

Comments on Resource Adequacy Enhancements

October 5, 2023 Working Group

Department of Market Monitoring

October 20, 2023

The Department of Market Monitoring (DMM) appreciates the opportunity to comment on the *Resource Adequacy Enhancements October 5, 2023 Working Group*.¹ DMM supports the problem statements, principles, and goals outlined in the ISO's working group discussion paper, and agrees there is room for improvement. Resource adequacy (RA) rules should ensure that sufficient capacity with the characteristics needed to maintain system and local reliability is procured by load serving entities (LSEs), and is also made available operationally in the ISO markets.

DMM believes that RA enhancements should be based on improving the economic incentives for individual participants to procure sufficient capacity and make this capacity available operationally to the ISO markets. Some of the areas in which incentives can be improved include, but are not limited to: (1) incentivizing resource availability, (2) cost allocation in the capacity procurement mechanism (CPM), (3) the use of a forced outage in place of a planned outage, and (4) resource valuation as reflected in the ISO's net qualifying capacity (NQC) list.

Resource availability and performance

Resource availability incentives at the ISO currently fall under the resource adequacy availability incentive mechanism (RAAIM). Currently, the maximum possible monthly penalties and availability incentives are set at half of the CPM price, which is the ISO's backstop procurement mechanism. As capacity becomes more limited and prices increase, the difference between capacity payments and RAAIM penalties also increase, and DMM is concerned that the penalties have become insignificant compared to RA payments. DMM recommends revisiting the level of the RAAIM penalty, and has previously recommended the penalty be set significantly higher, especially under stressed system conditions.²

RAAIM is an availability incentive, as defined by bidding requirements, and DMM believes the incentive should be adapted to a performance incentive.³ The current incentive can lead suppliers to sell RA that is unavailable or that is likely to incur forced outages for critical periods of system or local needs. The adaptation of RAAIM to a performance-based policy could result in potentially very high penalties that

¹ *Resource Adequacy Enhancements – Discussion Paper*, CAISO, October 5, 2023: [DiscussionPaper-ResourceAdequacyWorkingGroup-Oct5-2023.pdf \(caiso.com\)](https://www.caiso.com/Documents/ResourceAdequacyWorkingGroup-Oct5-2023.pdf)

² *Comments by Department of Market Monitoring on Resource Adequacy Enhancements Issue Paper*, CAISO DMM, November 30, 2018: [DMMComments-ResourceAdequacyEnhancements-IssuePaper.pdf \(caiso.com\)](https://www.caiso.com/Documents/DMMComments-ResourceAdequacyEnhancements-IssuePaper.pdf)

³ *2022 Annual Report on Market Issues and Performance*, CAISO DMM, July 11, 2023, p. 249: [2022-Annual-Report-on-Market-Issues-and-Performance-Jul-11-2023.pdf \(caiso.com\)](https://www.caiso.com/Documents/2022-Annual-Report-on-Market-Issues-and-Performance-Jul-11-2023.pdf)

claw back a large portion of capacity payments when resources do not deliver on critical days. This type of mechanism could also better incentivize suppliers to sell highly available, and dependable, capacity up front.

Capacity procurement mechanism cost allocation

The capacity procurement mechanism is a backstop policy for the ISO to procure capacity in conditions of a shortfall. Capacity procurement obligations are allocated out to all local regulatory authorities (LRAs), and in cases of a deficiency, the ISO has the ability to procure on behalf of any deficient entity. However, since 2020, almost all (99%) of the resources procured using the CPM were for system-level capacity, and as a result these costs were allocated on a pro rata basis to all ISO entities, and not to the entity that was short first.⁴ Allocating the cost for backstop or substitute capacity procurement in this way does not create incentives for individual load serving entities (LSEs) to procure their full capacity requirements. DMM recommends the ISO reassess the cost allocation of the CPM to deficient entities to further incentivize LSEs to procure their requisite capacity requirement.

Planned to forced outages

Forced outages are defined as outages that are taken seven or fewer days from the start of the outage. When approving forced outages, CAISO operators may not currently be able discern whether the outage is required for immediate plant health, or whether the outage could be delayed. These outages requested within seven days of the start of the outage can lead to local or system instabilities and affect overall reliability. Therefore, if the outage is a discretionary maintenance outage, it is important the resource scheduling coordinator clearly identify it as such. DMM recommends the ISO enhance outage reporting requirements to more clearly require the resource scheduling coordinator to identify if a forced outage is necessary to avoid imminent damage to the plant, or if the forced outage is for discretionary plant maintenance that could be postponed for system reliability. In addition to this recommendation, increased penalties for outages, discussed above, should further increase the incentive of resources to perform when needed for reliability.

Resource capacity values

As presented in the working group discussion paper, the generation mix of the grid is changing, and DMM believes as a result, so should methods for determining resource capacity values. DMM recommends two considerations for the working group: (1) incorporate resource availability and/or performance into the net qualifying capacity of resources, and (2) incremental alignment to the California Public Utility Commission's (CPUC) slice-of-day format. The details of our recommendations are below, and DMM would be willing to present on either or both of these topics.

DMM believes it is important that the net qualifying capacity for a resource incorporates the availability or performance of a resource, similar to an unforced capacity framework (UCAP). DMM has long reported on the performance of RA resources, and as an example, in 2022, resources with must-offer obligations had an average capacity derate to 91% of their nameplate capacity during Energy Emergency

⁴ DMM Comments on CPM Enhancements Track 2 - Final Proposal, CAISO DMM, August 31, 2023: [DMM-Comments-on-CPM-Final-Proposal-Aug-31-2023.pdf \(caiso.com\)](https://www.caiso.com/Documents/DMM-Comments-on-CPM-Final-Proposal-Aug-31-2023.pdf)

Alert (EEA+) hours.⁵ UCAP policies have recently been proposed by the CPUC,⁶ and DMM recommends considering UCAP in the RA workshops.

Overall, DMM is concerned about the NQC that is provided to all resources, such as resources generally considered firm. Batteries and natural gas resources receive RA capacity that is their full nameplate capacity, even if they consistently fail to perform at their full nameplate capacity during critical net peak hours. Moreover, DMM is concerned about the NQC of use-limited resources, which are increasingly becoming the majority of resource adequacy capacity.

For example, Figure 1 shows a comparison of the 24-hour slice of day (SoD) accounting framework to the 2024 Tech Factors in the ISO's NQC list. It includes four months which represent the four seasons, and includes both wind and solar.⁷ The SoD framework is over 24-hours, so the x-axis has 24-hours for each of the two resource types for each of the four months. The y-axis is the capacity value's percent of the total nameplate capacity that would be attributed to the resource under different capacity valuation methods. The horizontal black line is the NQC used by the ISO. The blue line is the exceedance, or 24-hour NQC, methodology used by the CPUC, and it is generated from the last six years of production data.⁸ The blue line will be used in the CPUC's SoD accounting framework, and DMM seeks to highlight the current differences between the two accounting methodologies. The red-shaded area represents the availability assessment hours (AAHs), where the RAIM is applied, and these hours correlate with the typically difficult reliability hours during peak and net-peak load.

Use-limited resources are expected to do much of the charging for battery resources. DMM is willing to present on the historical behavior of batteries. DMM published an initial report on battery resources,⁹ but this analysis can be extended to look at their behavior in the SoD context. DMM understands there are a number of LRAs, and adopting the SoD concept will conflict with non-CPUC RA frameworks. However, DMM supports an incremental approach by the ISO, and suggests the ISO describe a timeline for implementing a comprehensive accounting framework, given the system-wide transition to use-limited resources.

⁵ *2022 Annual Report on Market Issues and Performance*, CAISO DMM, July 11, 2023, p. 249: [2022-Annual-Report-on-Market-Issues-and-Performance-Jul-11-2023.pdf](https://www.caiso.com/Documents/2022-Annual-Report-on-Market-Issues-and-Performance-Jul-11-2023.pdf) (caiso.com)

⁶ *Order Instituting Rulemaking, Agenda ID #21887*, CPUC, October 2023: <https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M519/K949/519949114.PDF>

⁷ The CPUC Exceedance values are for the recent October 4, 2023 update of exceedance values. Profiles are for wind in northern California, and solar tracking values for southern California.

⁸ Details of the methodology can be found here: *Decision Adopting Local Capacity Obligations for 2024-2026, Flexible Capacity Obligations for 2024, and Program Refinements*, CPUC ED, June 29, 2023. <https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M513/K132/513132432.PDF>

⁹ *Special Report on Battery Storage*, CAISO DMM, July 7, 2023: <https://www.caiso.com/Documents/2022-Special-Report-on-Battery-Storage-Jul-7-2023.pdf>

Figure 1 - Resource accounting between the CPUC and CAISO NQC list

