

# Comments on Proxy Demand Resource Resource Adequacy Clarifications Draft Final Proposal

Department of Market Monitoring

May 12, 2020

The Department of Market Monitoring (DMM) appreciates the opportunity to comment on the *Proxy Demand Resource – Resource Adequacy Clarifications Tariff Clarifications and Draft Final Proposal*.<sup>1</sup>

## I. Background

This new initiative combines Effective Flexible Capacity (EFC) Value for Proxy Demand Resources (PDRs) tariff clarifications and the Slow Demand Response (DR) proposal. The ISO's draft final proposal includes minor updates to the issue paper/straw proposal.

DMM supports the ISO's proposed tariff clarifications for developing EFCs for proxy demand resources. DMM appreciates the ISO's additions to the draft final proposal which make it clear that scheduling coordinators are required under the tariff to submit accurate master file characteristics. DMM also appreciates the ISO specifying that "Where a PDR's performance does not align with its registered master file values the CAISO may request further information to validate the existing master file information."<sup>2</sup> DMM suggests that the ISO commit to validating master file information when it determines that demand response resource performance does not align with registered master file information.

The proposed tariff clarifications for proxy demand response resources could have significant monitoring and compliance implications for ISO staff. For example, in order to assess whether proxy demand response performance aligns with master file values, the ISO must be able to validate resource performance. These assessments will require review of both underlying load data and the statistical methodologies used to calculate baseline load values. Ultimately, however, these monitoring and compliance efforts will be imperative to ensure that resources which qualify to sell flexible capacity can actually operate consistent with their registered operating characteristics.

Regarding the slow demand response proposal, DMM continues to have questions and concerns about the proposed dispatch process for slow demand response resources. It remains unclear whether the ISO will model new minimum on-line commitment (MOC) constraints in the day-ahead market and how these constraints will be defined and determined "infeasible".

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<sup>1</sup> *Effective Flexible Capacity Value for Proxy Demand Resources Draft Final Proposal*, April 21, 2020: <http://www.caiso.com/InitiativeDocuments/IssuePaper-StrawProposal-EffectiveFlexibleCapacityValue-ProxyDemandResources.pdf>

<sup>2</sup> *Draft Final Proposal*, p. 9.

DMM also remains concerned about the ISO's proposal to exclude slow demand response resources from being effective towards local reliability constraints in the day-ahead market process while ultimately allowing these resources to count towards local resource adequacy requirements.

While the ISO's proposal may be directly applicable to a relatively small amount of capacity, these resources are part of a more general category of energy-limited or availability-limited resources which are being relied upon to meet an increasing portion of resource adequacy requirements. As noted in recent comments by DMM in the CPUC long-term integrated resource planning proceedings, DMM is concerned about the cumulative effect of these resources:

These energy-limited or availability-limited resources include renewables, import capacity, demand-side resources and energy storage. Unlike gas and nuclear capacity, these resource types may have limited availability to meet both peak demand and demand across all multiple hours in an operating day. When available, these resources could also be very expensive to dispatch. If increased reliance is placed on these resources to meet RA requirements, DMM is concerned that the RA fleet could have limited output during hours when net loads – and the potential for uncompetitive supply conditions – are highest.<sup>3</sup>

Thus, DMM urges the ISO to fully consider and resolve key details and questions in a manner that is consistent with the broader issue of how to count and manage energy-limited or availability-limited resources being relied upon to meet an increasing share of resource adequacy requirements.

## **II. Effective Flexible Capacity (EFC) Values for Proxy Demand Resources**

The ISO has concluded that performing the tests required under tariff subsection 40.10.4.1(c) to establish *effective flexible capacity* values (EFCs) for *proxy demand response* (PDR) resources would be “difficult to manage and would require costly investments in system upgrades to administer the tests and avoid unduly distraction of operational staff.”<sup>4</sup> Therefore, the ISO proposes instead to calculate EFCs for proxy demand resources using the general formula under the ISO tariff section 40.10.4.1(a) and to extend unannounced testing provisions to assess the validity of EFC values *ex post*.

While DMM supports the ISO's proposed approach, DMM has expressed that it will be imperative for the ISO to ensure that scheduling coordinators submit accurate proxy demand resource characteristics to the ISO's master file, as certain master file parameters directly

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<sup>3</sup> *Reply Comments of the Department of Market Monitoring*, R.16-02-007, August 12, 2019. p. 2. Also see discussion and analysis of demand side resources on pp.8-11. <http://www.aiso.com/Documents/CPUC-DMMReplyCommentsonRulingInitiatingProcurementTrackandSeekingCommentonPotentialReliabilityIssues-Aug122019.pdf>

<sup>4</sup> *Issue Paper/Straw Proposal*, p, 6

impact EFC calculations.<sup>5</sup> Under the ISO's proposal, the start-up times, ramp rates, and Pmin values submitted by scheduling coordinators for proxy demand resources will determine the EFC calculation and how much flexible capacity that demand response resources can sell or be counted for. Whether a resource is 5-minute dispatchable will also determine if a resource is eligible to provide flexible capacity. If resources submit inaccurate operating characteristics in the ISO master file, demand response resources which are not actually flexible or dispatchable may receive EFC values and may be counted towards meeting flexible resource adequacy requirements.

DMM previously expressed that the ISO must make a commitment to assess the actual performance and capabilities of proxy demand resources based on actual market dispatches, operational data, and unannounced testing as necessary in order to ensure the validity of master file submissions and thus the validity of EFC values. In the draft final proposal, the ISO added language which makes it clear that scheduling coordinators are required under the tariff to submit accurate master file characteristics. The ISO also clarifies that "Where a PDR's performance does not align with its registered master file values the CAISO may request further information to validate the existing master file information."<sup>6</sup> DMM appreciates the ISO adding these provisions to its draft final proposal. However, DMM suggests that the ISO commit to validating master file information when it determines that demand response resource performance does not align with registered master file information.

### ***Monitoring and review of reported performance data***

The proposed tariff clarifications for proxy demand response resources could have significant monitoring and compliance implications for ISO staff. For example, under current rules, the "demand response energy measurement" used to measure demand response performance (representing the difference between a counterfactual load baseline if demand response actions were not taken, and actual load) is calculated and self-reported by scheduling coordinators.<sup>7</sup> Although scheduling coordinators are required to submit the underlying data used to calculate performance values, validating performance value accuracy requires an assessment of both underlying load data and the statistical methodologies used to calculate baseline load values. The ISO should be prepared to review and audit data on demand response performance that is self-reported by scheduling coordinators as described in tariff sections 11.6.1 and 4.13.4.

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<sup>5</sup> DMM comments on Issue Paper/Straw Proposal, April 20, 2020:  
<http://www.caiso.com/InitiativeDocuments/DMMComments-ProxyDemandResource-ResourceAdequacyClarifications-Apr32020.pdf>

<sup>6</sup> Draft Final Proposal, p. 9.

<sup>7</sup> ISO Tariff section 11.6.1

Ultimately, the ISO's monitoring and compliance efforts for proxy demand resources will be imperative to ensure that resources which qualify to sell flexible capacity can actually operate consistent with their registered operating characteristics.

### ***Unannounced testing of demand response***

The ISO's proposal to extend unannounced testing provisions to assess EFCs is also critical to ensure proxy demand resources can actually provide the flexible capacity for which they are being relied upon under the state's resource adequacy program. This is important because proxy demand resources can avoid being dispatched by simply submitting high commitment cost and energy bids in the ISO markets.

However, under the testing provisions of section 40.10.4.1 (c), proxy demand resources will be paid the resource's bid price. As previously noted, most proxy demand resources bid at or near the \$1,000/MWh bid cap. Although other resources are supposed to be subject to bid mitigation when exceptionally dispatched for testing, proxy demand resources are currently exempt from bid mitigation and do not have cost-based commitment cost bid caps or default energy bids for use in mitigation.

Thus, the ISO should place priority on using actual market dispatches to assess the performance of demand response resources and should resort to testing only if a resource has not been dispatched in the market.

### **III. Slow Demand Response Resources**

As part of this initiative, the ISO is proposing to allow "slow" demand response to count toward local area resource adequacy requirements. To qualify to provide local resource adequacy capacity, resources must be able to respond at their full capacity within 20 minutes after a contingency. To ensure "slow" demand response can be dispatched to meet local needs and thus qualify to provide local resource adequacy capacity, the ISO proposes to develop a process to exceptionally dispatch slow demand response resources in the day-ahead timeframe.

As explained below, DMM continues to have several questions about the ISO's proposal for dispatching slow demand response resources and believes that issues regarding how demand response resources are modeled in the market should be resolved before moving forward with the proposed dispatch process, to avoid potentially inefficient market outcomes.

#### ***Minimum on-line constraints***

The ISO's *Local RA with Availability-Limited Resources and Slow Demand Response Draft Final Proposal* indicates that *minimum online constraints* (MOCs) will be defined in local areas with

slow demand response. The ISO describes local minimum on-line constraint requirements as follows:<sup>8</sup>

$$\text{MOC Requirement} = \text{Local Area Load} - \text{Import Capability} - \text{Available Generation}$$

Where:

**MOC Requirement** = A MW value of slow demand response that needs to be dispatched prior to a contingency occurring as a preventive measure

**Local Area Load** = Day-ahead load forecast of local capacity area load

**Import Capability** = Import capability into the local capacity area

**Available Generation** = MWs bid into the day-ahead market from generation within the local capacity area

Based on the definition above, it seems the day-ahead market processes (IFM and RUC) would already ensure that Import Capability plus Available Generation bid into the market is sufficient to meet Local Area Load. It is unclear what additional constraints the ISO will model that are not modeled or do not exist today. It is also unclear if the ISO will use an updated load forecast (rather than the day-ahead load forecast) in its assessment of the need to exceptionally dispatch slow demand response capacity.

Additionally, it is unclear how the ISO's proposed dispatch process for slow demand response aligns with the ISO's procedures for creating MOCs in the first place. The ISO's day-ahead market operating procedure (1210)<sup>9</sup> states that a MOC cannot be created if there is not enough resource adequacy, CPM, or RMR capacity available to meet the requirement, unless additional capacity is made available through a change in unit status or an exceptional dispatch CPM. It is not clear how the ISO would consider slow demand response resource adequacy capacity in assessments for creating MOCs to enforce in the day-ahead market. If the ISO does not count slow demand response resource adequacy capacity as effective towards meeting MOC requirements when defining MOC constraints, this could result in the ISO unnecessarily issuing exceptional dispatch CPMs to non-RA resources. Additionally, it seems the ISO would only enforce MOCs if there is sufficient capacity available to meet MOC requirements in the first place—that is, MOC requirement must be feasible. Therefore, it is not clear how or when the ISO would deem a MOC “infeasible” (i.e. cannot be met) to trigger exceptional dispatch of slow demand response.

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<sup>8</sup> *Local Resource Adequacy with Availability-Limited Resources and Slow Demand Response Draft Final Proposal*, California ISO, October 3, 2019, p. 13:

<http://www.caiso.com/InitiativeDocuments/DraftFinalProposal-LocalResourceAdequacy-AvailabilityLimitedResources-SlowDemandResponse.pdf>

<sup>9</sup> Day-ahead market operating procedure, Procedure No. 1210, Effective 1/1/2020, p. 6:

<http://www.caiso.com/Documents/1210.pdf>

DMM asks that the ISO provide additional detail on what minimum on-line constraints will be defined in local areas that could potentially result in the commitment of slow demand response capacity. DMM also asks that the ISO clarify how slow demand response resource adequacy capacity would be considered when creating MOCs prior to the day-ahead market and how the ISO would determine that a MOC is “infeasible”.

### ***Process for dispatching slow demand response***

During the stakeholder call on April 3, the ISO presented a new process to dispatch slow demand response.<sup>10</sup> The ISO explained that it will define minimum on-line constraints in local areas, and then run the day-ahead market processes excluding slow demand response from being effective towards resolving the minimum on-line constraints. The ISO will then commit slow demand response resources via exceptional dispatch only if minimum on-line constraints are “infeasible” based on capacity considered in the day-ahead market.

DMM has some concerns that the proposed approach could unnecessarily restrict the supply of capacity considered in the day-ahead market. If the ISO does not consider slow demand response capacity as effective toward the minimum on-line constraints in the day-ahead market, this will inaccurately limit the supply available to meet minimum on-line constraints in the day-ahead market. This is likely to result in inefficiencies which may drive up the cost of meeting minimum on-line constraints and may cause additional gas units to be committed which are not actually needed to meet reliability constraints.

Thus, DMM suggests that demand response capacity should not be excluded from resolving constraints in the day-ahead market, if these resources are in fact effective towards meeting those constraints.

### ***Modeling limitations***

DMM understands that the reason the ISO will not model slow demand response as being effective towards meeting minimum on-line constraints in the day-ahead market is that many of these resources are modeled with 0 MW Pmin and reflect no commitment costs. Therefore, these resources may appear inexpensive to commit in day-ahead market processes and may be committed at Pmin, when resources in fact, may not be fully dispatchable and must be “committed” in advance of real-time to some higher operating level.

The proposed dispatch process for slow demand response resources appears to be the result of accommodating modeling limitations for demand response. DMM believes that the ISO should address demand response modeling before developing a new dispatch process that may result in inefficient market outcomes.

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<sup>10</sup> *New Initiative: Effective Flexible Capacity for Proxy Demand Resources*, California ISO, April 3, 2020, Slide 20: <http://www.caiso.com/InitiativeDocuments/Presentation-EffectiveFlexibleCapacityValue-ProxyDemandResources-Apr3-2020.pdf>