

Memorandum

To: ISO Board of Governors

From: Eric Hildebrandt, Executive Director, Market Monitoring

Date: August 29, 2018

Re: Department of Market Monitoring comments on ESDER proposal

This memorandum does not require Board action.

EXECUTIVE SUMMARY

DMM appreciates the challenges involved in developing ways for increased participation by demand response and new storage technologies directly in the ISO market. DMM supports key components of the ISO's *Energy Storage and Distributed Energy Resources Phase 3 (ESDER3) Draft Final Proposal*, as a step forward in the process of lowering barriers and enhancing the abilities for energy storage and distribution-connected resources to participate in the ISO market.

Management's proposal includes new hourly and 15-minute bid options for participating demand response (PDR) resources that should provide an effective tool for scheduling coordinators to prevent 15-minute and 5-minute dispatches for demand resources which are incapable of responding to such dispatches. Currently, the ISO real-time software often dispatches demand resources which cannot respond to these dispatches, and allows real-time market prices to be set by these infeasible dispatches.

Under Management's proposal, demand response resources which select the new hourly block bid option will no longer be allowed or required to bid in the residual unit commitment (RUC) process. The Draft Final Proposal does not provide a rationale for this rule change. The new bidding options for demand resources established under the proposal are designed to ensure that these resources will be able to respond to dispatches in the real time market. Therefore, DMM believes the ISO should reconsider why these demand response resources should be excluded from the RUC process.

Under the ISO's commitment costs and default energy bid enhancements (CCDEBE) proposal approved by the Board in March, rules will also be changed to allow demand response resources to submit non-zero start-up and minimum load bids. DMM has noted that the CCDEBE proposal omitted any details regarding how bid caps for commitment cost bids by demand resources would be set. The ISO should address this gap in the CCDEBE proposal before demand resources are permitted to submit non-zero commitment cost bids.

DMM also has concerns that using the existing 10-in-10 baseline methodology for PDR load shift resources creates some opportunities for these resources to get paid by the ISO without actually shifting their consumption patterns in a beneficial way. The electric vehicle sub-metering proposal also creates opportunities for market participants to get paid wholesale prices without actually reducing load. As participation of these resources increases, DMM recommends that the ISO be prepared to increase monitoring of these resources and to modify methods for compensating performance of these resources.

MANAGEMENT PROPOSAL

DMM supports the key components of the Management's final proposal as a step forward in the process of lowering barriers and enhancing the abilities for energy storage and distribution-connected resources to participate in the ISO market. DMM actively participated in the ESDER3 stakeholder process and submitted a series of five sets of written comments and recommendations to the ISO during this initiative.¹

The ISO addressed concerns that DMM raised regarding potential conflicting dispatches under the load shift participation model in its Draft Final Proposal.² The ISO has also indicated it will further evaluate a potential issue DMM raised regarding scheduling of demand resources using the hourly bid option which are subject to intertemporal

¹ *Energy Storage and Distributed Energy Resources (ESDER) Phase 3 Issue Paper, Comments by Department of Market Monitoring, November 3, 2017.*

<http://www.caiso.com/Documents/DMMComments-EnergyStorage-DistributedEnergyResourcesPhase3-IssuePaper.pdf>

DMM Comments on Energy Storage and Distributed Energy Resources (ESDER) Phase 3 Workshop, February 12, 2018. <http://www.caiso.com/Documents/DMMComments-EnergyStorage-DistributedEnergyResourcesPhase3WorkingGroup-Jan162018.pdf>

Energy Storage and Distributed Energy Resources (ESDER) Phase 3 Straw Proposal, Comments by Department of Market Monitoring, April 9, 2018. <http://www.caiso.com/Documents/Comments-DMM-EnergyStorage-DistributedEnergyResourcesPhase3WorkingGroup-Mar292018.pdf>

Energy Storage and Distributed Energy Resources (ESDER) Phase 3 Draft Final Proposal, Comments by Department of Market Monitoring, July 6, 2018.

<http://www.caiso.com/Documents/DMMComments-EnergyStorage-DistributedEnergyResourcesPhase3-Jun252018.pdf>

Energy Storage and Distributed Energy Resources (ESDER) Phase 3 Revised Draft Final Proposal, Comments by Department of Market Monitoring, August 3, 2018.

<http://www.caiso.com/Documents/DMMComments-EnergyStorage-DistributedEnergyResourcesPhase3-DraftFinalProposal.pdf>

² DMM Comments (July 6, 2018), pp. 2-4.

Energy Storage and Distributed Energy Resources Phase 3 Draft Final Proposal, July 11, 2018, pp.7-8. <http://www.caiso.com/Documents/DraftFinalProposal-EnergyStorage-DistributedEnergyResourcesPhase3.pdf>

constraints.³ However, several other DMM recommendations were not addressed or incorporated in the final proposal. This memo highlights key features of Management's proposal, along with recommendations DMM has provided in the stakeholder process which DMM believes would improve the proposal.

New bid options for demand response resources

The ISO is proposing to offer bidding options for demand response resources that will provide these resources with longer notification times and extended real-time dispatch intervals, similar to what the ISO currently offers to intertie resources. Specifically, the ISO's proposal would allow demand resources the option of only submitting hourly block or 15-minute dispatchable bids in the real-time market. Under the hourly block bidding option, demand resources will need to be dispatched 52 minutes prior to an operating hour and will need to be dispatched for the entire operating hour.

These new bid options are designed to provide an effective tool for scheduling coordinators to prevent infeasible real-time dispatches for PDR resources that cannot respond on a 15-minute or 5-minute basis. These design changes address a problem that DMM highlighted in our 2016 Annual Report, which we recommended that the ISO address through market enhancements that more accurately reflect the characteristics of resources unable to respond to isolated 15-minute or 5-minute dispatches.⁴ As explained in subsequent DMM reports and comments, PDR resources have increasingly been dispatched and have set prices in the 5-minute market, but have not been capable of responding to these dispatches.⁵

Under the ISO's proposal there are no restrictions on PDR resources that are eligible to select the new hourly block and 15-minute bidding options. In stakeholder comments, DMM recommended that "scheduling coordinators should be required to justify the need for a DR resource to use the new bid options" in order to "prevent DR that can respond to 5-minute dispatches from opting for less flexible bid options."⁶ DMM noted that "this is especially important for resources being compensated for resource adequacy attributes," and that "this check will ensure that fast responding DR capacity are not withheld from the market."⁷

³ DMM Comments (August 3, 2018), p.3.

⁴ *2016 Annual Report on Market Issues and Performance*, Department of Market Monitoring, May 2017, pp. 260-262.
<http://www.caiso.com/Documents/2016AnnualReportonMarketIssuesandPerformance.pdf>

⁵ *2017 Annual Report on Market Issues and Performance*, Department of Market Monitoring, June 2018, p.260.
<http://www.caiso.com/Documents/2017AnnualReportonMarketIssuesandPerformance.pdf>

⁶ DMM Comments (April 9, 2018), pp. 2-3.

⁷ Ibid.

In other written comments, DMM also recommended that the ISO should allow any type of resource that cannot respond to 15-minute or 5-minute dispatches to qualify to use the less flexible hourly and 15-minute bid options being proposed for demand response.⁸ DMM has confirmed that other types of resources including some wind and solar resources have difficulty responding to 5-minute dispatches as a result of actual physical limitations.⁹ DMM suggests that the ISO develop a registration process for any type of resource to qualify to use the proposed bid options. This registration process should be limited to resources which the ISO determines cannot physically be dispatched on a 15-minute or 5-minute basis in real-time. This recommendation is not incorporated in the ISO's final proposal.

Residual unit commitment

Under Management's proposal, PDR resources selecting the hourly dispatch option will no longer be allowed or required to bid in the RUC.¹⁰ Currently, PDR resources being used to meet resource adequacy requirements are frequently scheduled in the residual unit commitment (RUC) process. PDR resources are currently required to have \$0/MW commitment cost bids and \$0/MW RUC capacity bids, which often makes these resources economic for meeting RUC requirements.¹¹

In the ISO's Draft Final Proposal, the change in rules to exclude PDR resources from the RUC process was explicitly tied to other changes being proposed in the ISO's day-ahead market enhancements (DAME) initiative.¹² In the DAME initiative, the ISO was proposing to integrate RUC into the day-ahead market and establish a day-ahead flexible ramping product or requirement. DMM's comments on the ESDER3 Draft Final Proposal cautioned that since "the current DAME initiative proposal to eliminate RUC may be modified in that initiative ... the determination of whether or not PDRs using the hourly block option are eligible for receiving RUC awards should be made in the ESDER3 initiative independently from how RUC may be modified in the DAME initiative."¹³

The ISO has now indicated that changes made in the near term under the DAME initiative will not include the integration of RUC into the day-ahead market or establishing a day-ahead flexible ramping product or requirement.¹⁴ Therefore, DMM believes the proposal to

⁸ DMM Comments (July 6, 2018), p.1 and p.8.

⁹ *2017 Annual Report on Market Issues and Performance*, p. 107

¹⁰ *Energy Storage and Distributed Energy Resources Phase 3 Draft Final Proposal*, July 11, 2018, p.5

¹¹ *2016 Annual Report on Market Issues and Performance*, pp. 260-262.

¹² *Energy Storage and Distributed Energy Resources Phase 3 Draft Final Proposal*, July 11, 2018, p.10

¹³ DMM Comments (August 3, 2018), p.2-3.

¹⁴ Update: Day-Ahead Market Enhancements Initiative, ISO Market Notice, August 2, 2018: <http://www.caiso.com/Documents/Update-Day-AheadMarketEnhancementsInitiative.html>

exclude PDR resources that select the hourly block dispatch option from the RUC process may be unwarranted. The new bidding options for PDR included in the ESDER3 proposal are designed to ensure that PDR resources can be delivered when dispatched in the real-time market. Almost all imports used to meet resource adequacy requirements are only dispatchable on an hourly block basis, but are subject to a must-offer requirement in the RUC process. The ISO has not provided any rationale for why PDR resources selecting the hourly block bidding options will be excluded from the RUC process.

Commitment cost bid limits for demand response resources

In the ESDER3 stakeholder process, the ISO noted that under the commitment costs and default energy bids enhancements (CCDEBE) initiative, demand response resources will be allowed to submit non-zero bids for commitment costs (i.e. start-up and minimum load costs). Allowing commitment cost bids for PDR resources could reduce commitment of these resources in the RUC and make dispatch of these resources more efficient. However, DMM believes that additional clarity is needed on any guidelines and restrictions pertaining to commitment costs that may be submitted by PDR resources as would be allowed under the CCDEBE proposal. DMM has commented on this issue in its comments on the *CCDEBE Revised Draft Final Proposal*¹⁵ and in previous ESDER3 comments.¹⁶

The CCDEBE proposal was approved by the Board in March but omitted any details regarding how commitment cost bids for PDR resources would be limited. Specifically, the CCDEBE proposal does not outline how *proxy costs* for PDR resources would be calculated. These proxy costs are supposed to reflect each resources' actual commitment costs, and are used to determine bid caps and reasonableness thresholds for commitment cost bids. Without any specific requirements or limits on proxy costs that participants can submit for PDR resources, commitment cost offers for demand side resources could be essentially unbounded upon implementation of CCDEBE.

The ability of participants to submit unreasonable or unbounded commitment costs for PDR resources poses concerns about the potential for economic withholding of resources being relied upon for resource adequacy, exercise of market power, and setting of unjust and unreasonable prices. PDR resources could effectively prevent themselves from being committed or receive extremely high bid cost recovery payments by submitting excessively high commitment costs. The ISO should provide clarity on how commitment cost bids, reference levels, and mitigation of commitment cost bids will apply to demand response resources.

¹⁵ *DMM Comments on Commitment Cost and Default Energy Bid Enhancements Revised Draft Final Proposal*, DMM, February 28, 2018, p. 23: <http://www.aiso.com/Documents/DMMComments-CommitmentCostsandDefaultEnergyBidEnhancementsRevisedDraftFinalProposal.pdf>

¹⁶ *DMM Comments* (April 9, 2018), p. 3.

PDR baselines and sub-metering

As noted in DMM's 2009 comments on the ISO's initial proposal for participation of PDR resources in the ISO market, DMM "appreciates the challenges involved in developing ways for increased participation by demand response directly in the ISO market, particularly within the constraints imposed by other aspects of California's current retail and wholesale market design."¹⁷ DMM has recognized that the ISO must consider "how to balance the goal of encouraging increased participation by demand response with the need to provide a reasonable level of assurance that demand reductions being paid for are actually received."

DMM has noted that "the key challenge in meeting this second goal is accurately establishing the baseline upon which demand reductions from PDRs is measured. Establishing an accurate baseline is difficult due to inherent measurement and data accuracy problems, as well as the fact that PDR participants have an incentive to 'game' the baseline methodology in order to increase the estimated demand reductions for which they are paid."¹⁸

DMM has similar concerns with the ISO's current proposals for encouraging increased participation by new forms of demand response. The ISO's load shift resource proposal creates meaningful opportunities for storage resources subject to retail rates to help alleviate periodic oversupply conditions. However, the proposal to apply the existing 10-in-10 baseline framework to load shift resources also creates some opportunities for these same storage resources to get paid by the ISO without actually shifting their consumption patterns in a beneficial way.¹⁹

Similarly, the electric vehicle sub-metering proposal is likely to encourage more electric vehicles to participate in demand response programs. But as SCE pointed out in stakeholder comments, the sub-metering proposal creates a straightforward opportunity for market participants to get paid wholesale prices without actually reducing load by simply switching the same load consumption to a circuit not measured by the sub-meter.²⁰

Given the issues with baseline methodologies, DMM recommends that the ISO takes steps to devote resources to more actively monitoring the performance of PDR. As demand side participation grows in wholesale markets, the ISO should plan to increase this monitoring and undertake a more comprehensive redesign of its methods for compensating performance of demand response and related storage resources.

¹⁷ *DMM Comments on Draft Final Proposal for Design of Proxy Demand Resource (PDR)*, DMM, August 14, 2009, p. 1: <http://www.caiso.com/Documents/DMMCommentsonDraftFinalProposal.pdf>

¹⁸ *Ibid.*

¹⁹ DMM Comments (July 6, 2018), pp. 5-7.

²⁰ *SCE Comments on Energy Storage and Distributed Energy Resources Phase 3*, Southern California Edison, July 27, 2018, pp. 1-3. <http://www.caiso.com/Documents/SCEComments-EnergyStorage-DistributedEnergyResourcesPhase3-DraftFinalProposal.pdf>

CONCLUSION

DMM supports the key components of the ISO's ESDER3 proposal as a step forward in the process of lowering barriers and enhancing the abilities for energy storage and distribution-connected resources to participate in the ISO market. As described above, DMM has provided several recommendations in the stakeholder process which DMM believes would improve the proposal.