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BEFORE THE ENERGY COMMISSION
OF THE STATE OF CALIFORNIA

Reliability Reserve Incentive Programs	22-RENEW-01

I. Introduction

The California Independent System Operator Corporation (CAISO) respectfully submits these comments on the February 27, 2026 *Revised Draft Demand Side Grid Support (DSGS) Program Guidelines, Fifth Edition* (Draft Guidelines). The CAISO appreciates the California Energy Commission (Energy Commission) accepting comments on the Draft Guidelines.

Since its introduction, the DSGS program has been an important part of the toolset available to the CAISO to meet grid reliability needs during stressed grid conditions. The Energy Commission has successfully crafted DSGS program rules that are attractive to providers of load flexibility, resulting in steadily increasing enrollment in recent years. As a result of higher enrollment in 2025, CAISO has increasingly observed the impacts of DSGS test events on the grid. The CAISO submits these comments based on lessons learned from these observations to further enhance the DSGS program.

First, the CAISO supports the proposed revisions that would allow the Energy Commission to require aggregators with large aggregations to conduct test events in northern and southern California on separate days. This requirement would reduce impacts to system frequency, bolstering reliability and reducing ratepayer costs.

Second, the CAISO proposes that the Energy Commission require aggregators to gradually dispatch large aggregations over five minutes, rather than suddenly dispatching these aggregations to their maximum or minimum dispatch levels. This gradual dispatch would be similar to the linear ramping requirements for other resources in the CAISO. Adopting CAISO's proposal would mitigate impacts to system frequency, generating reliability and cost benefits.

II. Comments

In CAISO's role as a balancing authority, CAISO is responsible for maintaining system frequency in its balancing authority area. To maintain system frequency at reliable levels, CAISO operators have access to tools that adjust the output from supply resources to respond to changes in demand. When CAISO operators use these tools, the CAISO market passes the associated costs to load. Sudden decreases in load tend to increase system frequency while sudden increases have the opposite effect.

Last summer, CAISO observed large and sudden changes to CAISO system demand that occur at the same time as large DSGS test events. This is not surprising; it is the purpose of the DSGS program to reduce load and the DSGS guidelines incentivize DSGS aggregators to reduce load quickly. However, the rapid nature of these changes can pose reliability challenges and result in higher costs when CAISO operators take actions to mitigate impacts to system frequency.

The CAISO highlights these challenges not to criticize the DSGS program but rather to highlight potential areas of enhancement that would bolster reliability and reduce costs to ratepayers' benefit. The remainder of CAISO's comments support enhancements that would address the challenges posed by the large and sudden changes in load from dispatches of large DSGS aggregations.

A. The Energy Commission Should Adopt the Proposed Revisions that Would Allow the Energy Commission to Require Aggregators with Large Aggregations to Conduct Test Events in Northern and Southern California on Separate Days.

The CAISO appreciates Energy Commission's staff continued dedication to proactively adjust the Draft Guidelines to respond to lessons learned. The Draft Guidelines propose changes to how aggregators conduct DSGS Option 3 test events by adding the following language: "the [Energy Commission], in consultation with the [CAISO], may require storage [virtual power plant] aggregators with large aggregations to conduct test events for the [Pacific Gas & Electric] [Utility Distribution Company] service territory and the Southern California UDC service territories ([Southern California Edison] and [San Diego Gas & Electric]) on different days."[1]

[1] Draft Guidelines, p. 31.

The Energy Commission should adopt the proposed revisions that would allow the Energy Commission to require aggregators with large aggregations to conduct test events in northern and southern California on separate days. By conducting large Option 3 test events on multiple days, the Energy Commission can reduce the magnitude of load impacts at a particular moment. This would support reliable grid operations and reduce ratepayer costs by reducing or possibly obviating the need for CAISO operators to use tools to maintain system frequency, relative to the possible scenario when all Option 3 test events occur simultaneously.

The CAISO also appreciates and supports the proposed revision for the Energy Commission to consider CAISO feedback when determining whether to require large aggregations to conduct test events in northern and southern California on separate days. This proposed revision would continue the historical practice of the Energy Commission and the CAISO successfully coordinating DSGS events to support reliable grid operations.

B. The Energy Commission Should Require Large DSGS Providers to Gradually Dispatch Large Aggregations Over Five Minutes to Mitigate Impacts to System Frequency.

The performance measurement rules in the current draft guidelines incentivize DSGS providers to respond to Option 3 events quickly to maximize their measured performance.[2] They do so by measuring the total discharge in kWh from aggregations during DSGS event hours, encouraging DSGS aggregators to maximize their dispatch as soon as the DSGS event begins and reducing their dispatch to zero as close as possible to the end of the DSGS event.[3]

During peak load conditions, any kWh of load reduction can support more reliable system operations by allowing grid-scale generation to be used to meet other load requirements. But the rate at which the load reduction occurs also affects system reliability and ratepayer costs. As described above, sudden changes in load can pose reliability challenges and result in higher costs. The CAISO proposes that the Energy Commission update the Draft Guidelines to mitigate potential impacts due to sudden changes in load.

[2] *Id.,* p. 32.
[3] *Id.*

The Energy Commission should require large DSGS providers to gradually dispatch large aggregations over five minutes to mitigate impacts to system frequency, rather than suddenly dispatching these aggregations to their maximum dispatch level at the start of a DSGS event or to zero dispatch at the end of a DSGS event. Specifically, the Energy Commission should require large DSGS providers to start the DSGS event by dispatching the aggregation linearly from zero dispatch to its maximum dispatch level over a five minute period. After the final hour of a DSGS event, the large aggregation should linearly reduce its dispatch level from its maximum to zero across a five minute period. This would result in the same kWh of load reduction compared to the dispatch pattern implied by the current Draft Guidelines but would spread the dispatch over a slightly longer period of time. By dispatching the aggregations more gradually, large aggregators would reduce the rapid changes in CAISO system load that may require action from CAISO operators, supporting grid reliability and reducing ratepayer costs.

To be clear, CAISO suggests that the Energy Commission require these gradual dispatch patterns for both non-test events and test events, as both have similar impacts on system frequency.

Requiring more gradual dispatches would also align Option 3 with the expected dispatch pattern of other CAISO market-participating resources, such as aggregations participating in DSGS through DSGS Option 2. Option 2 aggregations are represented in CAISO's market as market-participating demand response resources. As with all market-participating resources, CAISO expects Option 2 aggregations to follow gradual and predictable dispatch operating targets.[4] The CAISO requires market-participating supply resources to follow this dispatch pattern to mitigate impacts to system frequency. Holding Option 3 aggregators to a similar standard as Option 2 aggregators would not only enhance equity across DSGS options, it would bolster reliability and reduce costs, relative to the status quo of sudden load changes as DSGS events begin and end.

The CAISO recommends that the Energy Commission only require large aggregations to ramp more gradually, as large aggregations have greater potential to affect

[4] CAISO New Market Dispatch Operating Point Ramping Logic, p. 1. newmarketadsdoprampinglogic.pdf

system frequency. Dispatches of smaller aggregations impact system frequency less acutely, decreasing the need for CAISO operators to take actions to maintain system frequency.

To determine which aggregations to apply this proposed change, the Energy Commission should use the same approach that it intends to use to determine which aggregations should be required to conduct test events on separate days. The CAISO suggests the following qualitative description to support Energy Commission in its determination of which aggregations Energy Commission should consider "large" aggregation. While CAISO does not formally define large aggregations, it encourages Energy Commission to consider the total load reduction capability in MW of an aggregation in relation to the overall demand within the relevant area. In other words, an aggregation would be "large" when its load impact becomes material enough to noticeably affect regional load patterns, operational ramps, or day ahead and real time forecasting. As a starting point, the CAISO suggests the Energy Commission consider aggregations that exceed 100 MW in enrolled nameplate capacity to be "large" aggregations.[5] The CAISO expresses its interest and intent to collaborate with the Energy Commission to establish a shared understanding of what magnitudes of aggregated load begin to pose operational significance.

The CAISO expects that requiring large aggregations to dispatch more gradually might necessitate changes to other aspects of the DSGS program guidelines such as the performance measurement and compensation guidelines. The CAISO is confident that Energy Commission staff's detailed knowledge of the Draft Guidelines will allow them to identify the appropriate changes to these rules to accommodate CAISO's proposed revision.

Finally, CAISO expects this change would apply primarily to Option 3. To the extent that Option 4 has aggregations that meet the Energy Commission's classification as "large", the CAISO also proposes that the Energy Commission apply this rule to large aggregations participating under Option 4.

[5] CAISO based its suggested starting point on analysis of 2025 DSGS anonymized data posted by Energy Commission staff. By applying CAISO's suggested 100 MW threshold to October 2025 enrolled nameplate capacity, three aggregations representing 642 MW of enrolled nameplate capacity would be deemed "large" aggregations. *See* https://efiling.energy.ca.gov/GetDocument.aspx?tn=269155&DocumentContentId=106248.

The CAISO believes that the Energy Commission adopting this proposal would represent a meaningful enhancement to the already robust Draft Guidelines.

III. Conclusion

The CAISO appreciates the opportunity to provide comments on the Draft Guidelines and collaborating further with Energy Commission staff on the DSGS program.

Respectfully submitted,

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