



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 Working Group Meeting for ESDER Phase 4 that was held on August 21, 2019. 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 **September 4, 2019**.

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

The California Efficiency + Demand Management Council, Enel X North America, Inc., and CPower (the “Joint Parties”) appreciate this opportunity to provide comments in response to the CAISO’s August 21, 2019 stakeholder call. These comments are limited to the Variable Output Demand Response (VODR) proposal but the Joint Parties reserve the right to comment on other aspects of the ESDER 4 initiative in the future.

1. Discussion on non-24x7 settlement of BTM Resources

The Joint Parties reserve comment on this issue.

2. Market Power Mitigation for energy storage resources

The Joint Parties reserve comment on this issue.

3. Variable Output Demand Response resources

I. Background

Today, third-party DR providers (DRPs) providing DR resources procured through the DR Auction Mechanism (DRAM) submit a supply plan to the investor-owned utilities (IOU) sixty days in advance of the start of the delivery month. These DRPs are required to bid the DRAM resource into the day-ahead market (DAM) and, depending upon the type of RA product provided, the real-time market (RTM). The DRPs will receive capacity payments from the IOUs if they can demonstrate they made the resources available to the CAISO either through submitting energy bids into the markets, testing, or dispatching the resources. Performance of the DRAM resources is measured against the DRP's supply plan. The CAISO has a binary way of dispatching DR, either at 100% or 0% and there has not been direct a way for the DRP to indicate to the CAISO that a resource's capability had changed. Through the Resource Adequacy Availability Incentive Mechanism (RAAIM), DR resources of 1 MW or greater are subject to performance penalties while resources smaller than 1 MW are not.

The CAISO has proposed that DRPs indicate the actual capability of their "variable" DR resources so as give the CAISO a more accurate picture of available resources and to avoid subjecting variable DR resources to RAAIM penalties. The actual capability of DR resources can change due to temperature sensitivity and operational changes. Temperature sensitivity is primarily related to air-conditioning load. Operational changes can include changes such as water allocations, pumping loads, food processing intensity, manufacturing production changes, and others. Residential and small commercial customers often have a high percentage of their electricity consumption related to air conditioning load. Medium-to-large commercial and industrial customers typically have more varied uses of electricity, including retail, building management, manufacturing, and water pumping/processing to university campuses. Each customer location will have its own strategy and its own degree of variability and/or weather sensitivity. Some of the

weather sensitivity may be built into the capacity bids that are submitted during the DRAM solicitation and some of the variability can also be managed through the aggregation of different types of load.

II. Applicability of the VODR Operational Proposal

The Joint Parties appreciate the CAISO proposal for DRPs to be able to accurately reflect the capability of resources to the CAISO through their energy bids. However, the Joint Parties do not support the application of this variable methodology to all DR resources for the reasons described above. Not all DR resources vary in their ability to meet their Qualifying Capacity (QC) obligations. Therefore, it should be optional for DRPs to elect the variable option. However, it is not completely clear how the updated capability would be reflected in real-time. It is also not clear why the update would need to occur so close to real-time, as the CAISO proposes, if the DRP is aware of the variability of the resource in advance of real-time. For example, for weather-sensitive resources, there will be forecasts for weather available in the day-ahead timeframe, production schedule changes could be known or pumping allocation should be known in the day-ahead timeframe. Certainly, the closer to real-time, the more accurate the weather forecast, but it is not clear the accuracy gained by providing a DR resource's capability in real-time warrants the associated operational difficulty.

The Joint Parties support the availability of the variability option to the IOU DR programs as well as their inclusion in the LOLE study. The IOUs receive RA value based upon the DR Load Impact Protocols (LIPs). However, there has been no analysis on how the IOUs' bidding behavior aligns with the amount of RA capacity they are claiming. Though the CAISO has highlighted the DR LIPs as being potentially useful in developing the LOLE study, it is not clear how they can be utilized for this purpose. The DR LIPs are backward-looking and are used to forecast the load impacts at the program level, not at the resource level, at specific weather conditions. The Joint Parties have been reluctant to rely upon the DR LIPs for DRAM because of the high degree of variability associated with DRAM awards year-over year. This translates to a high degree of variability at the resource level, which is the level of supply plan submittals, and QC submittals, to date.

Therefore, the DR LIPs would be of little use in predicting the capability of IOUs' DR resources. A better approach would be to require the IOUs to include their DR programs as resources with associated QC values in their year-ahead and month-ahead supply plans so that their performance can be assessed on a comparable basis as DRAM resources.

III. Reflecting DR Resource Capabilities in the LOLE Study

Loss of Load Expectation has been used by E3 in developing avoided capacity values for cost effectiveness analysis. LOLE was tied to high demand periods, when supply shortages or outages may occur. It is unclear what assumptions CAISO would use in generating its LOLE study and if it is using it in a consistent way with E3 and the cost effectiveness analysis. Because it is not clear how the CAISO will use the LOLE study, CAISO should provide additional detail on how it plans to reflect in the LOLE study the reported capabilities of DR resources.

The Effective Load Carrying Capability (ELCC) analysis will measure the availability of resources relative to a perfect generator. ELCC will penalize use-limited resources for not having availability across 8,760 hours per year. However, value should not be determined simply by availability, but how the availability matches the needs on the grid. For example, having to pay for resources to be available 8,760 hours when there is no need on the grid would be expensive and wasteful. A more flexible grid that allows for resources to be dispatched for shorter periods of time, when the grid needs it, is more efficient. In fact, NYISO had proposed to reduce the capacity value of use-limited resources by a significant amount. An independent study performed by Astrape/GE (see attached) indicated that 4-hour resources should maintain a nearly 98% of capacity value due to the variable needs on the grid, mostly due to a high penetration of intermittent resources. NYISO modified its valuation of 4-hour duration resources, up to certain penetration levels, to be closer to the Astrape Study.

Though the Joint Parties see some merit in the option for DR resources to revise the capabilities of some resources as a result of variability, it is unclear how this variability will

be used to reduce the QC of these resources. Further, the Joint Parties is strongly opposed to the use of ELCC, which will significantly reduce the value of offered capacity due to the resources' inability to offer capacity across all hours. As discussed above, reduction based upon availability across all hours fails to take into consideration the value of use-limited dispatches when the grid really needs it. Understanding better how CAISO intends to use ELCC and LOLE to affect QC is a critical issue for the Joint Parties.

IV. CAISO-requested Areas of Feedback

a. Data Inputs and Assumptions Regarding DR Availability

The CAISO should refer to the IOUs' DR program tariffs and the Demand Response Auction Mechanism (DRAM) purchase agreement for their respective availability of resources. Each IOU DR program has an associated tariff that specifies exactly what hours of the day, days of the week, and number of hours per month or year the program is available. Similarly, the DRAM purchase agreement is a pro forma contract so the exact availability requirements for DRAM resources will be identical to one another.

b. Feasibility of DRPs Submitting Resource Capability as Real-time Data

As touched on above, should the CAISO implement its VODR proposal, it would be unnecessary and impractical to require DRPs' scheduling coordinators (SC) to submit real-time data on the capability of each DR resource. Unlike variable energy resources (VERs), DR is dispatchable exactly where and when needed, and is not a must-take resource, so it is unnecessary for the CAISO to have a comparable level of awareness of a DR resource's capability. Furthermore, the infrastructure cost of enabling real-time data and forecasting would very likely be prohibitive. The Joint Parties recommend that the CAISO pursue simplicity rather than unnecessary precision and allow a DR resource's capability to be specified once in the day-ahead and once in the day-of.

4. Additional comments

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