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 Revised 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 **November 12, 2019.**

Submitted by	Organization	Date Submitted
Luke Tougas *l.tougas@cleanenergyregresearch.com* *510.326.1931*	*California Efficiency + Demand Management Council*	*November 12, 2019*

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

The California Efficiency + Demand Management Council ("Council") appreciates the opportunity to provide comments in response to the CAISO's October 21, 2019 Revised Straw Proposal and October 28, 2019 stakeholder meeting. These comments are limited to the Variable-Output Demand Response proposal but the Council reserves the right to comment on other aspects of the ESDER 4 initiative in the future.

The Variable-Output Demand Response proposal is of significant concern to the Council and its members, and is more complicated than it may appear. As discussed below, the Council encourages the CAISO to create more opportunities to discuss the more technical aspects of this proposal to ensure a workable solution.

1. **End-of hour state-of-charge proposal**

   The Council reserves comment on this issue.

2. **Discussion of end-of-day state-of-charge**

   The Council reserves comment on this issue.

3. **Market power mitigation for storage resources**

   The Council reserves comment on this issue.

4. **Variable output demand response**

   ELCC Study

   Potential Flaws of an ELCC Factor

   The CAISO's premise for developing the Effective Load Carrying Capability (ELCC) factor for demand response (DR) resources – that Resource Adequacy (RA) capacity should be available in all hours of the day – is currently being considered in the RA Enhancements initiative which has neither been approved by the CAISO Board nor the CPUC, nor have relevant tariff revisions been approved by the FERC. Therefore, moving forward with this aspect of the ESDER 4 initiative should, at the very least, be delayed until this premise is formally adopted as policy.

   The Council would also like to highlight a potential flaw in the CAISO's ELCC proposal. Though an ELCC factor is meant to reflect the true capacity value of a resource to the system, there is little connection to the capacity's availability when it is needed. To use an example, if all DR resources are available only during the CAISO's Availability Assessment Hours (AAH), then their adjusted capacity value will presumably be lower than their Qualifying Capacity (QC) once the ELCC factor is applied. This ELCC-adjusted capacity value will reflect the DR resources' value in maintaining grid reliability when compared to a "perfect" generator with the same nameplate capacity, but the ELCC factor will do nothing to inform when the DR resources should be available. This is a relevant question given the CAISO's assertion that resources should be available in all hours, which seems to undermine the relevance of the AAHs.

   The Council requests that the CAISO address both of these points in its next presentation and next version of its straw proposal.

   Applicability of ELCC to Demand Response

   The Council believes that having DR resources be reliable and relied upon is important in maintaining the health of the grid. However, we continue to have concerns with the CAISO's apparent conflation of DR resources with intermittent resources such as wind and solar as justification for instituting an ELCC factor for DR resources. DR resources are fundamentally different than solar and wind, in that they are dispatchable when and where they are needed, whereas solar and wind are not. The CAISO is correct that DR capability is often dependent on exogenous conditions, but not all of these conditions are variable. The weather and temperature are indeed variable factors that may (but not always will) impact the capability of a DR resource; however, other factors cited by the CAISO such as product production are more predictable and are the result of an explicit and predictable decision made by the customer that generating load will result in greater economic benefit to them than reducing load. Regardless, DR providers

have demonstrated a long history of working with customers who are capable of managing the disruptions in their loads brought about by DR events. These capabilities are built into contractual agreements between the DR provider and the end customer. As such, the Council strongly disagrees with the CAISO's position regarding the uncertainty of DR resources.

The Council also disagrees with the CAISO's move to expand the application of its ELCC methodology to include non-variable DR that is use-limited (the CAISO uses the term "availability-limited"). Though the Council does not agree with the application of an ELCC factor to variable DR, the CAISO's reasoning for pursuing this is at least reasonably clear. However, this sudden expansion to non-variable use-limited DR is unsupported and warrants an explanation given that the CAISO has not proposed to apply an ELCC factor to other use-limited resources. This is especially relevant given the CAISO's statement that a resource's availability is a factor that impacts its ability to maintain system reliability.[1] If the CAISO believes this statement to be true then it should also subject all use-limited resources to an ELCC factor including hydro and those powered by fossil fuels.

DR Load Impact Protocols

The Council cautions that the CAISO may be operating under a misunderstanding of the DR Load Impact Protocols (LIP). Generally speaking, the DR LIPs are a set of guidelines for performing the ex post and ex ante load impact analyses for the IOUs' annual DR Load Impact Reports. These guidelines do not specify the exact methodology to be used for the analyses but they do direct how to address certain components of the analyses; they also include required scenarios and reporting guidelines. For forecasting, the LIPs are used to assess the load impact of an entire DR program (i.e. portfolio of resources with the same operating and availability requirements) and not individual resources, as the CAISO contends.

With this background, it is unclear how the current LIPs can be utilized to measure the performance of IOU DR programs at the resource level for the purpose of developing an ELCC factor. Unlike Demand Response Auction Mechanism (DRAM) resources, for instance, whose resource-level NQC levels are reported in the IOUs' monthly supply plans, IOU DR programs have no NQC value at the resource level. It would be helpful for the CAISO to clarify if and how resource performance is factored into the ELCC analysis. If resource-level performance is a factor, then the CAISO should explain how it intends to assess the performance of IOU DR programs. One suggestion would be to require the IOUs to include their own DR resources in their supply plans so the CAISO has resource-level NQC values against which to compare their performance.

If the CAISO continues to believe that a version of the LIPs should be used for developing an ELCC factor for DR resources, the Council recommends that the CAISO convene a series of technical workshops to discuss how this can be done and invite the participation of the members of the Demand Response Measurement & Evaluation Commission (DRMEC) which oversees the

[1] Revised Straw Proposal, at p.31

development of the annual DR Load Impact Reports so as to leverage their experience with load impact forecasting.

Forecasting DR Resource Capability

RAAIM Exemption

Though the Council disagrees with the CAISO's characterization of DR as a variable resource similar to wind and solar, if the CAISO is determined to treat DR as variable by subjecting it to an ELCC factor then the CAISO should bestow upon DR resources the same benefit of RAAIM exemption that is currently applied to wind and solar resources. The Revised Straw Proposal proposes that this will be "considered" but the CAISO should confirm that RAAIM penalties will indeed be waived.

Use of the DR LIPs

The Council cautions the CAISO against hanging its hat on using the LIPs to forecast the intra-day capability of DR resources. Similar the Council's statements above, the LIPs in their current form cannot be used to perform ex ante and ex post load impact analyses with regard to the types of DR resources envisaged for ESDER participation. As such, any use of the LIPs for forecasting at a level more granular than monthly expected performance will require significant adjustments. Second, the load impact analyses using the LIPs are done at the program level, not at the resource level, and use regression analysis techniques that are dependent on thousands of data points. The DR LIPs were not designed to forecast the day-to-day capability of individual DR resources. However, if the CAISO is interested in developing a methodology to determine the intra-hour capability of a given DR resource, then the Council recommends that it convene a series of technical workshops with the involvement of the DRMEC to discuss how this can be done.

Using Bids in Lieu of Intra-hour Forecasting

The Council is concerned that requiring intra-hour forecasting by the scheduling coordinators of DR resources could be cost-prohibitive. To avoid any potential negative consequences, the CAISO should develop a clearer idea of the costs associated with intra-day forecasting before adopting this requirement lest it result in the presumably unintended consequence of significantly reducing DR participation in the CAISO market. Such an outcome would be counter-productive given the shortage of capacity in California. Because of this, the Council is supportive of the CAISO's proposal to allow scheduling coordinators to elect to use market bids in lieu of intra-hour forecasting. Some DR resources are more or less variable than others, so to the extent the capability of a DR resource does not vary from its day-ahead market bid, it should be able to utilize its bid as its forecast.

5. **Parameters to reflect demand response operational characteristics**

The Council reserves comment on this issue.

6. **Removing consideration of non-24x7 settlement of behind the meter resources under DER aggregation model**

   The Council reserves comment on this issue.

7. **Additional comments**