Comments on Resource Adequacy Enhancements Third Revised Straw Proposal

Department of Market Monitoring

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I. Summary

The Department of Market Monitoring (DMM) appreciates the opportunity to comment on the *Resource Adequacy Enhancements Third Revised Straw Proposal*.[1] DMM provides comments on the following aspects of the proposal:

- DMM appreciates the ISO's efforts to strengthen rules for non-resource-specific import resource adequacy capacity. The BAA-specific requirement could improve the reliability of import resource adequacy capacity if the ISO adds a requirement that import resource adequacy capacity cannot be recalled by source BAAs. Developing curtailment provisions across BAAs may require further coordination with other WECC BAAs. However, this would be necessary for ensuring the credibility of resource adequacy imports and that capacity is not double counted across the West.
- The ISO proposes to remove the real-time must-offer obligation (MOO) for resource adequacy capacity that does not receive day-ahead or imbalance reserve awards. The ISO cites a new imbalance reserve product being developed in a separate initiative as obviating the need for a real-time MOO because the new product will cover potential uncertainty needs between day-ahead and real-time markets. The specific design elements of the imbalance reserve product could determine whether the removal of the real-time MOO is appropriate or not. The ISO should not remove the real-time MOO until the imbalance reserve product has been further defined, and perhaps even implemented for a period of time.
- The potential changes proposed in this initiative would not resolve the issue of resource adequacy imports which submit high-priced energy bids which do not clear the day-ahead market and then have no further obligation to make this capacity available in real-time. DMM encourages the ISO to work with the CPUC and other stakeholders on options that may address this issue through changes in ISO and CPUC rules.
- The UCAP framework is an improvement over NQC-based resource adequacy requirements today for RA sales at the system level. The UCAP calculation should drive incentives for resources to maximize availability when the ISO needs capacity the most. To strengthen incentives for resources to be available in periods with tightest supply margins, the ISO could consider assessing all season hours in UCAP calculations (not just the top 100 hours

[1] *Resource Adequacy Enhancements Third Revised Straw Proposal*, California ISO, December 20, 2019: http://www.caiso.com/InitiativeDocuments/ThirdRevisedStrawProposal-ResourceAdequacyEnhancements.pdf

with tightest supply margin), and weight each hours' impact to availability factors by the magnitude of the supply margin.

- The ISO will continue to define local capacity requirements in terms of NQC. Maintaining NQC-based local requirements could mute the incentives that UCAP provides for local resources to reduce forced outages and increase availability. If NQC-based local requirements are maintained, the ISO should consider developing a separate availability incentive mechanism for local resources.
- The treatment of approved planned outages which are subsequently cancelled by the ISO is an important yet complex issue that warrants further discussion in this stakeholder process. DMM understands that there are legitimate circumstances under which planned outages cannot be deferred by the resource owner. The ISO's two options do not sufficiently address key concerns about capacity withholding and alleviating risks associated with cancelled planned outages.
- The ISO's proposed UCAP deficiency tool, planned outage enhancements, and UCAP evaluations create new incentives for LSEs to show RA capacity which could interact with existing incentives to buy and sell capacity in the bilateral market. The ISO's proposals seem to focus on encouraging LSEs to show capacity on supply plans in excess of their individual requirements. The ISO should consider more broadly how its proposals interact with the existing bilateral RA market structure and incentives to transact, including the impacts of the Power Charge Indifference Adjustment (PCIA). The ISO could consider instead focusing on rules which incentivize LSEs to sell long positions in the bilateral RA market in coordination with LRAs.
- DMM agrees that expected proliferation of energy and availability-limited resources presents challenges given energy needs are not reflected in RA procurement requirements. DMM supports some of the ISO's proposed mechanisms to address the impact of energy and availability-limited resources including system and local portfolio assessments, but has concerns about other proposals. Ultimately, it would be optimal to reflect energy needs in RA procurement requirements up front rather than potentially curing deficiencies through backstop procurement or using operating constraints to manage the availability of energy-limited resources. DMM looks forward to further discussion among the ISO, CPUC, and other LRAs regarding larger scale RA requirement design changes to incorporate energy needs.

II. Comments

Import resource adequacy capacity

DMM appreciates the ISO moving forward on the issue of NRS-RA imports and believes the direction of the ISO's proposal could result in a significant improvement over today's rules. The ISO proposes to require that non-resource specific RA imports specify the source BA on monthly RA showings. The ISO also proposes to adopt provisions similar to CPUC rules which require LSEs to show that non-resource-specific RA (NRS-RA) imports represent physical capacity and firm transmission.

DMM notes that the BAA specification requirement may still not prevent RA imports from being backed by spot market purchases originating outside the specified BAA (i.e. the scheduling coordinator could source an import from outside the source BAA, "sink" in the source BAA, and tag the final leg as an import into CAISO). Multiple path legs may span multiple BAAs with the last leg of the import sourcing from the specified source BAA.

DMM has concerns about the reliability of RA imports which are backed by spot market purchases and rely on multiple legs of transmission (potentially through multiple BAAs) to reach CAISO. While excess generation and transmission capacity in WECC may be able to support such import transactions on most days, the deliverability of import RA backed by spot market purchases may be significantly reduced when multiple BAAs in WECC are constrained. If a BAA can curtail exports to CAISO in order to serve its native load, an import resource to CAISO delivered through the BAA cannot be counted on as a dedicated resource to the CAISO. The risk of an import transaction being curtailed increases when an import travels across multiple transmission paths and through multiple BAAs.

At a minimum, the ISO should require suppliers to ensure that import capacity or energy will be not be recalled by an external BAA, and that the energy backing the import capacity will be afforded the same curtailment priority as the BAA load. Other ISOs require suppliers to demonstrate that import capacity resources possess these attributes today.[2] [3] [4] Coordination with other BAAs to define curtailment rules for RA imports will be important to ensure that import capacity procured by CAISO LSEs is dedicated to CAISO and cannot be recalled to serve the source BAA's native load when the source BAA cannot find other internal or external power to meet its native load.

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[2] *ISO New England Market Rule 1* Section III.13, Forward Capacity Market, Sections 13.1.3.5. Qualification Process for New Import Capacity Resources:
https://www.iso-ne.com/static-assets/documents/regulatory/tariff/sect_3/mr1_sec_13_14.pdf

[3] *NYISO Market Services Tariff*, Section 5.12.2.

[4] *Manual 18: PJM Capacity Market*, Rev. 41 (January 1, 2019), Section 4.2.2 Existing Generation Capacity Resources – External:
https://www.pjm.com/~/media/documents/manuals/m18.ashx

This will be particularly important for situations when import RA is necessary for ensuring CAISO reliability—when other BAAs in WECC face supply shortages. Developing curtailment provisions across BAAs may require further coordination with other WECC BAAs. However, such coordination would be critical for ensuring the credibility of import RA and that capacity is not double-counted among other WECC BAAs.

The ISO also proposes to require that non-resource-specific RA imports represent firm transmission. While it is not clear in what timeframe the ISO would require a demonstration of firm transmission, DMM believes this proposal warrants further discussion. The ISO should consider what the market for firm transmission looks like in the West. In particular, before the ISO proceeds with this proposal, the ISO and/or stakeholders should transparently vet the practices, procedures, and timelines of BAAs in WECC for selling transmission and subsequently requiring the release of unused transmission.

DMM believes the ISO and stakeholders should also assess the extent to which entities may possess market power across certain transmission paths. Transparent vetting of the key features of transmission markets outside CAISO may be necessary for ISO and stakeholders to assess the extent to which CAISO's proposal would enable entities with market power in these external transmission markets to exercise that market power in California's resource adequacy capacity markets.

Finally, DMM notes that the potential changes proposed in this initiative would not resolve the issue of resource adequacy imports which submit high-priced energy bids which do not clear the day-ahead market and then have no further obligation to make this capacity available in real-time. DMM encourages the ISO to work with the CPUC and other stakeholders on options that may address this issue through changes in ISO and CPUC rules.

Must-offer obligations

The ISO proposes to remove the real-time MOO for RA capacity that does not receive day-ahead or imbalance reserve awards. The ISO cites imbalance reserves (currently being developed in the Day-Ahead Market Enhancements stakeholder initiative) as obviating the need for a real-time MOO because the new product will cover potential uncertainty needs between day-ahead and real-time markets.

The ISO should not remove the real-time MOO until the imbalance reserve product has been sufficiently defined. The imbalance reserve product design has not been finalized yet, and key design elements could determine whether the removal of the real-time MOO is appropriate or not.

UCAP

The UCAP framework presents an improvement over today's NQC structure. Assigning resource capacity values that account for forced outages should provide an incentive for all resources (particularly for selling system capacity) to increase availability in order to maximize capacity sales.

Under the ISO's proposal, a resource's availability factor (which impacts its UCAP value), will be based on the 100 hours with the tightest system "supply cushion", which measures available RA against load. The ISO will take a simple average of availability factors in the 100 tightest supply condition hours in a season to determine a seasonal availability factor, which is then weighted by year. All 100 hours in a season will be weighted the same and have an equal impact on availability factor, regardless of the magnitude of the supply margin. DMM suggests that the ISO instead consider calculating availability factors across *all* hours each season and weight each hour by the severity of the gap between RA availability and load (where hours with smaller margins are weighted more heavily). This change would make the UCAP calculation more sensitive to forced outages or de-rates in intervals with the tightest supply conditions.

While UCAP could improve incentives for all resources to maximize availability and therefore capacity sales at the system level, more targeted UCAP calculations or a revised availability incentive mechanism may be needed to incentivize local resources to remain available when the ISO needs resources the most.

Local Capacity

Under the ISO proposal, local capacity studies will continue to be based on NQC. Local requirements assigned to LRAs will then be translated to UCAP. However, resource sufficiency to meet local requirements will ultimately be assessed by the ISO based on NQC as it is today. The UCAP conversion process does not appear to add efficiency to the local procurement process. Additionally, incentives for local resources (particularly pivotal local resources) to reduce forced outage rates may be muted under this framework absent a separate availability incentive mechanism.

The ISO proposes to continue to set local requirements based on NQC, then translate LRA requirements to UCAP. This framework does not appear to add efficiencies to the local RA procurement process. Instead, this conversion process could lead to NQC deficiencies and potentially higher overall costs if backstop procurement is needed to meet NQC-based requirements. The conversion process also adds uncertainty to the local procurement process if UCAP and NQC values diverge significantly in local areas. Instead of the UCAP conversion process, the ISO should consider further whether local requirements can be defined in terms of UCAP to maintain consistency with system RA procurement requirements.

If the ISO is unable to change its LCR study process to derive UCAP-based requirements, DMM suggests that the ISO maintain local requirements based on NQC while it continues to

develop RA procurement requirements that reflect the actual reliability requirements. If the ISO cannot develop UCAP-based requirements, DMM recommends that the ISO re-evaluate availability incentives for local resources. Consider a resource which is pivotal to meet a LCR requirement, where it is needed to meet the LCR requirement regardless of its UCAP value. With the elimination of RAAIM, there would be little incentive for this generator to increase its availability to the ISO and reduce its forced outage rate. Forced outages would impact the resource's UCAP value for sales at the system level but because the resource is pivotal in the local area, this resource must be procured to meet NQC-based local requirements.

To continue to incentivize availability of local resources under NQC-based local requirements, the ISO could consider developing a separate availability incentive mechanism for local resources. In contrast to RAAIM, a revised availability incentive mechanism could be applied to a more limited number of intervals where, for example, the ISO reaches certain load thresholds, incurs shortages of reserves, or observes tight capacity margins. A separate availability incentive mechanism could continue to ensure that owners of resource portfolios with local market power are still incentivized to be available when the ISO needs local capacity the most.

Planned outage process enhancements

The treatment of approved planned outages which are subsequently denied by the ISO is an important yet complex issue that warrants further design work in this stakeholder process. Stakeholders have expressed numerous valid concerns about the ISO's interpretation that approved planned outages subsequently canceled by the ISO and then taken as forced outages constitute a tariff violation. DMM understands that there are legitimate circumstances under which planned outages cannot be deferred by the resource owner without adding substantial cost risks onto the owner. The risk that the ISO may cancel an approved planned outage (or wait to approve a planned outage until after the monthly RA showing deadline) creates incentives for resource owners to withhold capacity from, and increase prices in, bilateral capacity markets. The ISO's planned outage proposal does not sufficiently address this complex issue.

To mitigate perceived regulatory risks of submitting forced outages when planned outages are cancelled, the ISO could consider planned outage cancellations on a case by case basis. If the ISO must cancel a planned outage, the ISO could discuss with the resource owner whether the outage can be deferred. If a planned outage cannot be deferred for valid reasons such as imminent damage to the resource or if the SC has already incurred significant sunk costs, the ISO could deem the planned outage submission reasonable and instead seek potential replacement capacity.

DMM supports the ISO's proposal to develop a planned outage calendar which could help resource owners better schedule planned outages and reduce chances of cancellation in the first place. But in the event that planned outage cancellations continue to occur, DMM

believes there are options which could facilitate procurement of replacement capacity or retention of resources needed for reliability, while minimizing incentives to withhold capacity from bilateral markets for replacement purposes. Various stakeholders have suggested a CPM procurement process for replacing capacity scheduled for a planned outage that the ISO needs to cancel. The ISO could also compare the costs of replacement capacity against costs to compensate a resource to defer its planned outage. While issues such as cost allocation for these types of actions would need to be further vetted, DMM believes the ISO should consider alternative approaches to what the ISO proposed in the third revised straw for replacement capacity procurement.

UCAP deficiency tool and incentives for over-showing capacity

The ISO's proposed UCAP deficiency tool, planned outage enhancements, and UCAP evaluations create new incentives for LSEs to show RA capacity which could interact with existing incentives to buy and sell capacity in the bilateral market. The ISO's proposals seem to focus on encouraging LSEs to show capacity on supply plans in excess of their individual requirements. The ISO should consider more broadly how its proposals interact with the existing bilateral RA market structure and incentives to transact, including the impacts of the Power Charge Indifference Adjustment (PCIA).

Instead of developing isolated mechanisms which incentivize over-showing, the ISO could focus on working with LRAs to develop rules which incentivize LSEs to sell long positions in the bilateral RA market. Allowing market participants to true up long and short positions in the bilateral market would be a more efficient way to allocate RA attributes, as opposed to incentivizing LSEs to hold back excess capacity for substitution purposes or for potential payments at backstop prices.

Energy and availability-limited resources

Portfolio assessments

DMM supports the ISO's proposal to conduct system and RA portfolio assessments and to release hourly load and resource data to stakeholders as part of its Local Capacity Technical Study reports. DMM shares the ISO's concerns that increased reliance on energy and availability-limited resources to meet RA requirements may not ensure there is sufficient energy to meet the ISO's needs across all hours each month. As gas and nuclear generation retires and is replaced by energy and availability-limited resources such as solar, batteries, and demand response it will become increasingly important to ensure the RA program captures the need to meet both peak load and system energy demands across the day.

The ISO's proposed portfolio assessments will not constitute ex ante RA procurement requirements, but by releasing these assessments and supporting data, the ISO will allow LSEs to consider the ISO's reliability assessments in procurement decisions. Ultimately, it would be optimal to reflect energy needs within RA procurement requirements rather than potentially

relying on backstop procurement to cure energy deficiencies. However, DMM believes the ISO's proposal to release portfolio study assessments is a valuable first step to allow LSEs to consider energy needs in forward RA procurement decisions. DMM looks forward to further discussion among the ISO, CPUC, and other LRAs regarding larger scale RA requirement design changes to incorporate energy needs.

The ISO also proposes to have CPM authority to cure for energy deficiencies identified in portfolio assessments. DMM recommends that the ISO develop a new CPM cost allocation methodology to allocate the cost of these CPMs to the LSEs whose resource portfolios' energy deficiencies created the need for the CPM designation.

Operationalizing storage resources

DMM understands that the ISO's proposal to enforce minimum charge constraints for storage resources in real-time is intended to ensure storage capacity can be counted on to be available to meet day-ahead awards. The issues described in the proposal concern real-time availability compared to day-ahead awards and are not necessarily RA issues.

Regardless, the ISO's proposal would likely result in storage resources becoming much less flexible in real-time. For example if the minimum SOC parameter was set high in order to maintain day-ahead discharge schedules starting hour 19, the minimum SOC constraint could prevent the resource from discharging and recharging in real-time to capture additional revenue opportunities before hour 19. Additionally, if conditions in real-time are such that the storage resource's day-ahead energy award starting hour 19 is no longer needed, it would be unnecessary to continue to maintain a minimum SOC on the resource to meet day-ahead schedules. Availability in real-time when resources receive day-ahead awards may be better addressed through market incentives.

Regarding RA values for storage resources, DMM has expressed concern in comments on the ESDER 4 initiative about the proposed end-of-hour state-of-charge parameter potentially being used to limit a resource's availability below its 4-hour RA value. In addition to forced outages for storage resources, the ISO should consider whether a battery submitting a max end-of-hour SOC (or Max Charge Limit in Master File) less than a resource's 4-hour RA value (or at the start of the assessment hour window) should constitute a type of outage or de-rate that impacts a resource's UCAP.[5]

[5] *DMM comments on ESDER 4 Revised Straw Proposal*, DMM, November 25, 2019, pp. 5-6: http://www.caiso.com/InitiativeDocuments/DMMComments-EnergyStorage-DistributedEnergyResourcesPhase4-RevisedStrawProposal.pdf