Comments on RDRR Bidding Enhancements – Track 2
Second Revised Straw Proposal

Department of Market Monitoring

February 17, 2022

Summary

The Department of Market Monitoring (DMM) appreciates the opportunity to comment on the *RDRR Bidding Enhancements – Track 2 Second Revised Straw Proposal*.[1]

In this initiative, the CAISO proposes an approach for discrete reliability demand response resources (RDRRs) to avoid infeasible real-time dispatch by automatically rerating their minimum operating level (PMIN) to a value near the upper economic limit, and inserting a non-zero minimum load cost calculated from energy bids. The CAISO also proposes to raise the size cap for discrete RDRRs from 50 MW to 100 MW, and to allow exceptions to the cap under specific circumstances.

On the issue of minimum load costs for RDRRs, DMM supports an approach to RDRR modeling that allows these resources to reflect both an accurate PMIN and accurate costs of operating at minimum load. A more flexible approach could facilitate similar outcomes for discrete resources, while allowing resource-specific inputs to accommodate physical and cost characteristics of a wider range of both discrete and continuous resources. If the CAISO proposal ultimately facilitates RDRR bids and/or minimum load costs that reflect the costs of the underlying RDRR program, it will be important for CAISO to have measures in place to assess the reasonableness of bids or minimum load cost submissions.

DMM agrees that the detrimental pricing and reliability impacts of increasing the discrete RDRR size cap are mitigated when discrete resources are considered to have a dispatchable range of only 0.1 MW below their upper economic limit in both the pricing and scheduling run. However, DMM encourages the CAISO to keep in mind the continued potential for detrimental market impacts from large discrete RDRR, should the CAISO ultimately implement a more general and resource specific approach to reflecting RDRR PMIN.

[1] *RDRR Bidding Enhancements – Track 2 Second Revised Straw Proposal*, California ISO, January 26, 2022: http://www.caiso.com/InitiativeDocuments/SecondRevisedStrawProposal-ReliabilityDemandResponseResourceBiddingEnhancements-Track%202.pdf

Comments

I. RDRR "Infeasible Dispatch" and Minimum Load Costs

A more flexible approach to modeling RDRR minimum load costs could facilitate outcomes similar to the proposal for discrete resources, while allowing resource-specific inputs that accommodate characteristics of a wider range of both discrete and continuous resources

The CAISO is continuing to propose that for discrete RDRR without day ahead schedules, the CAISO will automatically adjust the minimum operating limit (PMIN) to a value just below the upper economic limit of the bid. The CAISO then proposes to use existing PMIN rerate technology to calculate minimum load cost as the energy bid price multiplied by the upper economic limit.

DMM agrees that the proposal will avoid the perception by the market optimization that discrete RDRRs are "free" to commit, while also avoiding infeasible movements in real-time back and forth between a 0 MW PMIN and the upper economic limit. DMM understands that many or all existing discrete RDRRs do not have a minimum load level less than full output, and that the automatic PMIN rerate proposed by CAISO may reasonably reflect characteristics of those resources. Although the CAISO's proposal may address issues of infeasible dispatch for the current pool of RDRRs, the proposal does not provide a general framework for potential future RDRRs that may not share the same characteristics as the current pool of discrete RDRRs. Further, the proposal does not address potential infeasible dispatches of continuous RDRRs.

The CAISO states that it does not plan to extend the functionality to continuous resources, since a resource registering as continuous indicates that it can operate between PMIN and PMAX. DMM agrees that a continuous resource should be expected to be able to achieve a range of dispatch levels between its minimum and maximum output. However, a resource could still have a non-zero PMIN while meeting the definition of a continuous resource. When these resources are unable to reflect non-zero minimum load costs and set a PMIN of 0 MW as a result, "free commitments" and infeasible dispatches remain a possible outcome.

DMM does not suggest that the CAISO extend the current proposal to continuous resources. Rather, DMM suggests that all RDRR resources be able to specify an accurate, resource-specific PMIN, and not be dependent on automatic PMIN rerates by the ISO to be able to reflect minimum load costs. A more flexible approach could facilitate outcomes similar to the proposal for discrete resources, while allowing resource-specific inputs that accommodate physical and cost characteristics of a wider range of both discrete and continuous resources.

DMM understands that for many scheduling coordinators, RDRR bids are frequently not driven by cost. However, scheduling coordinators attempting to better align RDRR bids with actual costs of dispatching the RDRR program – and CAISO developing a framework to accept such bids -- may support more efficient market outcomes in the day-ahead market and in real-time emergency situations.

Should the CAISO proposal ultimately facilitate RDRR bids and/or minimum load costs that reflect the costs of the underlying RDRR program, it would be important for CAISO to have measures in place to assess the reasonableness of bids or minimum load cost submissions.

II. RDRR Registration

DMM encourages the CAISO to consider the continued potential for detrimental market impacts from large discrete RDRR, should the CAISO ultimately implement a more general approach to reflecting RDRR PMIN and minimum load costs

In the Second Revised Straw Proposal, the CAISO proposes to raise the size cap of discrete RDRR from 50 MW to 100 MW. The CAISO is also proposing to allow exceptions to the size cap under certain circumstances. Stakeholders have indicated that such changes are necessary to accommodate resources that cannot be split into smaller resources for operational or safety reasons.

While the CAISO has acknowledged the potentially detrimental market effects of raising the RDRR size cap, the CAISO states that these impacts are mitigated by the proposal to automatically rerate the PMIN and reflect a non-zero estimate of minimum load cost. As such, the proposal to increase the size cap of discrete RDRR is conditional on the proposal to automatically rerate PMIN and construct an estimate of minimum load cost.

DMM appreciates the CAISO's consideration of the potential market impacts of raising the discrete RDRR size cap in the absence of any mitigating measures. The CAISO acknowledges that when a discrete resource sets prices in the pricing run, it will often set a higher price than the price that would be set by the most expensive continuous resource dispatched in the scheduling run based on its marginal cost. The CAISO further acknowledges that this inefficiency will create incentives for some continuous resources to deviate from dispatch instructions, potentially leading to reliability issues. As DMM noted in previous comments, increasing the 50 MW cap on discrete RDRR would exacerbate the detrimental impacts that allowing discrete resources to set price has on incentives for other continuous resources to follow ISO dispatch.

DMM agrees that when discrete resources are considered to have a dispatchable range of only 0.1 MW below their upper economic limit in both the pricing and scheduling run, the detrimental pricing and reliability impacts may be mitigated. However, relying on this approach to mitigate detrimental market outcomes associated with larger discrete resources locks the CAISO into one particular approach of reflecting a non-zero minimum load that may not be well suited for all resources.

As DMM notes earlier in these comments, a more general approach to reflecting resource specific RDRR PMIN may be preferred to better capture the physical characteristics of a wider range of resources. Under a more general approach, as the difference between the discrete RDRR PMIN and upper economic limit grows, the potential for detrimental market impacts also

increases. DMM encourages the CAISO to keep in mind the continued potential for detrimental market impacts from large discrete RDRR, should the CAISO ultimately implement a more general and resource specific approach to reflecting RDRR PMIN and minimum load costs.