California ISO

Stakeholder Comments Template

Energy Storage and Distributed Energy Resources (ESDER) Phase 4

This template has been created for submission of stakeholder comments on the Straw Proposal for ESDER Phase 4. The paper, stakeholder meeting presentation, and all information related to this initiative is located on the initiative webpage.

Upon completion of this template, please submit it to initiativecomments@caiso.com. Submissions are requested by close of business **May 17, 2019**.

Submitted by	Organization	Date Submitted
Maria Belenky	OhmConnect, Inc.	May 17, 2019

Please provide your organization's general comments on the following issues and answers to specific requests.

1. **Non-Generator Resource (NGR) model SOC parameter**

OhmConnect has no comment at this time.

2. **Bidding requirements for energy storage resources**

OhmConnect has no comment at this time.

3. **DR operational characteristics**

    a. Please provide comments on the CAISO's three options.

OhmConnect generally supports the CAISO's proposal to remove Option Three (Maximum Run Time Parameter) from consideration at this time. We are optimistic that Options One (Existing and Planned Functions) and Two (Minimum Load Cost) will be sufficient to address the existing challenge of the market systems repeatedly moving DR resources between their Pmin and Pmax.

4. **Variable output DR**

a. CAISO requests additional detail and reasoning from stakeholders who believe a more appropriate method exists for determining QC than applying an ELCC methodology.

OhmConnect appreciates the difficulty of accurately estimating the qualifying capacity (QC) of weather-sensitive and otherwise variable resources such as demand response. That said, we are not convinced that the ELCC methodology, as currently applied to wind and solar resources, is appropriate for demand response. At the very least, we do not believe stakeholders have enough understanding of how the ELCC would be calculated for DR resources to warrant recommending its adoption as a preferred QC estimation methodology to the CPUC. Before such a determination is made, we recommend the CAISO and/or the CPUC provide greater clarity around the ELCC methodology, including a detailed description and quantitative examples of how it would be calculated for demand response resources. While abundant information on ELCC exists for wind and solar, extrapolating from these materials presents serious questions for demand response providers (DRPs). These include:

- *How will the ELCC account for the heterogeneity of demand response?* Wind and solar technologies are generally more standardized than demand response. As such, adopting singular monthly ELCC values for all wind and all solar resources might make sense. Demand response, on the other hand, is incredibly diverse. Households behave very differently from commercial and industrial (C&I) customers (as evidenced, in particular, by the CAISO's adoption of different baseline methodologies) and technology-enabled DR for both customer classes can yield very different load impacts than purely behavioral approaches. We do not believe that a single ELCC value for demand response would be very instructive.
- *How will the ELCC account for the rapidly changing nature of demand response?* While technological advances continue to improve the performance of wind and solar resources, they do so gradually. Thus, an ELCC model is able to develop values year-ahead that can be applied to individual resources for months afterward. Performance of DR resources is highly dependent on customer behavior, adoption of DR-enabling technologies, and program characteristics such as incentive payments, which could change substantially throughout the year as DRPs evolve their programs. For some, this evolution might also happen gradually. For others, including OhmConnect, this happens frequently. It is likely that a value for August developed at the start of the year will no longer accurately represent that resource in the delivery month.
- *Is the ELCC appropriate for a resource with changing composition?* The Straw Proposal notes that, operationally, variable-output demand response resources are similar to wind and solar resources. However, there is at least one important and fundamental difference between the resources: a demand response resource can have an extremely fluid customer composition, whereas a wind or solar resource is effectively static. For example, OhmConnect, as a DRP to primarily residential customers, might enroll thousands of new customers throughout a year. These new customers, once registered in a resource, could increase that resource's performance capabilities by orders of magnitude. It is unclear whether an ELCC

model is equipped to handle such adjustments to the underlying composition of the demand response resource.

- *What is the "nameplate capacity" that would be applicable to each DR resource?* To OhmConnect's understanding, the ELCC is a percentage value that is applied to a variable generator's nameplate capacity. The result determines the QC of the resource. While the nameplate capacity for a wind and solar resource is readily available—it is a concrete value, a specific engineered parameter of the installation—this is not the case for DR resources. The "nameplate capacity"-equivalent for DR necessitates the implementation of a separate methodology. The resulting value is a best-possible approximation, not a certainty. Applying the ELCC method to de-rate this value, in effect, adds uncertainty on top of uncertainty. We are hard-pressed to understand how the resulting QC would be more useful than what is in place currently.

While OhmConnect cannot, at this point, support the adoption of the ELCC methodology to set the QC of DR, we agree that the variability of DR resources (and weather-sensitivity, in particular) needs improved treatment in the CAISO market. CAISO correctly notes that "the current qualifying capacity valuation for variable-output demand response does not accurately reflect what the resource can actually provide each hour, resources risk being assessed RAAIM penalties in hours they cannot bid all of their resource adequacy capacity".[1] We posit that this could be true *regardless* of how the original monthly QC value is set. Therefore, we recommend exploring improvements related to the market participation and must offer obligation of variable-output DR as an issue *independent* from the adoption of the ELCC for the purposes of calculating QC. Changes to the QC methodology for DR can then be considered in an appropriate CPUC proceeding.

b. CAISO requests stakeholder feedback on controls needed to ensure that forecasts accurately reflect a resource's capability.

OhmConnect has no comment at this time.

5. **Non-24x7 settlement of behind the meter NGR**
   a. As a behind the meter resource under the non-generator resource model, any wholesale market activity will affect the load forecast. How will load serving entities account for changes to their load forecast and scheduling due to real time market participation of behind the meter resources?
   b. How would a utility distribution company prevent settling a resource at the retail rate when the behind-the-meter device is participating in the wholesale market?

[1] ESDER 4 Straw Proposal, at p. 22.

c. If a behind-the-meter resource is settled only for wholesale market activity, what would prevent a resource from charging at a wholesale rate and discharging to provide retail or non-wholesale services? How would this accounting work?

OhmConnect has no comment at this time.

6. **Additional comments**

Please offer any other feedback your organization would like to provide from the topics discussed during the working group meeting.

OhmConnect has no additional comments at this time.