BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking to Oversee the Resource Adequacy Program, Consider Program Refinements, and Establish Forward Resource Adequacy Procurement Obligations	Rulemaking 19-11-009 (Filed November 7, 2019)

COMMENTS ON TRACK 4 PROPOSALS AND WORKING GROUP REPORT OF THE CALIFORNIA INDEPENDENT SYSTEM OPERATOR CORPORATION

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I. Introduction

The California Independent System Operator Corporation (CAISO) hereby provides its comments on the Track 4 proposals and Working Group Report, in accordance with the December 11, 2020 *Assigned Commissioner's Amended Track 3B and Track 4 Scoping Memo and Ruling* (Amended Scoping Memo).

II. Discussion

The CAISO's comments address proposals submitted by Energy Division staff and the Joint Parties. The CAISO supports Energy Division staff's proposals regarding four matters: maximum cumulative capacity (MCC) framework refinements, effective load carrying capability (ELCC) for new solar contracts, demand response adders and demand response in the MCC framework.[1] The CAISO appreciates Energy Division exploring these important issues to ensure demand response receives an appropriate capacity value that reflects the quantity the resource must offer into the CAISO market as a resource adequacy resource. The CAISO also responds to the Joint Parties' proposal to modify the Load Impact Protocols.

A. Comments on Energy Division Staff's Proposal A: Adjust MCC Buckets

The CAISO supports Energy Division staff's Proposal A to require resources in all MCC categories be available from Monday through Saturday, and strongly advocates the Commission

[1] *See* CPUC Energy Division's resource adequacy Track 4 proposals.

extend the availability requirements for all MCC categories to include Sunday. Table 1 below presents the day-ahead forecasted peak, actual peak, and their difference, during the September 2020 heatwave. During the September 4 through September 7, 2021 high load events, Sunday, September 6 had the highest actual peak load and forecast, with actual load peaking at 46,887 MW.[2]

Table 1. Day-Ahead Peak Forecast vs. Actual Peak During Heat Event

	Day-Ahead Peak forecast (MW)	Actual Peak (MW)	Difference (MW)
8/14/2020	46,257	46,802	545
8/15/2020	45,514	44,957	(557)
8/16/2020	44,395	43,816	(579)
8/17/2020	49,824	45,169	(4,655)
8/18/2020	50,485	47,120	(3,365)
8/19/2020	47,382	46,074	(1,308)
9/4/2020	41,009	40,674	(335)
9/5/2020	45,231	46,272	1,041
9/6/2020	49,166	46,887	(2,279)
9/7/2020	45,797	41,774	(4,023)

Source: Final Root Cause Analysis Mid-August 2020 Extreme Heat Wave, page 66.

Including Sunday in the MCC availability requirements is also consistent with the CAISO's revised resource adequacy import proposal to implement a seven day per week, 16 hour per day must offer obligation for non-resource specific resource adequacy resources.

The CAISO also agrees with Energy Division staff's proposal to increase the minimum MCC Category 1 resource availability from 40 to 100 hours per month between 4:00 and 9:00 pm, and to apply the requirement year-round.

Finally, the CAISO is uncertain whether eliminating MCC Category 2 aligns with future Commission direction, as articulated in other proceedings. In the most recent integrated resource plan (IRP) ruling, the Commission proposed a minimum 1,000 MW procurement of 8 hour duration storage by 2025.[3] Although it may be more efficient now to eliminate MCC Category 2

[2] Final Root Cause Analysis, Table 5.1, p. 66. Available here: http://www.caiso.com/Documents/Final-Root-Cause-Analysis-Mid-August-2020-Extreme-Heat-Wave.pdf

[3] Administrative Law Judge's Ruling Seeking Feedback on Mid-Term Reliability Analysis and Proposed Procurement Requirements, p. 17. Available here: https://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M367/K037/367037415.PDF

because it is rarely used, the Commission should carefully consider whether doing so aligns with Commission long-term procurement direction.

B. Comments on Energy Division Staff's Proposal B: Marginal ELCC for New Solar Contracts

Energy Division staff Proposal B provides any contract with a new solar resource with a commercial online date after December 31, 2020 should receive a zero marginal ELCC value. Solar resources online on or before December 31, 2020 would continue to receive average ELCC values, similar to CalWEA's proposal in Track 3B.1.[4] Although the CAISO is not opposed to establishing a marginal ELCC value for a portion of the fleet, the CAISO will continue to assess resource adequacy showings based on the average ELCC value per resource type. Marginal ELCC values are best used to send long-term planning signals to load serving entities such as the case under the integrated resource plan proceeding. Energy Division staff's proposal also unduly discriminates among vintages of resources. Because both vintages are providing the same product—resource adequacy capacity—they should be subject to similar counting rules. From a reliability perspective, they are indistinguishable.

C. Comments on Energy Division Staff's Proposal C: Demand Response Adders

Under Proposal C, Energy Division staff poses several questions for stakeholder feedback regarding demand response treatment and adders. The CAISO provides its responses below.

1. Should the Commission require the investor owned utilities to include their demand response resources on supply plans or are there barriers that must first be addressed?

The Commission should require investor owned utilities to include their demand response resources on supply plans to qualify as resource adequacy capacity. In its Track 4 proposals, the CAISO proposed the Commission stop crediting resources toward meeting established resource adequacy requirements not shown on a supply plan. The CAISO explained how this practice raises operational, capacity sufficiency, accountability, and regulatory compliance concerns.[5] The CAISO recognizes a transition period may be required to fully address all open questions

[4] Energy Division staff Track 4 proposal, p. 4.
[5] *See* CAISO's Track 4 proposal at pp. 2-6.

associated with eliminating non-net-neutral credits. The CAISO recommends the Commission develop a transition plan by August 1, 2021 to allow demand response resources to be shown on supply plans as resource adequacy resources as soon as possible but no later than for the 2022 resource adequacy year. The CAISO recommends using the working group proposed by PG&E in its Track 3B.1 comments to develop this transition plan.

Also, the CAISO has proposed an ELCC methodology to count demand response resource adequacy capacity value. The ELCC methodology better reflects the reliability value of demand response as a variable resource. However, the CAISO recognizes that it may take time for the Commission to develop and implement an ELCC methodology for demand response. The CAISO also notes, PG&E raised several additional questions in Track 3B.1 that should be discussed. These include considering changes that might be needed to the investor owned utilities' demand response program tariffs, misalignment between retail program enrollment timelines and the month ahead resource adequacy compliance filing timeline, and changing values that may occur throughout the compliance year. Although there are some questions, it is critical to include all resources providing capacity to meet resource adequacy requirements on supply plans as soon as possible to maintain the integrity and equity of the resource adequacy program.

2. If demand response resources are not put on supply plans and the CAISO follows through with its proposed BPM revision, how can this capacity be counted?

Under the CAISO tariff, only resources shown on a supply plan are considered resource adequacy capacity. This applies to all supply-side resources—including demand response—meeting resource adequacy requirements. The CAISO tariff (in Appendix A) defines Resource Adequacy Capacity as "the supply capacity of a Resource Adequacy Resource listed on a Resource Adequacy Plan and a Supply Plan."[6] The proposed BPM provision does not change this existing tariff requirement. Resources not on a supply plan are not subject to CAISO resource adequacy tariff provisions, including the must offer obligation to bid into the CAISO markets. Resources must be on a supply plan to count as resource adequacy capacity.

[6] http://www.caiso.com/Documents/AppendixA-MasterDefinitionSupplement-asof-Jan1-2021.pdf

3. Should, and if so how should, the transmission and distribution (T&D) and/or the PRM adders be retained and accounted for in CAISO's system?

As stated in the CAISO's Track 4 proposal, the Commission should eliminate the planning reserve margin (PRM) adder because demand response does not reduce the CAISO's reserve requirements or costs, and there is no evidence demand response lowers the system forecast error or system average forced outage rate.[7] Currently, the Commission adds the PRM to the monthly peak load forecast to set resource adequacy requirements. The PRM is designed to account for operating reserves, forecast error, and forced outages.

Fundamentally, the PRM adder for resource adequacy demand response resources is based on flawed and unsupported premises.[8] Energy Division staff correctly characterized this flawed rationale, explaining the PRM adder would only be appropriate if:

> "all [demand response] is dispatched during the peak load hour in every month. This is not the case as the bulk of [demand response] capacity is comprised of emergency programs that can only be dispatched during a grid warning or emergency situation, and even economic programs are rarely if ever fully dispatched at one time.[9]

In fact, the forced outage component of the PRM can never be "avoided" because it reflects the historical performance of the fleet, but demand response does not – and cannot –prevent or reduce forced outages on generating units. As demonstrated during the summer 2020 heat waves, demand response performed below their credited amounts, even without the PRM adder.[10]

a. Is it appropriate to include the transmission and/or distribution adder in the Net Qualifying Capacity (NQC) value of a demand response resource?

The CAISO also agrees with PG&E's Revised Track 3B.1 proposal on this issue, which states "the policy of applying T&D line loss factors for [demand response] resources in the resource adequacy program is inconsistent with other distribution connected resources, which do

[7] CAISO Track 4 Proposals at pp. 9-10.
[8] *See* CAISO Track 4 proposal, p. 9 and CAISO Consolidated Comments on all Workshops and Proposals, Track 2, March 23, 2020, p. 10-11.
[9] Energy Division staff Track 4 proposal, p. 5.
[10] *See*: Final Root Cause Analysis: Mid-August 2020 Extreme Heat Wave, pp. 100-109. http://www.caiso.com/Documents/Final-Root-Cause-Analysis-Mid-August-2020-Extreme-Heat-Wave.pdf.

not have a T&D line loss factor embedded in them"[11] Other distributed energy resources do not have a transmission loss factor credited to their revenue data. The Commission should stop crediting transmission line loss factors for demand response resources consistent with the Commission's treatment of other distributed energy resources. When the CAISO dispatches supply-side demand response resources, the locational marginal price will already compensate the resources for the marginal transmission line loss factor. This marginal loss factor is dynamic and more accurate losses assessment than a static transmission line loss.

In addition, the Commission should stop including a distribution loss factor when assessing demand-response performance because it is already reflected in Settlement Quality Meter Data (SQMD) for all distribution-side resources. A distribution loss factor is the only line loss factor that should be reflected, and should already be adjusted by the responsible Scheduling Coordinator per CAISO Tariff Section 10.3.3:

> Where a Scheduling Coordinator Metered Entity is connected to a UDC's [utility distribution company's] Distribution System, the responsible Scheduling Coordinator shall adjust the Meter Data by an estimated Distribution System loss factor to derive an equivalent CAISO Controlled Grid level measure. Such estimated Distribution System loss factors shall be approved by the relevant Local Regulatory Authority prior to their use.

Under this definition, the scheduling coordinator must adjust meter data with an approximate distribution system loss factor. If the Commission allows for another distribution loss factor adder, it would be double counting the losses. Lastly, to complement the settlements data, scheduling coordinators for demand response resources should include the distribution loss factor in their CAISO market bids as well. For the foregoing reasons, the Commission should not include the transmission and distribution line loss factors for demand response resources in the resource adequacy program.

b. Would including adders subject demand response resources to RAAIM penalties?

Including the PRM and T&D adders in the qualifying capacity value for demand response would potentially have RAAIM impacts if the full qualifying capacity for these

[11] *See* PG&E Revised Track 3B.1 Proposal, Attachment 1-5.

resources was shown on supply plans. This is because the scheduling coordinator cannot bid the amount included in those adders because the adders do not represent actual available load curtailment. Therefore, the CAISO would not expect to see the value of the adders reflected in the demand response resource bids. The CAISO would only expect to see bids for the distribution loss factor that mirror the settlement data.

c. Are there technical barriers to including adders in a resource's NQC value or CAISO systems that would need to be changed?

No changes to CAISO systems would be necessary. Removing the PRM and T&D adders should not impact CAISO systems, and distribution losses are already accounted for in baselines and performance measurements submitted to the CAISO.[12]

D. Comments on Energy Division Staff's Proposal D: Demand Response MCC Bucket

Energy Division's Proposal D considers potential modifications to the demand response MCC bucket, which is currently capped at 8.3 percent, given the recent performance of demand response during the summer heat wave events.[13] Energy Division's proposed modifications include lowering the demand response MCC bucket cap, requiring minimum dispatch requirements, capping bid prices, and disallowing startup costs for demand response resources.

The CAISO agrees demand response performance during the summer heat wave events warrants potential modifications to the demand response MCC bucket and other improvements to ensure demand response providing resource adequacy capacity effectively can support reliability.

The Commission's decision setting the demand response MCC bucket at 8.3 percent was based on the (1) logic that demand response resources must be available for a minimum of 24 hours per month and (2) efforts in place to improve demand response performance.[14] The CAISO agrees with Energy Division that it is appropriate to lower the MCC bucket cap for demand response, and suggests setting the cap at 5.3 percent, the cap originally proposed by

[12] *See* CAISO comments on PG&E proposal in Track 3B.1, March 12, 2021.
[13] *See* Final Root Cause Analysis: Mid-August 2020 Extreme Heat Wave, pp. 50-57. http://www.caiso.com/Documents/Final-Root-Cause-Analysis-Mid-August-2020-Extreme-Heat-Wave.pdf.
[14] Commission Decision 20-06-031 June 25, 2020.

Energy Division staff in Track 2.[15] There is no evidence existing demand response programs can provide sustained output for 24 hours per month.

Reliability Demand Response Resources are even more limited, as the CAISO typically can only dispatch these resources after a declaration of a warning or emergency, which rarely happens.[16] When the CAISO dispatched demand response more frequently during the summer heat wave, bids were generally significantly lower than the resource adequacy values and metered load drop was generally lower than dispatch.[17] The Commission should adopt the originally proposed 5.3 percent cap on demand response, which assumes demand response is dispatched 12 hours per month.

E. Joint Parties Proposal on Load Impact Protocols

The California Efficiency + Demand Management Council, CPower, Leapfrog Power, Inc. and OhmConnect, Inc. (Joint Parties) submitted a proposal to streamline the Load Impact Protocols (LIP) with the goal of making them easier to perform and lower barriers to demand response resource adequacy participation. The Joint Parties' proposal highlights the challenges with using the LIP to establish the qualifying capacity values for demand response given the complexity and lack of transparency in the current process. The challenges and shortcomings associated with the LIP further prove the benefits of adopting an ELCC methodology to establish qualifying capacity values for variable demand response resources.

The LIP does not consider the use-limitations, limited energy, carbon offsetting capabilities, or the variable nature of most demand response resources in establishing qualifying capacity values. As such, the LIP is limited in its ability to assess demand response resources' actual contribution to reliability. The LIP was more relevant when the resource adequacy program's primary concern was meeting gross peak capacity needs, but that is no longer the case. At that time, energy sufficiency was a non-issue because the remaining gas, nuclear, and hydro resources could support system energy needs. However, circumstances have changed dramatically. The LIP may be a useful tool for estimating demand response resource hourly

[15] Commission Energy Division staff, Proposals for Proceeding R.19-11-009, Proposal A: Revising Maximum Cumulative Capacity Buckets, February 7, 2020.
[16] http://www.caiso.com/Documents/Alert_WarningandEmergenciesRecord.pdf
[17] Final Root Cause Analysis at pp. 52-56: http://www.caiso.com/Documents/Final-Root-Cause-Analysis-Mid-August-2020-Extreme-Heat-Wave.pdf

operational capabilities, but the Commission should discontinue using it to assess demand response resource capacity value because it can overvalue the contribution these resources make to grid reliability under current and expected future conditions.

Instead, the Commission should adopt a new counting methodology for demand response that meets the following principles identified by the CAISO in its Track 3B.1 proposal:

- **Assesses demand response's contribution to reliability across the year or seasons** An approved qualifying capacity counting methodology should evaluate how demand response contributes to system reliability under a loss of load expectation, which considers how demand response contributes to the overall system reliability. This contrasts to the LIP, which is a resource/program specific peak hour(s) evaluation that does not consider overall system needs.
- **Assesses demand response's capacity value as a variable resource –** Demand response resources are not fixed capacity resources, and any approved qualifying capacity valuation methodology must appropriately value the variable load curtailment nature of demand response and how its variability affects system reliability.
- **Assesses demand response's interactive effects with other resources –** Use- and availability-limited resources, like demand response, can saturate alongside similar use limited resources as incremental amounts of similar resource types add less and less additional capacity value to the system.
- **Is an industry-accepted capacity valuation methodology –** Loss of load expectation methodologies and evaluating a variable energy resources' contribution to reliability using ELCC is an accepted and growing industry-accepted capacity valuation practice.

The Commission should apply an ELCC methodology to determine the qualifying capacity value of supply-side demand response in a manner relevant and meaningful to the needs of the transforming grid. The Commission should leverage the CAISO-commissioned E3 ELCC study to consider how Energy Division staff can further vet and apply an ELCC methodology to supply-side demand response. The E3 ELCC Study demonstrates it is possible and appropriate to use an ELCC methodology to assess the value of demand response. Additionally, because

ELCC is an industry-accepted methodology for capacity valuation for variable and energy limited resources, adopting an ELCC for demand response should provide demand response providers and other stakeholders with clearer, more transparent process for establishing qualifying capacity values. The Commission should affirmatively decide to transition to an ELCC methodology by the end of this Track 3.B cycle, with a new ELCC methodology employed for the 2022 resource adequacy program year.

III. Conclusion

The CAISO appreciates the opportunity to submit comments on the Track 4 proposals and Working Group Report.

Respectfully submitted

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