



# Memorandum

**To:** ISO Board of Governors and WEIM Governing Body

**From:** Anna McKenna, Vice President of Market Policy and Performance

**Date:** July 13, 2022

**Re:** Decision on reliability demand response resource bidding enhancements – phase 2

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***This memorandum requires ISO Board of Governors and WEIM Governing Body action.***

## EXECUTIVE SUMMARY

Management proposes two changes to the ISO real-time market rules related to reliability demand response resources (RDRRs). These enhancements will result in the real-time market better respecting RDRRs' operational characteristics, which will enable the resources to be dispatched through the market instead of through the current practice of exceptional dispatch. Dispatching RDRRs through the market will provide enhanced pricing when these resources are dispatched. Both of these changes apply to RDRRs modeled and dispatched under the ISO's "discrete dispatch" option for RDRRs. The discrete dispatch option specifies that the real-time market only dispatch an RDRR to its full capacity.

First, Management proposes to ensure that real-time market dispatches respect the maximum number of times a discrete dispatch RDRR can be dispatched per day, which is generally once. This will be accomplished by modeling a minimum load for discrete dispatch RDRRs, which will prevent the real-time market from producing infeasible dispatches that dispatch these resources back and forth between reducing and not reducing load in consecutive market intervals.

Second, Management proposes to allow discrete dispatch RDRRs to be up to 100 MW in size, or larger if they meet certain criteria. The ISO currently limits the discrete dispatch option to RDRRs no larger than 50 MW. This change will allow the utilities to better reflect the actual size of their demand response resources.

The enhancements proposed in this memorandum result from the second phase of the ISO's *Reliability Demand Response Resource Bidding Enhancements* stakeholder initiative and are specifically designed to address certain stakeholder concerns that the

current design does not adequately respect the program characteristics of discrete dispatch RDRRs. The ISO Board of Governors and WEIM Governing Body already approved Management's proposed changes from the first phase of this initiative on March 9, 2022, which pertained to energy bid prices for RDRR energy bids when the ISO is accepting energy bids up to \$2,000/MWh. FERC approved the ISO's proposed changes on May 24, 2022.

***Moved, that the ISO Board of Governors and WEIM Governing Body approve the reliability demand response resource bidding enhancements phase 2 proposal as described in the memorandum dated July 13, 2022; and***

***Moved, that the ISO Board of Governors and the WEIM Governing Body authorize Management to make all necessary and appropriate filings with the Federal Energy Regulatory Commission to implement the proposal described in the memorandum, including any filings that implement the overarching initiative policy but contain discrete revisions to incorporate Commission guidance in any initial ruling on the proposed tariff amendment.***

## **BACKGROUND**

The ISO implemented the RDRR product in its market in 2012 as a result of a multi-party settlement approved by the California Public Utility Commission (CPUC) to integrate utility retail emergency-triggered demand response programs into the ISO market. These are programs such as interruptible industrial, air-conditioning, and agricultural pumping load programs. These programs generally limit the number of times the utility can call on the load reduction.

The 2012 CPUC RDRR settlement also provided that utilities would have the option to specify that the ISO could only dispatch an RDRR to its full potential load reduction. The ISO subsequently implemented this through market rules that allow a utility to elect the ISO model and dispatch an RDRR under either the "discrete dispatch" or "continuous dispatch" option. The ISO real-time market can only dispatch discrete dispatch RDRRs to the full amount of load reduction bid into the real-time market. For example, if the real-time market can only dispatch a 50 MW discrete dispatch RDRR with a 50 MW energy bid in the real-time market, the market could only dispatch it to 0 MW of load reduction or 50 MW of load reduction. In contrast, the "continuous dispatch" option indicates the RDRR can operate anywhere in its operating range and may be dispatched either in the day-ahead or real-time market. Additionally, the ISO market rules do not currently allow the real-time market to model a minimum operating level and associated costs for RDRRs.

The utilities must submit energy bids for RDRRs to the ISO's real-time market that are priced at 95 percent of the ISO's energy bid cap. However, these resources are not automatically dispatched and the ISO only enables RDRRs for dispatch in the real-time market when it has declared an energy emergency alert.

Given the inability of the ISO market rules to account for these RDRR operational limitations, ISO operators have in the past relied on exceptional (manual) dispatches to access these resources during tight supply conditions. As part of the analysis of the August 2020 load shedding events, the ISO identified that this practice could suppress prices during tight supply conditions. As part of the Market Enhancements for Summer 2021 Readiness initiative, Management identified that market rule enhancements were needed to enable RDRRs to be dispatched through the market, which leads to inefficient pricing during tight supply conditions. After implementing these enhancements, stakeholders identified the issues related to discrete dispatch RDRRs addressed in this memorandum.

## **PROPOSAL**

The first change Management proposes to how the ISO operates RDRRs addresses a situation that can occur where the real-time market effectively does not respect the maximum number of times a discrete-dispatch RDRR can respond to reduce load per day, which is generally once. For example, the real-time market may currently dispatch a 50 MW discrete dispatch RDRR to 50 MW of load reduction in one market interval, 0 MW of load reduction in the next market interval, and then back to 50 MW of load reduction in the third market interval. This is problematic because, although the RDRR is modeled as capable of 50 MW of load reduction for all three intervals, its retail operational characteristics actually prevent it from reducing load a second time after being dispatched to 0 MW.

This back and forth dispatch occurs because a constraint in the real-time market that limits the number of times the market can start a resource over a day is ineffective for discrete dispatch RDRRs. This is because RDRRs are not currently allowed to have a minimum load cost value modeled in the market. Consequently, the real-time market can dispatch a discrete dispatch RDDR to a 0 MW load reduction in an interval after the real-time market has dispatched it to reduce load, and then subsequently dispatch it to reduce load again at no cost. In this case, the real-time market sees the dispatch to 0 MW as merely dispatching the RDRR to its minimum operating level and the real-time market does not see the subsequent dispatch to reduce load as another "start." However, the utilities' retail demand response program rules view the subsequent dispatch to reduce load as a second dispatch to reduce load. This would exceed the maximum number of load reduction events allowed under the utility's program if, for example, the program specified load was only allowed to be reduced once per day.

Management proposes to correct this back and forth dispatch by modeling a minimum load for discrete dispatch RDRRs in the real-time market. This minimum load value will be just below the RDRR's load reduction bid into the market for an hour. For example, if 50 MW of energy bids have been submitted for a discrete-dispatch RDRR, the real-time market would model a 49.9 MW minimum load. This will prevent the real-time market from sending dispatches to discrete-dispatch RDRRs that alternate back and forth between reducing load and a 0 MW load reduction. The bid price the market will use for the minimum load amount will be the energy bid price the scheduling coordinator submitted to the real-time market for the RDRR.

The second change Management proposes is to increase the maximum allowable size of discrete dispatch RDRRs from 50 MW to 100 MW. This change was in response to stakeholder requests to allow them to better reflect the actual size of their RDRRs in the real-time market. Management also proposes the ISO would also allow discrete dispatch RDRRs larger than 100 MW if the scheduling coordinator attests the RDRR meets certain criteria and the ISO determines the resource will not create detrimental market or operational impacts. Management proposes that the ISO have the ability to annually reconsider the approval of a discrete dispatch RDRR larger than 100 MW based on reliability criteria.

This increase to the maximum allowable size of discrete dispatch RDRRs is enabled by the first change proposed in this memorandum to model a minimum load for discrete dispatch RDRRs. Currently, the way the real-time market models discrete dispatch RDRRs can result in a difference between the amount of energy the market is internally calculating it is getting from a resource and the dispatch amount sent to the resource. The current 50 MW cap limits these differences. However, the proposed change to model discrete dispatch RDRRs as having a minimum load will result in the market internally calculating that it is getting the same amount of energy, or very close to the same amount, as in the dispatch instructions sent to the resources.

Management proposes to increase the size limit of discrete dispatch RDRRs to 100 MW because the limit is no longer critical to limit these energy differences. However, a limit on the size of discrete dispatch RDRRs remains appropriate because the dispatch of these resources may displace less expensive energy from other resources. Also, a size limit is appropriate to avoid operational challenges that may occur when the load underlying a discrete dispatch RDRR comes online after a demand response dispatch has ended.

## **STAKEHOLDER POSITIONS**

Stakeholders support Management's proposed change to allow the modeling of a minimum load for discrete dispatch RDRRs as a reasonable means of addressing the current infeasible dispatches. Stakeholders also support the increased allowable size of discrete dispatch RDRRs.

The ISO's Department of Market Monitoring (DMM) supports Management's proposal. DMM also suggests that the ISO could develop rules in a future stakeholder initiative to allow continuous dispatch RDRRs to have minimum loads. The ISO did not propose such a change in this initiative because continuous dispatch RDRRs can also participate in the day-ahead market economically based on actual costs, rather than having to bid an administratively determined \$950/MWh. Consequently, because the underlying RDRR retail tariffs do not incorporate minimum load costs, allowing a minimum load for continuous dispatch RDRRs would be complex.

## **CONCLUSION**

Management requests the ISO Board of Governors and the WEIM Governing Body approve Management's reliability demand response bidding enhancements proposal described in this memorandum. These enhancements will ensure the real-time market better respects the discrete-dispatch RDRR's operational characteristics.