

Comments on Resource Adequacy Modeling and Program Design

April 29 and 30, 2024 Working Group

Department of Market Monitoring

May 21, 2024

The Department of Market Monitoring (DMM) appreciates the opportunity to comment on the *Resource Adequacy Modeling and Program Design* April 29 and 30, 2024 Working Group.¹ DMM supports the developments and stakeholder engagement in the working group process, and recommends the ISO move Tracks 1-3 out of the working group process and into the policy process.

DMM supports resource adequacy (RA) enhancements as the generation mix evolves on the CAISO system. Resource planning frameworks in California and the West must meet the needs of variable supply conditions and new technologies, while improving the economic incentives for market participants to procure sufficient and operationally available capacity for the ISO markets. Below, we reiterate previous comments to strengthen incentives across Tracks 1-3 of the working group process.

As discussed further in these comments, the areas DMM believes are ready for policy improvements include, but are not limited to: (1) resource accounting, (2) outage substitution, (3) resource adequacy availability incentives, and (4) backstop procurement. DMM agrees these policy issues are interrelated and ought to be addressed simultaneously.

Track 1: Modeling and default standards

DMM supports Track 1 moving into the policy process. The modeling effort, and the incorporation of default standards through default planning reserve margins (PRM) and resource accounting, will increase the efficiency and equity of the CAISO market. The modeling effort creates a framework and structure for the ISO to ensure there may be equitable procurement across the local regulatory authorities (LRA) within the CAISO footprint. DMM believes that regardless of modeling results, to have a vetted process in place for backstop, a default PRM, and default resource accounting provides for greater transparency moving forward.

We see the modeling effort as a necessary but subsequent process to the issues of unforced capacity (UCAP), outage substitution, the resource adequacy availability incentive mechanism (RAAIM), and capacity procurement mechanism (CPM). These policies are important as inputs and assumption to the modeling effort, and should be treated as such when moved out of the working group process.

¹ *Resource Adequacy Modeling and Program Design – Working Group Meeting*, CAISO, April 29-30, 2024: <https://www.caiso.com/InitiativeDocuments/Presentation-ResourceAdequacyModeling-ProgramDesign-Apr29-30-2024.pdf>

UCAP and Ambient Derates

DMM supports resource adequacy accounting based on UCAP, as it creates a framework that more accurately accounts for resource availability after derates and outages, to ensure that all resources during constrained hours will be able to provide for system reliability. Additionally, a UCAP framework levelizes the capacity valuation process across resource types to ensure a more fungible market.^{2,3}

DMM has commented on UCAP in many venues, and first and foremost recommends the ISO work with the California Public Utilities Commission in their UCAP formulation.⁴ In the formulation of UCAP, DMM has recommended using public and resource-level data, using all forced outages under the control of the scheduling coordinator (including ambient derates), and increased weighting on nearer years when calculating UCAP.^{5,6,7,8} The ISO discussion paper separates UCAP and ambient derate accounting.⁹ DMM believes ambient derate accounting falls under the umbrella of UCAP accounting. Additionally, DMM recommends particular attention be given to storage resources and their state-of-charge (SOC) limitations.^{10,11,12}

UCAP adoption will have important interactions with RAIM, which are discussed below.

² *Comments on Track 1 Proposals by the Department of Market Monitoring of the California Independent System Operator*, DMM, March 8, 2024: <https://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M528/K047/528047424.pdf>

³ *Comments on Resource Adequacy Modeling and Program Design*, CAISO DMM, February 27, 2024: <https://www.caiso.com/Documents/DMM-Comments-on-Resource-Adequacy-Modeling-and-Program-Design-Feb-13-2024-Working-Group-Feb-27-2024.pdf>

⁴ *Ibid*, p 1

⁵ *Ibid*, p 2

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

⁷ *Comments on Resource Adequacy Modeling and Program Design*, CAISO DMM, January 30, 2024: <https://www.caiso.com/Documents/DMM-Comments-on-the-Resource-Adequacy-Modeling-and-Program-Design-Jan-16-2024-Working-Group-Jan-30-2024.pdf>

⁸ *Comments on Resource Adequacy Enhancements Sixth Revised Straw Proposal – Phase 2A*, CAISO DMM, February 1, 2021: <https://www.caiso.com/Documents/DMMCommentsonResourceAdequacyEnhancements-SixthRevisedStrawProposal-Feb12021.pdf>

⁹ *Resource Adequacy Working Group Meeting – Updated Discussion Paper & Draft Recommendation Plan*, CAISO, April 29, 2024: <https://www.caiso.com/InitiativeDocuments/DiscussionPaper-ResourceAdequacyModeling-ProgramDesign-Apr29-2024.pdf>

¹⁰ *Comments on Resource Adequacy Enhancements Sixth Revised Straw Proposal – Phase 2A*, CAISO DMM, February 1, 2021: <https://www.caiso.com/Documents/DMMCommentsonResourceAdequacyEnhancements-SixthRevisedStrawProposal-Feb12021.pdf>

¹¹ *Comments on Resource Adequacy Modeling and Program Design*, CAISO DMM, January 30, 2024: <https://www.caiso.com/Documents/DMM-Comments-on-the-Resource-Adequacy-Modeling-and-Program-Design-Jan-16-2024-Working-Group-Jan-30-2024.pdf>

¹² *2022 Annual Report on Market Issues and Performance*, CAISO DMM, July 11, 2023, p 253: <https://www.caiso.com/Documents/2022-Annual-Report-on-Market-Issues-and-Performance-Jul-11-2023.pdf>

Track 2: Outage substitution and RAAIM reform

Outage Substitution

DMM continues to recommend the ISO enhance outage reporting requirements to more clearly require the resource scheduling coordinator to identify if a forced outage is necessary immediately for plant operation, or if the forced outage is for discretionary plant maintenance that could be postponed in the case of imminent system reliability concerns.¹³

DMM has identified that under the current outage substitution rules, resources are transferring their outages into the forced outage timeframe. While the substitution requirement correlates with increased forced outages, DMM caveats there may be other factors leading to increased forced outages. Other factors may include a significant increase in energy storage resource capacity, and use of forced outages by storage resources to manage resource operations.¹⁴ The implementation of UCAP will improve the incentives of outage substitutions transferring from the planned to forced timeframe. Despite the changing incentives, DMM believes it is worthwhile to enhance the outage reporting process to indicate the immediate needs of forced outages, thus allowing for more cogent outage reporting and substitution needs.

RAAIM Reform

DMM has recommended creating performance standards in place of availability standards, and believes this would further enhance planning and grid operations.^{15,16,17,18} DMM acknowledges this recommendation is not within the scope of discussion, but recommends RAAIM enhancements assess real-time incentives. Currently, RAAIM calculates average bidding availability over a month and assesses penalties and payments. Modifying the RAAIM structure to assess penalties and payments on a daily

¹³ *Comments by Department of Market Monitoring on Resource Adequacy Enhancements*, CAISO DMM, October 20, 2023: <https://stakeholdercenter.caiso.com/Comments/AllComments/5860a092-9299-4cf2-a3f7-60efa5105b32-org-bde68f42-bf0e-4842-b152-d0cc02a2140e>

¹⁴ *Comments on Resource Adequacy Modeling and Program Design*, CAISO DMM, February 27, 2024: <https://www.caiso.com/Documents/DMM-Comments-on-Resource-Adequacy-Modeling-and-Program-Design-Feb-13-2024-Working-Group-Feb-27-2024.pdf>

¹⁵ *2022 Annual Report on Market Issues and Performance*, CAISO DMM, July 11, 2023, p 249: <https://www.caiso.com/Documents/2022-Annual-Report-on-Market-Issues-and-Performance-Jul-11-2023.pdf>

¹⁶ *Comments by Department of Market Monitoring on Resource Adequacy Enhancements Issue Paper*, CAISO DMM, November 30, 2018: <http://www.caiso.com/InitiativeDocuments/DMMComments-ResourceAdequacyEnhancements-IssuePaper.pdf>

¹⁷ *Comments by Department of Market Monitoring on Resource Adequacy Enhancements*, CAISO DMM, October 20, 2023: <https://stakeholdercenter.caiso.com/Comments/AllComments/5860a092-9299-4cf2-a3f7-60efa5105b32-org-bde68f42-bf0e-4842-b152-d0cc02a2140e>

¹⁸ *Comments on Resource Adequacy Modeling and Program Design*, CAISO DMM, January 30, 2024: <https://www.caiso.com/Documents/DMM-Comments-on-the-Resource-Adequacy-Modeling-and-Program-Design-Jan-16-2024-Working-Group-Jan-30-2024.pdf>

basis would approximate a performance standard by creating short-term incentives for resource availability.

RAAIM penalties are assessed at 60 percent of the CPM soft-offer cap, 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.

In its current form, RAAIM interacts with the CPM because the RAAIM penalty price is linked to the CPM soft-offer cap. Since the CPM soft-offer cap may be subject to revision, the ISO and stakeholders may need to consider decoupling the RAAIM penalty price to the CPM. The CPM soft-offer cap is discussed in more detail in the final section of these comments.

The current iteration of RAAIM 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, or real-time availability, could result in potentially much higher penalties that claw back a large portion of capacity payments when resources do not deliver on critical days. This type of mechanism could better incentivize suppliers to sell highly available, and dependable, capacity up front. The current RAAIM framework has many interactions with UCAP that ought to be considered during RAAIM reform. DMM recommends RAAIM be enhanced to approximate a performance incentive.^{19,20}

Track 3: Backstop mechanisms

Capacity Procurement Mechanism

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 LRAs, and in cases of a deficiency, the ISO has the ability to procure on behalf of any deficient entity. In the previous CPM Enhancements Track 2 Final Proposal, the ISO stated it will begin in 2024 to work with stakeholders on CPM enhancements that will address structural changes to the CPM.²¹ DMM supports Track 3 of the

¹⁹ 2022 Annual Report on Market Issues and Performance, CAISO DMM, July 11, 2023, p 249:
<https://www.caiso.com/Documents/2022-Annual-Report-on-Market-Issues-and-Performance-Jul-11-2023.pdf>

²⁰ Comments by Department of Market Monitoring on Resource Adequacy Enhancements, CAISO DMM, October 20, 2023: <https://stakeholdercenter.caiso.com/Comments/AllComments/5860a092-9299-4cf2-a3f7-60efa5105b32-org-bde68f42-bf0e-4842-b152-d0cc02a2140e>

²¹ Capacity Procurement Mechanism Enhancements Track 2 - Final Proposal, CAISO DMM, August 17, 2023:
<https://www.caiso.com/InitiativeDocuments/Final-Proposal-Capacity-Procurement-Mechanism-Track2-Aug172023.pdf>

working group move to the policy process as discussed in the 2023 CPM Enhancements Track 2 discussion paper.²²

DMM has noted that since 2020, almost all (99 percent) of the resources procured using the CPM have been for system-level capacity, and as a result these costs were allocated on a pro rata basis to all ISO entities, and not directly to the entity that was short.²³ 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.

When the CPM soft-offer cap was designed over 13 years ago, the main goal of this cap was to protect against the exercise of local market power.²⁴ In practice, however, the CPM is now used almost entirely to procure system capacity in the context of a regional market. The current level of the monthly soft cap now represents a value for short term capacity payments during the peak months that appears to be supported by a relatively broad consensus of stakeholders – including suppliers and load serving entities. Stakeholders appear to agree that the CPM soft cap represents a reasonable cap for the peak summer months under current market and system conditions in the CAISO balancing area and the broader western regional market.

As noted in the ISO’s 2023 proposal to update the monthly soft-offer cap, numerous stakeholders requested that the ISO explore CPM-related changes beyond the monthly soft-offer cap and in the context of California’s resource adequacy program. The ISO committed to working with stakeholders beginning in 2024 on broader reforms to the CPM in the context of California’s resource adequacy program. DMM strongly supports this approach, as it will allow the ISO and stakeholders to focus efforts on a more comprehensive set of changes needed in the overall CPM and resource adequacy framework.

DMM recommends the ISO ensure the forthcoming policy issue paper (1) addresses market power mitigation in the CPM process when considering the CPM soft-offer cap, and (2) elaborates on the opportunity cost of resources that would bid into the CPM competitive solicitation process.

²² *Resource Adequacy Working Group Meeting – Updated Discussion Paper & Draft Recommendation Plan*, CAISO, April 29, 2024: <https://www.caiso.com/InitiativeDocuments/DiscussionPaper-ResourceAdequacyModeling-ProgramDesign-Apr29-2024.pdf>

²³ *DMM Comments on CPM Enhancements Track 2 - Final Proposal*, CAISO DMM, August 31, 2023: <https://www.caiso.com/Documents/DMM-Comments-on-CPM-Final-Proposal-Aug-31-2023.pdf>

²⁴ *Capacity Procurement Mechanism, and Compensation and Bid Mitigation for Exceptional Dispatch Revised Draft Final Proposal*, CAISO, September 15, 2010, p 35: <http://www.caiso.com/Documents/RevisedDraftFinalProposal15-Sep-2010.pdf>