Comments on Resource Adequacy Modeling and Program Design Track 2: Outage and Substitution Straw Proposal

Department of Market Monitoring

September 19, 2025

Overview

The Department of Market Monitoring (DMM) appreciates the opportunity to comment on the *Resource Adequacy Modeling and Program Design Track 2 Outage and Substitution Straw Proposal* and *Meeting* dated August 26 and 28, respectively.[1,2] In these comments, DMM adds to our previous comments in response to the *Resource Adequacy Modeling and Program Design* (RAMPD) *Working Group* dated March 13, 2025.[3] DMM includes additional comments on the following three issues:

- **Outage substitution pool.** DMM continues to support the creation of an outage substitution pool to increase market efficiency. However, DMM cautions against the approach outlined in the straw proposal, which does not appear to be the most efficient design and which may lead to strategic bidding that does not reflect the true cost and value of the needed substitute capacity.
- **Outage substitution pool alternatives.** DMM continues to suggest an outage substitution pool design based on a reverse second price auction. DMM believes this design would provide incentives for scheduling coordinators to reveal their true cost and value of the substitution capacity, and would provide improved market efficiency and reduce the potential for market power.
- **"Like-for-like" capacity substitution.** DMM agrees the ISO should not make like-for-like capacity determinations in the outage substitution pool. However, the ISO should continue to work with the local regulatory authorities to ensure that capacity accounting appropriately reflects the contribution of a resource.

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[1] *Resource Adequacy Modeling and Program Design Track 2: Outage and Substitution Straw Proposal*, California ISO, August 26, 2025: https://stakeholdercenter.caiso.com/InitiativeDocuments/Track-2-Straw-Proposal-Resource-Adequacy-Modeling-and-Program-Design-Aug-26-2025.pdf

[2] *Resource Adequacy Modeling and Program Design*, California ISO, August 28, 2025: https://stakeholdercenter.caiso.com/InitiativeDocuments/Presentation-Resource-Adequacy-Modeling-and-Program-Design-Aug-28-2025.pdf

[3] *Comments on Resource Adequacy Modeling and Program Design Working Group*, Department of Market Monitoring, March 13, 2025: https://www.caiso.com/documents/dmm-comments-on-resource-adequacy-modeling-and-program-design-working-group-mar-13-2025.pdf

Comments

Outage substitution pool

Current market design incentivizes load serving entities to hold back resource adequacy (RA) capacity from the market to avoid potential penalties from the outage substitution requirement for planned outages. Holding back capacity creates an artificial tightness to the RA market, which the ISO and stakeholders have identified could be overcome with changes to outage substitution rules. To solve the issue and to develop specific objectives for outage substitution changes, the ISO and stakeholders decided that the outage substitution rules should meet the five objectives:

- Efficiency and usability
- Incentive alignment
- Regulatory alignment
- Reliability and certainty
- Fairness, simplicity, and durability

DMM agrees with these principles, but also recommends that outage substitution rules should increase fungibility and lower transaction costs to finding substitution capacity. An outage substitution pool that meets these criteria would increase the efficiency of outage substitutions, eliminate the need for individual entities to hold surplus capacity to cover potential short-term outages, and decrease the reliability risk.[4]

The ISO has proposed a decentralized matching system that would function like a bulletin board for buyers and sellers to request or provide substitution capacity. This marketplace would simply be a central clearinghouse to share information for direct bilateral transactions. The ISO would not facilitate any transactions, but would simply assist in information sharing to reduce a portion of the soft transaction costs of finding substitution capacity. The ISO has likened this marketplace to "StubHub".

The marketplace proposed by the ISO would facilitate information sharing for needs and offerings (capacity available, dates, and prices) and operate between T-45 and T-8 days from the start of the deadline for capacity showings. The interface would have a modern "shopping place" interface to facilitate the transactions, where market participants would be trading volumes on a daily basis during the operating period. Upon completion of the transaction, the marketplace would match the buyers and sellers, and the transactions would occur bilaterally between the buying and selling scheduling coordinators. The advantages of the marketplace would be decreased informational frictions for scheduling coordinators to find replacement capacity. Otherwise, the marketplace would be like the current bilateral system, but with increased informational transparency.

[4] *Comments on Resource Adequacy Modeling and Program Design Working Group*, Department of Market Monitoring, March 13, 2025: https://www.caiso.com/documents/dmm-comments-on-resource-adequacy-modeling-and-program-design-working-group-mar-13-2025.pdf

DMM understands the proposed marketplace meets the objectives detailed in the straw proposal. However, with this marketplace design, DMM is concerned about the tradeoff between increased information and market clearing prices, and economic efficiency.[5]

By revealing prices on both the supply and demand side, the proposed marketplace will allow for price transparency, but in cases of tight supply conditions could provide sufficient information to exert market power up to the upper end of the potential value of substitute capacity to buyers. This upper end is the financial impact of incurring the resource adequacy availability incentive mechanism (RAAIM) penalty instead of purchasing substitute capacity. The goal of the substitution pool and marketplace is to avoid scheduling coordinators relying on the outside option, which is currently forced outages that incur penalties from the RAAIM. This would compromise reliability and economic efficiency – two goals the proposal should seek to mitigate.

Alternate outage substitution pool design

DMM has proposed an approach to outage substitution pool design based on a reverse second price auction.[6,7] The advantage of such an auction is buyers and sellers are incentivized to reveal their true reservation prices for substitution capacity non-publicly, as opposed to publicly under the current proposal. Publicly revealing the price and quantity on both the supply and demand side of a market can lead to a strategic game of pricing that does not reveal true reservation (or opportunity) cost and value of capacity for buyers and sellers. This leads to an economically inefficient market. This is the current formulation of the outage substitution pool proposal preferred by the ISO.

Conversely, a reverse second price auction would be more economically efficient in that it incents the showing of resources, and is a reliable process for buyers, sellers, and the ISO. The theoretical structure of the auction will reduce search and coordination frictions, reduce market power concerns, and be designed to disincentivize strategic interactions between market participants. A reverse second price auction elicits true reservation prices by market participants, and results in an economically efficient outcome known as a Nash equilibrium, where no participant could be better off by choosing a different strategy.[8]

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[5] *Resource Adequacy Modeling and Program Design Track 2: Outage and Substitution Straw Proposal*, California ISO, August 26, 2025: https://stakeholdercenter.caiso.com/InitiativeDocuments/Track-2-Straw-Proposal-Resource-Adequacy-Modeling-and-Program-Design-Aug-26-2025.pdf

[6] *Outage substitution capacity pool auction: A theoretical framework*, Department of Market Monitoring, February 11, 2025: https://www.caiso.com/documents/presentation-outage-substitution-dmm-feb-11-2025.pdf

[7] *Comments on Resource Adequacy Modeling and Program Design Working Group*, Department of Market Monitoring, March 13, 2025: https://www.caiso.com/documents/dmm-comments-on-resource-adequacy-modeling-and-program-design-working-group-mar-13-2025.pdf

[8] Vickrey, William. "Counterspeculation, Auctions, and Competitive Sealed Tenders." *Journal of Finance,* col. 16, no. 1, pp 8-37.

The ISO has indicated the design of the auction would be exceedingly complicated and proposed an alternative design in their *Alternative Approach 1* that approximates the reverse second price auction.[9] The complications mentioned in the straw proposal are that the timing of the auction run and the coordination of the length of procurement of the capacity would be infeasible.

DMM suggests that the product purchased in the auction could be analogous to the ISO's preferred option in the straw proposal, but use the auction mechanism instead. This would require the auction clearing on a unit of capacity per day, just as the proposed marketplace option in the ISO's currently preferred design. The main difference is the auction would clear resources with the highest marginal value for substitute capacity, and bid prices would not be revealed to market participants. This will ensure the economic efficiency of the market, in addition to the objectives outlined in the straw proposal.[10]

DMM recommends the ISO consider an alternate design rather than the currently proposed design as a means of promoting greater market efficiency and achieve a cost minimizing outcome. The currently recommended approach does not ensure cost minimization, and may even lead to the ability of sellers to exert market power. DMM recommends these concerns be addressed prior to the recommended approach moving forward.

Like-for-like capacity substitution

DMM continues to support creating a set of capacity accounting methodologies that produce like-for-like capacity accounting across the RA resources.[11] The ISO stated they will not be requiring a like-for-like standard. However, since outage substitutions are for RA capacity, this highlights the need to ensure that RA capacity accounting is treated on a like-for-like basis across resource types.

In Track 1 of the RAMPD initiative, the ISO has developed a set of default capacity accounting techniques that will be used if a local regulatory authority (LRA) does not provide their own resource valuations.[12] Both the LRAs and the ISO should work to ensure that the capacity valuation of resources should possess a like-for-like quality in its overall valuation, or contribution to reliability in the CAISO system. DMM recommends the ISO continue to work with, and support, LRA determination of robust capacity valuations to ensure grid reliability.

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[9] *Resource Adequacy Modeling and Program Design Track 2: Outage and Substitution Straw Proposal*, California ISO, August 26, 2025: https://stakeholdercenter.caiso.com/InitiativeDocuments/Track-2-Straw-Proposal-Resource-Adequacy-Modeling-and-Program-Design-Aug-26-2025.pdf

[10] Please see previous materials from DMM for further market design principles, and the properties that provide for improved market efficiency and cost reductions.

[11] *Comments on Resource Adequacy Modeling and Program Design Working Group*, Department of Market Monitoring, March 13, 2025: https://www.caiso.com/documents/dmm-comments-on-resource-adequacy-modeling-and-program-design-working-group-mar-13-2025.pdf

[12] *Resource Adequacy Modeling and Program Design, Modeling and Default Rules (Track 1) Draft Final Proposal*, California ISO, August 25, 2025: https://stakeholdercenter.caiso.com/InitiativeDocuments/RAMPD-Track1-DraftFinalProposal-final.pdf