Comments on Storage Bid Cost Recovery and Default Energy Bids Enhancements

Revised Draft Final Proposal for Track 1

Department of Market Monitoring

October 23, 2024

Summary

DMM appreciates the opportunity to comment on the *Storage Bid Cost Recovery and Default Energy Bids Enhancements Revised Draft Final Proposal for Track 1*.[1]

Changes to current bid cost recovery (BCR) rules are needed to account for battery state-of-charge (SOC) constraints that can restrict how the market can dispatch battery storage resources, regardless of submitted bids. Under the current BCR design, SOC constraints can create market inefficiencies and reliability issues, as well as the potential for gaming of BCR payments. The Track 1 proposal should reduce the potential for significant losses from gaming of BCR payments. However, this proposal will not completely eliminate the potential for gaming of BCR payments. Further, because the Track 1 proposal modifies the bid cost recovery calculation in a way that is inconsistent with the bids used to determine market awards, the full effects that the proposal might have on market and settlement outcomes are uncertain.

DMM does not oppose the Track 1 proposal as a temporary short term measure. However, DMM strongly encourages the ISO to continue working on a more complete and effective solution to the core battery BCR problems, so that the temporary Track 1 proposal can be replaced as quickly as possible. A more complete and effective revision to BCR rules for storage resources should address gaming concerns and eliminate inappropriate BCR payments, and also eliminate the bidding incentives and potential reliability issue created by the current BCR design.

Comments

The Track 1 proposal could limit potential gaming while the ISO develops a more complete approach

The ISO has noted that relatively high (or low) bids can be used strategically to inflate BCR payments in some circumstances. The Track 1 proposal will limit the bids used in the real-time bid cost recovery calculation from falling below certain thresholds on decremental schedules, or above certain levels on incremental schedules.

DMM views the Track 1 proposal as an incomplete approach to addressing storage BCR which could have some unanticipated market impacts. However, the proposal can protect against resources inflating BCR payments when submitting bids outside of the proposed bid limits to be used in the BCR settlement (e.g., by submitting bids up to the $1,000 bid cap or down to the -$150 bid floor). This mitigating effect

[1] *Storage Bid Cost Recovery and Default Energy Bid Enhancements Revised Draft Final Proposal for Track 1*, California ISO, October 10, 2024: https://stakeholdercenter.caiso.com/InitiativeDocuments/Revised-Draft-Final-Proposal-Storage-Bid-Cost-Recovery-and-Default-Energy-Bids-Enhancements-Oct-10-2024.pdf

should provide some market benefit if Track 1 is adopted on a temporary basis while the ISO develops more complete and effective changes to BCR rules for storage resources.

DMM agrees with stakeholders that the Track 1 proposal should be temporary

DMM agrees with the general consensus of stakeholders and the ISO that the Track 1 proposal should be a temporary measure, and that there should be a strong commitment by the ISO to immediately continue working on a more complete solution to revise storage BCR. This commitment is needed because the Track 1 proposal:

1. Does not address the underlying core efficiency issues,
2. Removes the link between BCR and bids used in the market, and
3. Still leaves the potential for gaming of BCR payments.

More details on these three points are in the comments below.

The Track 1 proposal does not address core efficiency issues of the current BCR rules

DMM continues to recommend that the ISO address the real-time bidding incentives created by the current BCR design for batteries. A primary purpose of BCR is to incentivize resources to submit bids that accurately reflect actual costs, so that the market optimization achieves efficient market outcomes. The current BCR design for batteries does the opposite, and instead creates incentives to bid inconsistent with real-time opportunity costs in hours preceding day-ahead schedules. DMM encourages the ISO to continue exploring alternate methods of identifying state-of-charge (SOC) insufficiency, so that the core problem in the BCR design can be addressed by creating incentives for storage resources to submit bids reflecting expected real-time intraday opportunity costs.

DMM also continues to recommend that the ISO improve storage default energy bids (DEBs) to vary across different hours of the day and better reflect real-time opportunity costs. These enhancements would lead to a storage DEB that could be higher in some hours, but lower in other hours, as intraday opportunity costs change throughout the operating day.

The Track 1 proposal removes the link between bids used to dispatch units and bid costs used to determine BCR

BCR is meant to ensure the payments a resource receives are consistent with the bids used in the market optimization to determine market awards. Current BCR rules do not consider how state-of-charge constraints can prevent the market optimization from dispatching batteries based on bid costs. Market awards for storage resources may be driven by state-of-charge limitations, but remain eligible for BCR despite not being the result of the market optimization.

The ISO initially aimed to solve this core problem by removing BCR eligibility in cases where the market was not choosing the awards. A complete and effective solution should approach the problem this way, by addressing the core problem caused by the SOC constraints. The interim Track 1 proposal does not address the core problem. Instead, Track 1 proposes using different bid prices in the BCR calculation than were used to clear the market—even in cases where SOC constraints do not bind. It is not clear

how removing the link between the bid prices used in the market and those used in the BCR calculation will impact bidding incentives, or market and settlement outcomes.[2]

The Track 1 proposal still leaves the potential for gaming

Under the current BCR design, total real-time bid cost recovery can be maximized by strategically submitting different bid prices across hours. The Track 1 proposal can still result in the BCR calculation applying different bid prices across hours or intervals. When looking at total market and BCR settlements, these different bid prices can cause a resource to end up making net payments to the ISO in real-time, or to end up receiving extra payments through BCR.

Because the resource can still receive extra payments through BCR, may have an idea of the bid prices that could be used in the BCR calculation, and can still exercise significant control over dispatch through various parameters specific to storage resources, there is still a potential for BCR gaming under the Track 1 proposal. Therefore, while the Track 1 proposal does mitigate the costs of gaming, it does not remove the potential for BCR gaming.

The Track 1 proposal for BCR mitigation should be applied to all intervals

Some stakeholders questioned the ISO proposing to apply the bid cost adjustments in real-time intervals without corresponding day-ahead schedules (i.e., those intervals with 0 MW day-ahead schedules). This concern overlooks two points.

First, the ability to game from SOC-induced buy or sell backs of day-ahead schedules stems from the differences in the bid costs used between intervals in the BCR calculation. Applying the proposed limits on bids used in the BCR calculation to only the intervals with non-zero day-ahead schedules would still give resources significant influence over this difference, and undermine the ability of the proposed measures to protect against BCR gaming.

Second, there are cases where SOC constraints can induce uneconomic dispatches that can create inappropriate BCR and opportunities for gaming even when day-ahead schedules are zero. Not implementing the Track 1 measures in these intervals would offer no protection from gaming in these cases.

If the ISO chooses to adopt the Track 1 proposal, the ISO should apply the Track 1 measures in all intervals. Not doing so would significantly reduce the protections against gaming that are the purpose of the interim Track 1 measures.

Issues related to local market power mitigation

In earlier stages of this initiative, the ISO proposed to eliminate BCR eligibility during intervals where SOC was insufficient to meet a day-ahead schedule. The stakeholder process raised the issue of whether the ISO's current local market power mitigation might undermine or offset the efficiency and reliability benefits that would result from the modifications initially proposed by the ISO, such that it would not be worth undertaking these BCR changes without changes to the current storage default energy bids (DEBs).

[2] There are cases where the submitted bid is still used in the BCR calculations but also cases where it will not be.

To address this issue, DMM analyzed the actual and potential impacts of bid mitigation on the dispatch of batteries using market data from Restricted Maintenance Operations (RMO) days in summer 2023 and 2024. Based on this analysis, DMM does not believe that mitigation using the current default energy bids for storage resources would significantly limit the efficiency and reliability benefits of the ISO's initial proposal to eliminate BCR eligibility when SOC is insufficient to meet a day-ahead schedule.

The ISO has indicated that it is no longer pursuing a proposal to eliminate BCR during intervals of SOC insufficiency in Track 1. DMM understands that the ISO is choosing an alternative approach to Track 1 for reasons unrelated to mitigation. DMM agrees that mitigation concerns would not be a reason to choose a different approach to Track 1, as DMM's analysis does not support the delay or deferral of implementing the ISO's initial proposal on the basis of needed enhancements to the storage DEB. While the storage DEB could be enhanced, the current formulation of the storage DEB appears sufficient to minimize the instances where mitigation leads to early dispatch that ultimately leads to future interval SOC insufficiency.

Mitigation may still result in financial losses to a battery due to SOC insufficiency in some intervals. While DMM's analysis suggests such losses would be relatively limited overall, such losses might be more significant for certain resources. Therefore, additional settlement provisions are needed to prevent revenue losses when a storage resource's bids are mitigated, causing them to have insufficient SOC to meet day-ahead schedules. As noted by the Market Surveillance Committee (MSC), such provisions could be based on current settlement provisions that were developed to compensate batteries for any lost revenues due to exceptional dispatches issued to hold state-of-charge.