald Sumida, Ulupono/ Carlsmith Ball
Jacqui Hoover, HIEDB
Jeremy Laundergan, EnerNex
Kurtis Kolnowski, Applied Energy Group
Matthew Richwine, Telos Energy
Michael Schwing, HSEO
Robert Harris, Sunrun
Steven Rymsha, Sunrun
Timothy Lueking, HE
Nicholas Miller, HickoryLedge LLC
Teena Rasmussen, Skog Rasmussen LLC
Ramsey Brown, Hawaii Energy
Christopher Kinoshita, HE
Amanda Yano, HE
Sorapong Khongnawang, HE
Brian Lam, HE
Ken Aramaki, HE
Marc Asano, HE
Meredith Chee, HE
Hsun Jou, HE
Joanne Ide, HE
Therese Klaty, HE
Anne Fuller, HE
Cathy Hazama, HE
Divesh Dhingra, HE
Ingrid Rohmund, Applied Energy Group
Yoh Kawanami, HE
Nohea Hirahara, HE
Robert Uyeunten, HE
Dean Oshiro, HE
Daniel Lum, HE
Richard Wang, HE
Isaac Lum, HE
Greg Shimokawa, HE
Isaac Kawahara, HE
Christin Chang, HE
Lisa Dangelmaier, HE
Leland Cockcroft, HE
Lisa Hiraoka, HE
Ellen Nashiwa, HE
Michael Ito, HE
Kolter Kalberg, HE

Agenda

- Welcome and Ground Rules
- Fuel Forecast Update
- Resource Cost Forecast Update
- Grid Needs Assessment Review
- Next Steps

Objectives for Today's Meeting

- Review Fuel Forecast for IGP
- Review updates to Resource Cost Forecast for IGP
- Review updates for Grid Needs Assessment

Discussion

I. Fuel Forecast for IGP

a. No Comments.

II. Resource Cost Forecast for IGP

a. No Comments.

III. Grid Needs Assessment Diagram

a. Stakeholder: Has any consideration been given to modeling the grid services on a smaller timeframe, such as minutely?
    i. HECO: The grid needs could be asked for as a minutely requirement. With the regulating reserve requirement, we would model on an hourly basis, but the needs would be defined on a minutely basis.
    ii. Stakeholder: With regards to the FFR requirement, procuring it on an hourly basis is fine, however on a minutely basis, if the resource is called upon multiple times, how will you be modeling that?
        1. HECO: We would take a look at the various services a resource could provide.
        2. Stakeholder: Interested in the operational aspect of the FFR in the model. Are you capturing the dispatchability of the resource in the model?
        3. HECO: We wouldn't necessarily model it on a minutely basis in the model. The resource would need to be available to meet an hourly FFR reserve.

b. Stakeholder: How will the benefit-cost analysis be used for resource selection?

i. HECO: This would apply in the evaluation – looking at the costs of procuring the resources, and the benefits being the sum of the avoided cost for each service the resource provides.

c. Stakeholder: Where are the grid services addressed in the model?
    i. HECO: For the regulating reserve we are taking the grid-scale PV, grid-scale wind, DER and load and analyzing the reserve for minute-to-minutely changes and taking three standard deviations to determine the hourly requirements. For FFR, we are working through a methodology that we can share at a later time for RESOLVE.
    ii. HECO: We're working to incorporate an inertia and FFR requirement in RESOLVE. Right now, we're creating a minimum inertia requirement in PSCAD and PSS\E models.
    iii. Stakeholder: Where does load build and load reduce come into play in the models?
        1. HECO: Load build and load reduce would require additional post processing to define. These are services that would be taken after the energy grid service.
    iv. Stakeholder: Wants to gain a clearer understanding of what models are being used, what they're being used for, and have a discussion of if this is the best method to evaluate grid services. Would like to know how baseline assumptions may or may not change in the process.
        1. HECO: The avoided cost is set by the marginal resource providing the service, and not all the resources in the model.
        2. Stakeholder: Interested in how those marginal resources would affect resource selection.

d. Stakeholder: When you're determining what the marginal resource is, is that based on must-run, or how is it determined?
    i. HECO: The model is determining the marginal resource based on cost. Having that resource in or out of the model can impact the overall cost.

e. Stakeholder: How would you come up with the costs for HECO steam units, and how will you determine if there are any must-runs on the system?
    i. HECO: We are still working on our assumptions for our existing thermal generation. For aging steam units, there may be impacts to costs and increased forced outage rates that would need to be considered.
    ii. Stakeholder: If you set a minimum inertia constraint, that could influence the types of inertia resources that the model selects.

iii. HECO: To clarify, a must-run unit might not produce MW, it could be a synchronous condenser that provides inertia and fault-current. We wouldn't limit it to just one type of resource.
iv. Stakeholder: How are the Stage 1 projects going to influence the inertia requirements?
v. HECO: For Stage 1 and Stage 2 RFP projects, we run the PSS\E and PSCAD models to observe the hourly operational behaviors and determine the inertia and FFR provisions. For example, if a battery has a minimum state of charge that can be used for grid services, then we would reserve a portion of it for that purpose. This is later validated in the Transmission Planning models.

f. Stakeholder: What happens at the end of the procurement, when projects get passed to the system security step? What if the system security analysis identifies issues, how will it be addressed? Please include more details in the diagram.
    i. HECO: By incorporating the system security needs at the beginning of the IGP process in the Needs Assessment step, we anticipate that we have procured the appropriate resources to meet the initial needs. However, if there are additional system security needs identified at the end of the process, we would need to iterate and make the appropriate adjustments.

IV. Additional Comments

a. Stakeholder: Are the grid services finalized, or will there be more discussion on the deliverable and/or in the working groups?
    i. HECO: Comments about the grid services can be submitted in the SEOWG deliverable.
    ii. Stakeholder: Concern that the grid services should have been discussed in earlier IGP Working Group meetings. Interested in understanding how the grid services were determined, the factors the apply – timeframe, resource types, etc. Would like to have more information about this.
b. Stakeholder: Would like to have transparency around the grid needs assessment and incorporate stakeholder feedback, what is the timeline on providing this documentation?
    i. HECO: We would align with the end of Stage 2 RFP, at the end of May 2020.
    ii. HECO: The RESOLVE model decides on the portfolio of resources, we don't control that decision manually. The model considers all the input

assumptions and then decides which projects to build. We will discuss this in more detail, but we are thinking about using these updated inputs and the same models in the CBRE and DER dockets.

c. Stakeholder: Is the March 16, 2020 SEOWG Outline draft the latest, or was there an updated version?
    i. HECO: Yes, that's the latest.
d. HECO: What details are you looking for to be included in the deliverable?
    i. Stakeholder: We would like to see clear inputs and transparency in the methodology used for the modeling. Also interested in the post-processing work that will be done. It would be beneficial to share this with the stakeholders.
e. Stakeholder: When you're thinking about the benefits, have you thought about any societal or non-grid benefits?
    i. HECO: Currently we are considering benefits that we can put a dollar to, we are not considering any non-dollar societal benefits.
f. Stakeholder: What is being contemplated here with regards to sharing the models, in comparison to California procurements?
    i. HECO: Are you suggesting we provide the models to stakeholders to run?
    ii. Stakeholder: It would be helpful at this point for us to see the models and be able to review them.
    iii. HECO: We have not contemplated releasing the models. However, we have been transparent with the modeling process by providing the inputs and the methodology we are using in the deliverable.
    iv. Stakeholder: We want to be able to see the models and make our own comparisons of the inputs and see if they are apples-to-apples. Perhaps then there wouldn't be a need for so many models.
    v. HECO: We will discuss this internally.
g. Stakeholder: Regarding the SEOWG deliverable, how many sensitivities would be a reasonable number to run?
    i. HECO: There's no real number, it depends on the stakeholder interest and what the modeling case would look like. There might be sensitivities that take more time to develop than others.
h. Stakeholder: What is the timeframe for the updated NREL Potential Study?
    i. HECO: Originally, we anticipated the work to begin in April 2020 and last about four months, however, there may be further delays due to COVID-19.
i. Stakeholder: What is the NREL study on?

i. HECO: In the PSIP, NREL determined the developable potentials for onshore wind and grid-scale PV for Oahu, Hawaii and Maui. For IGP, they will be revisiting the potentials for onshore wind, grid-scale PV, and rooftop solar across all 5 islands – Oahu, Hawaii, Maui, Molokai, and Lanai.

j. HECO: If we are able to determine the potentials for rooftop solar, how much of that identified capacity can be realistically met by DER? Should we stage the procurement in MW over time? What are your thoughts?
   i. Stakeholder: It would first be addressed with developing a long-term DER program.
   ii. Stakeholder: Thought that there was a long-term DER forecast already being assumed? We should probably stick with that in RESOLVE as a starting point we can use.

k. HECO: The current Stage 2 procurements and the upcoming CBRE RFPs address much of the near-term needs within the next 5 years. It would be good to start thinking about the long-term RFPs and the long-term plan of how IGP will address the grid needs and what we would need, say by 2030.
   i. Stakeholder: This sounds like a good idea, to start taking the long-term projects more seriously and start aiming the procurement for them.

SEOWG Deliverables and Schedule

1. Finalize Resource Costs and Sensitivities Deliverables
2. Description of the optimization methodology to be used for proposed solutions that may address multiple resource/grid needs.
   - Due 6/1/2020 (to be informed by Stage 2 RFP).

Next Steps

- Feedback may be submitted to – IGP@hawaiianelectric.com, or Chris Lau christopher.lau@hawaiianelectric.com