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**BEFORE THE ENERGY COMMISSION
OF THE STATE OF CALIFORNIA**

Supply Side Demand Response

21-DR-01

**COMMENTS ON DEMAND RESPONSE WORKING GROUP PROPOSALS OF THE
CALIFORNIA INDEPENDENT SYSTEM OPERATOR CORPORATION**

I. Introduction

The California Independent System Operator Corporation (CAISO) submits comments on the Working Group Proposals in the California Energy Commission's (Energy Commission) Supply Side Demand Response Docket 21-DR-01. The CAISO greatly appreciates Energy Commission staff's efforts to facilitate the Supply Side Demand Response Working Group and develop recommendations for the California Public Utilities Commission (CPUC) on adopting new demand response qualifying capacity (QC) methodologies for 2025 and beyond.

II. Discussion

The CAISO provides comments on demand response adders and parties' QC methodology proposals. The Energy Commission should recommend the CPUC remove the remaining components of the planning reserve margin (PRM) adder, not reinstate the operating reserves component, and remove the transmission loss factor adder. The Energy Commission should also recommend the CPUC continue its current process of including the distribution loss factor adder in QC values.

Regarding QC methodology proposals, the CAISO recommends the Energy Commission consider availability and use-limitations and weather variability in demand response QC methodologies. The CAISO also has concerns with the California Efficiency + Demand Management Council (CEDMC) proposal for demand response providers to calculate their own QC values with little validation. Although parties propose incremental enhancements to *status quo* load impact protocols (LIPs) by accounting for load pre-cooling and snapback effects, the CAISO also has longstanding concerns that the LIPs overestimate demand response capabilities.

A. Demand Response Adders

In the June 2021 Decision (D.) 21-06-029, the CPUC removed the operating reserve component of the PRM adder and agreed with Energy Division's rationale also to remove the component associated with load forecast error.¹ The CPUC deferred action on the load forecast error and forced outage components of the demand response PRM adder to allow for further study and stakeholder consideration in the Energy Commission's Supply Side Demand Response Working Group. The CPUC also requested that the Energy Commission consider whether it is appropriate to retain the transmission loss factor adder as part of its study process in the Energy Commission's Supply Side Demand Response Working Group.

The CPUC correctly determined in Decision (D.) 21-06-029 that the adder component associated with operating reserves should be removed. As explained below, the Energy Commission should recommend that the CPUC not reinstate the operating reserve component of the PRM adder. The Energy Commission also should direct the CPUC to remove the remaining components of the PRM adder and transmission loss factor adder.

1. The Energy Commission Should Recommend that the CPUC Not Reinstate the Operating Reserve Component of the PRM Adder.

The CAISO serves the load under supply side demand response programs each day. The CAISO also must procure operating reserves for this load. Critically, however, the CAISO's reserve requirements are not based on load levels; they are based on the most severe system contingency (MSSC) or by generation levels. By applying a PRM adder to demand response counting, the CPUC incorrectly assumes curtailable load does not need to be served in the first instance. In other words, applying a PRM adder would inappropriately treat demand response similar to "energy efficiency" or load-modifying demand response. The presence of supply side demand response does *not* reduce the CAISO's reserve requirements day to day. The CAISO must procure its full reserve requirements to serve demand and meet reliability criteria each day in the day-ahead market, including for curtailable load. In fact, the CAISO must have operating reserves for the underlying load even during those intervals where demand response resources are dispatched to curtail demand. The Energy Commission should recommend that the CPUC

¹ California Public Utilities Commission, D.21-06-029, June 24, 2021, p. 41.
<https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M389/K603/389603561.PDF>

not reinstate the PRM adder for operating reserves. The CPUC correctly determined in D.21-06-029 that the operating reserve component of the PRM adder should be removed.

2. The Energy Commission Should Recommend the CPUC Remove the Remaining Components of the PRM Adder Related to Load Forecast Error and Forced Outages.

The Energy Commission should recommend that the CPUC remove the load forecast error component of the PRM adder. The PRM adder inappropriately assumes demand response would reduce procurement for load forecast error. However, there is no evidence in the record demonstrating that supply side demand response resources reduce the load forecast error between the planning and operational timeframes. Correspondingly, demand response resources do not reduce the amount of additional capacity load serving entities (LSEs) must procure to account for any load forecast error. The same is true for the forced outage component of the PRM adder. There is no evidence in the record demonstrating that the presence of demand response reduces generator forced outages, or the amount of capacity LSEs must procure to account for those outages.

Studies to derive the PRM in the CPUC area incorporate assumptions about expected forced outages on the system. These studies are informed by historic forced outages. For example, forced outage rates in the CPUC's recent Loss of Load Expectation studies in the Integrated Resource Planning proceeding and the resource adequacy proceeding are informed by outages reported into the NERC Generator Availability Data System.² LSEs must then procure additional capacity to cover expected forced outages. The presence of supply side demand response does not reduce these historic forced outage rates, so supply side demand response should not receive credit for reducing the capacity LSEs must procure to account for expected forced outages. Demand response does not—and cannot—prevent or reduce forced outages on other generating units.

² CPUC, *Proposed Decision Adopting 2021 Preferred System Plan*, R.20-05-003, December 22, 2021; CPUC Energy Division, *Loss of Load Expectation and Effective Load Carrying Capability Study*, R.21-10-002, February 18, 2022.

3. The Energy Commission Should Recommend the CPUC Continue Its Current Process of Including Distribution Loss Factor Adders in QC Values.

According to CPUC Decision D.21-06-029, demand response QC values will incorporate the distribution loss factor starting in 2022. The CAISO agrees with this approach, and it encourages the Energy Commission to recommend that the CPUC continue its current process of including the distribution adder in QC values.

Demand response resources are modeled and settled at the transmission and distribution interface. Avoided distribution losses are already reflected in Settlement Quality Meter Data for all distribution-side resources. Therefore, it is appropriate to include avoided distribution losses directly in demand response QC values. If the static distribution factors applied by the CPUC to demand response QC values are outdated, a study to update these values may be warranted.

4. The Energy Commission Should Recommend the CPUC Remove Demand Response Transmission Loss Factor Adders. At Minimum, Transmission Loss Adders Should Be Removed Until Validated Based on an Updated Study.

The CAISO continues to recommend that the CPUC remove demand response transmission loss factor adders. The CAISO notes that other distribution-side resources do not receive a transmission adder. Some transmission-connected supply side resources also can reduce transmission system losses, but they do not receive adders for doing so. The loss factor adder for demand response is unduly preferential. Moreover, it is unclear how the current transmission loss factors were determined. Transmission adders were adopted in 2015 based on an update to planning assumptions to the 2014 Long Term Procurement Plan. Attachment 2 to the Ruling lists avoided transmission and distribution loss factors “supplied by the CEC,”³ but there is neither reference to the specific Energy Commission study nor explanation how these factors were calculated. Furthermore, a single, static avoided transmission loss factor does not accurately represent node-specific and dynamic congestion benefits across the year. Although the CAISO advocates that the CPUC remove the transmission loss adder entirely, at a minimum,

³ CPUC, Assigned Commissioner’s Ruling on Updates to the Planning Assumptions and Scenarios For Use in the 2014 Long-Term Procurement Plan and the California Independent System Operator’s 2015-16 Transmission Planning Process, March 2, 2015, Attachment 2, p. 19. [Microsoft Word - R1312010 Picker Ruling 3-2-15 \(ca.gov\)](#)

transmission loss adders should be removed until these figures can be validated by an updated analysis.

B. Qualifying Capacity Methodology Proposals

1. The Energy Commission Should Consider Availability and Use-limitations and Weather Variability in Demand Response Counting Methodologies.

The CAISO encourages the Energy Commission to endorse proposals that meet the Energy Commission Supply Side Demand Response Working Group Principle 5: “The QC methodology should account for any use limitations, availability limitations, and variability in output of DR resources.” Although most parties’ proposals take steps to account for use and availability limitations and or weather variability, no single proposal captures this principle entirely.

Demand Side Analytics (DSA), the California Large Energy Consumers Association (CLECA), and OhmConnect’s proposals would continue to rely on the CPUC’s existing LIPs. Under the CPUC’s 24-hour resource adequacy framework, hourly LIPs will better capture resource variability across the day than a single, static QC value. DSA and CLECA also include incremental enhancements to *status quo* LIPs by accounting for load pre-cooling and snapback effects. However, as noted in prior comments, the CAISO is concerned LIPs do not adequately consider availability and use-limitations.⁴ The Energy Commission and the CPUC should address these shortcomings.

DSA proposes that parties use existing LIPs as the basis for hourly demand response QCs, but DSA attempts to capture availability and use-limitations by providing additional *ex post* data. DSA suggests that parties calculate bid and performance “alignment metrics” in addition to LIP *ex post* performance assessments. Although such metrics could indicate how availability and use-limitations impact the resource’s availability, DSA does not propose that parties use these new metrics to inform QC values. Similarly, although DSA’s proposed time-temperature matrix could provide useful information on resource availability and performance relative to

⁴ CAISO Comments on Supply Side Demand Response Working Group Report, 21-DR-01, February 4, 2022, p. 3. <http://www.caiso.com/Documents/Feb4-2022-Comments-Supply-SideDemandResponse-WorkingGroupReport-21-DR-01.pdf>

weather conditions, DSA does not specify how this information should be used to inform QC values. The CAISO believes DSA's proposal could enhance *status quo* LIPs, but only if QC values actually use the *ex post* bid and performance data and temperature data.

The Energy Commission staff's proposal expressly accounts for weather variability by treating both the *ex ante* stated capability and *ex post* performance as temperature-dependent. The Energy Commission staff's proposal uses load impact and temperature regressions to evaluate a program's capability using historic performance data. However, the Energy Commission staff's proposal does not expressly account for use and availability limitations; it instead relies on a penalty mechanism to incentivize availability. CEDMC's proposal on the other hand does not expressly account for availability or use-limitations or weather variability, and relies primarily on an incentive mechanism to ensure resource availability. The CAISO believes that if the Energy Commission and the CPUC address these shortcomings, QC values will properly account for demand response's limitations in fulfillment of Principle 5.

2. The CAISO Has Concerns with the CEDMC Proposal for Demand Response Providers to Self-calculate their Own QCs with Limited Validation.

The CEDMC proposal would allow a Demand Response Provider (DRP) to calculate its claimed QC with limited up-front validation. The proposal relies on a performance penalty structure to try to ensure DRPs do not overstate QC values and deliver contracted capacity. According to CEDMC, using a penalty structure to discipline up-front counting values *should* drive reasonable counting values in the planning timeframe.

The CAISO continues to have concerns with adopting CEDMC's proposal. As a principal matter, there is no evidence in the record that a penalty structure would provide sufficient incentives for DRPs to calculate their own QC values reasonably. Although inaccuracy penalties provide some incentive for accuracy, any workable methodology should ensure counting is as accurate as possible upfront rather than addressing shortfalls after the fact. The CAISO notes that QC shortfalls would directly affect real-time reliability whereas assessing financial penalties happens after the fact. Additionally, the CEDMC proposal would only penalize DRPs for performance that drops below 50 percent of their QC value. The DRP that misses its QC value by 49 percent faces no consequences. Potential penalties under the CEDMC proposal are simply inadequate incentives for DRPs to perform to their QC values in

real-time. The CEDMC proposal also fails to specify who will be responsible for administering any penalties.

Other penalty structures like the Energy Commission staff's proposed penalty proposal may be more effective to incentivize reasonable capacity valuation up front. Penalties under the Energy Commission staff's proposal are applied for performance below 94.5% of the QC value and could reach two times the resource's capacity payment. However, the Energy Commission staff's proposal does not clearly define who will be responsible for administering the proposed penalty structure.

3. The CAISO has Longstanding Concerns that LIPs Overestimate Demand Response Capability.

DSA and CLECA proposals rely on the existing LIP process. DSA and CLECA propose that the CPUC leverage hourly LIP profiles as the basis for demand response counting under the CPUC's 24-hour resource adequacy framework. DSA and CLECA also propose that parties reflect load snapback and pre-cooling effects in hourly counting values. Under the CPUC's 24-hour framework, using hourly LIP profiles as the basis for demand response QC values is preferable to static QC values because the former capture resource variability across the day. Although the CAISO supports hourly, variable demand response counting and including load snapback and pre-cooling effects under the CPUC 24-hour framework, DSA and CLECA's proposals may have limited impact if LIPs continue to exaggerate actual resource capabilities, potentially leaving the CAISO short of usable capacity in the operating timeframe. As stated in past CAISO comments citing its independent Department of Market Monitoring reports, demand response availability and performance persistently fall below QC values, even without PRM and transmission and distribution loss factor adders.⁵ The CAISO remains concerned that LIP protocols persistently exaggerate the availability of demand response on high load days, resulting in shortfalls in capacity used to meet resource adequacy requirements. DSA's proposal takes a first step to improve on these issues by providing additional data on resource performance, but it is still unclear how this additional data will be used to inform QC values in the future. Applying

⁵ See: CAISO Department of Market Monitoring, *Demand Response Issues and Performance 2021*, January 12, 2022. Available at: <http://www.caiso.com/Documents/Demand-Response-Issues-Performance-Report-Jan-12-2022.pdf>

the proposed new metrics directly to the QC valuation process is more likely to enhance DSA's proposal.

III. Conclusion

The CAISO appreciates the opportunity to provide comments on the demand response working group proposals.

Respectfully submitted,

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