BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking to Oversee the Resource Adequacy Program, Consider Program Reforms and Refinements, and Establish Forward Resource Adequacy Procurement Obligations.	Rulemaking 23-10-011 (Filed October 12, 2023)

COMMENTS ON TRACK 2 PROPOSALS BY THE DEPARTMENT OF MARKET MONITORING OF THE CALIFORNIA INDEPENDENT SYSTEM OPERATOR CORPORATION

The Department of Market Monitoring (DMM) of the California Independent System Operator Corporation (CAISO) submits these comments pursuant to the Assigned Commissioner's Scoping Memo and Ruling issued on December 18, 2023 on all Track 2 proposals filed in this proceeding.

I. Storage outages in the *Loss of Load Expectation Study for 2026*

Inaccurate accounting of battery storage availability will lead to inaccurate loss of load expectation results

DMM, and Lumen Energy through a contract with the California Public Utilities Commission (CPUC), have identified that outage rates for battery storage resources exceed what is currently incorporated into the *Loss of Load Expectation Study (LOLE) for 2026*. Such differences in modeled versus observed outage rates can lead to under procurement of capacity needed to meet reliability standards, and increase reliance on backstop procurement mechanisms.

DMM's availability accounting framework using bid-in capacity shows that during stressed grid conditions in 2023, storage had an average fleet-wide resource adequacy (RA)

availability around 88 percent to 90 percent of the full RA capacity.[1,2,3] This observed availability implies a 10 to 12 percent average fleet-wide derate. The Lumen Energy report, *Scaling Up and Crossing Bounds*, finds that during the evening peak hours, the average forced outage rate for summer months ranges from 11 to 13 percent.[4] This rate is up to two percent higher when averaged across all hours of the day.[5]

The summer forced outage rates used in the LOLE study, ranging from 1 to 8 percent for battery storage, are lower than what DMM and Lumen have empirically observed. DMM is concerned that the lower modeled rates will lead to an underestimation of the expected loss of load, and thus an under procurement to meet reliability standards. Such under accounting and under procurement poses a reliability risk, as well as creates inefficient procurement signals that may lead to an increased reliance on backstop procurement. This will become especially acute as the amount of battery capacity grows and increased reliance is placed on these resources to meet RA requirements.

DMM recommends the CPUC reassess their outage rate assumptions used in the 2026 LOLE study. Further, DMM recommends the CPUC consider the role of state-of-charge and storage availability in their LOLE study. A suite of reasons that impact state-of-charge

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[1] Due to few EEA+ days in 2023, in this analysis DMM is using restricted maintenance operation (RMO) hours, or more stressed conditions, which we refer to as RMO+ hours, and this includes any days that were declared RMO or EAA+.

[2] DMM has found that, on average, storage resources are on outage/derate to an availability of 88 percent of their RA capacity, but are bidding 90 percent of capacity: *Resource Adequacy Modeling and Program Design – Working Group Meeting*, CAISO, January 16, 2023 [*sic*], slides 71 and 74: https://www.caiso.com/InitiativeDocuments/Presentation-ResourceAdequacyModeling-ProgramDesignWorkingGroup-Jan162024.pdf

[3] DMM used the five highest priced days in 2023, and found approximately a 10 percent outage rate during the availability assessment hours: *2023 Special Report on Battery Storage,* CAISO DMM, July 16, 2024: https://www.caiso.com/documents/2023-special-report-on-battery-storage-jul-16-2024.pdf

[4] *California Public Utilities Commission Scaling Up and Crossing Bounds*, Lumen Energy Strategy, LLC. Prepared for the California Public Utilities Commission, May 1, 2024, p 30: https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/energy-division/documents/energy-storage/2024-05-01_lumen_scaling-up-and-crossing-bounds-reportfinal.pdf

[5] Ibid.

(e.g., bidding and market prices, ancillary services, cell imbalance, etc.) may reduce the availability of storage resources. For this reason, DMM recommends the CPUC consider a modeling approach that includes the interaction of resource availability and state-of-charge in the LOLE study.

II. Central procurement entity soft-offer cap

Local market power must be considered when developing a soft-offer cap for local RA through the central procurement entity (CPE)

As noted in DMM's comments on Track 1,[6] setting the CPE soft-offer cap at the capacity procurement mechanism (CPM) soft-offer cap, plus RA penalties, would far exceed actual going-forward fixed costs (GFFC), and potentially allow for local RA sellers to exert market power. DMM's 2023 annual report shows that in 2023, there were five local areas that had pivotal suppliers of local RA capacity.[7] Pivotal suppliers in these areas could potentially exert market power on the sale of local RA capacity.

Under this framework, the CPE's maximum willingness to pay for local RA capacity in these areas (i.e., the CPM soft-offer cap plus RA penalties) far exceeds the GFCC, and effectively allows the exercise of market power within that pricing range.[8] This concern is especially acute with an administratively set price that would send market information or signals that could allow sellers to bid their capacity above their true annual GFFC. Therefore, DMM suggests the CPUC not adopt the proposed soft-offer cap.

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[6] *Comments on Track 1 Proposals by the Department of Market Monitoring of the California Independent System Operator Corporation*, DMM, March 8, 2024: https://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M528/K047/528047424.pdf

[7] *2023 Annual Report on Market Issues & Performance*, DMM, July 29, 2024, p 206: https://www.caiso.com/documents/2023-annual-report-on-market-issues-and-performance.pdf

[8] If the CPE has the objective of procuring at least cost, it should be willing to pay no more than the cost of incurring the penalties associated with remaining deficient on capacity, and the later cost of CPM procurement at the CPM soft-offer cap price. Such a tradeoff may not be that clear, depending on the strength of the CPE's incentives to cost minimize and the allocation of deficiency penalties. However, absent other reasons to ensure sufficient procurement at any cost, incentives for the CPE to accept offers above this price are unclear. This is especially true given that the later need for CPM to cure deficiencies is not certain, and in recent years has not been observed even when the CPE is deficient. Therefore, the total cost of CPE deficiency may be even less.

Central procurement entity function

Local capacity obligations and the capacity procurement mechanism

The Central Procurement Entity (CPE) is tasked to ensure local capacity obligations are met above existing procurement. In response to discussion during the workshop about the interaction of the CPE and the CAISO CPM, and concern that deficiencies in the CPE have and would lead to CAISO backstop procurement, DMM highlights that the CPE is generally providing the requisite capacity to the CAISO.

From 2020-2023, there has only been one year with one local area that didn't have enough net qualifying capacity in the market to meet the local capacity requirement.[9] Moreover, the ISO did not use the capacity procurement mechanism (CPM) to procure for the local deficiencies, and only one percent of CPM procurement has been for local areas.[10,11] This observation highlights the uncertainty around the future need for CPM procurement, even when the CPE is deficient. This recent data suggests that recently observed levels of CPE deficiency are unlikely to translate to a future need for CPM procurement of local capacity.

III. Conclusion

DMM appreciates the opportunity to provide comments on R.23-10-011 Track 2 proposals in Commissioner's Scoping Memo and Ruling issued on December 18, 2023.

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[9] See DMM Annual Reports from 2020-2023. For years 2020 and 2021, see the "Local resource adequacy" section. For 2022 and 2023, see the "Local capacity requirements" section, and see Table 5.2 where the "total residual supply ratio" is less than one, e.g., *2023 Annual Report on Market Issues & Performance*, DMM, July 29, 2024, p 206: https://www.caiso.com/documents/2023-annual-report-on-market-issues-and-performance-jul-29-2024.pdf

[10] See DMM Annual Reports from 2020-2023, and the "Capacity procurement mechanism" section, e.g., *2023 Annual Report on Market Issues & Performance*, DMM, July 29, 2024, p 287: https://www.caiso.com/documents/2023-annual-report-on-market-issues-and-performance-jul-29-2024.pdf

[11] *Memorandum: Department of Market Monitoring comments on capacity procurement mechanism enhancements track 2*, DMM, September 13, 2023, p 3: https://www.caiso.com/documents/departmentofmarketmonitoringcomments-capacityprocurementmechanismenhancementstrack2-memo-sep2023_final.pdf

Respectfully submitted,

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