Comments on Market Enhancements for Summer 2021 Readiness Straw Proposal

Department of Market Monitoring

February 3, 2021

I. Summary

DMM appreciates the opportunity to comment on the ISO's *Market Enhancements for Summer 2021 Readiness Straw Proposal (Straw Proposal).*[1] DMM appreciates the ISO's efforts to facilitate as much discussion as possible given the accelerated timelines needed to meet summer 2021 readiness. DMM provides comments on the following aspects of the ISO's Straw Proposal presentation:

- ***Export priorities.*** DMM supports the proposal to only prioritize exports over CAISO load in real-time if the exports are backed by specified contracted non-resource adequacy capacity. DMM recommends the ISO consider additional design elements to ensure that reliability is not compromised when the day-ahead market or advisory real-time market run economically commits non-resource adequacy capacity in place of resource adequacy capacity. DMM continues to encourage the ISO to work with other WECC balancing areas to develop a formalized standard for equal export treatment across the west. DMM also reiterates the importance of the ISO developing processes that ensure access to RA capacity needed to accommodate uncertainty in system conditions in both the day-ahead and real-time timeframes.
- ***Storage resources.*** DMM does not support the ISO's minimum state of charge proposal for storage resources.[2] Instead, DMM continues to suggest that the ISO focus on enhancing processes and tools for efficiently managing storage resources through exceptional dispatches for this summer, when needed. DMM has also observed dispatch issues related to storage resources under the non-generator resource model that could be addressed by this summer to help better manage storage resources in real-time.
- ***Demand response.*** DMM reiterates its recommendation that the ISO review in-market and out-of-market proxy demand response dispatch processes to help ensure that in the future all potential demand response is dispatched before shedding load. DMM recommends that the ISO and stakeholders evaluate whether its hourly dispatch model for proxy demand response resources could be enhanced so that demand response resources that require longer dispatch notification time could be better utilized in the ISO market.

[1] *Market Enhancements for Summer 2021 Readiness Straw Proposal*, California ISO, January 27, 2021: http://www.caiso.com/InitiativeDocuments/Presentation-MarketEnhancements-2021SummerReadiness-StrawProposal.pdf

[2] *Comments on resource adequacy enhancements draft final proposal phase 1*, DMM, January 21, 2021, pp. 6-10: http://www.caiso.com/Documents/DMMCommentsonResourceAdequacyEnhancements-DraftFinalProposalPhase1-Jan212021.pdf

- ***Intertie settlements.*** DMM supports potential changes to intertie settlements under appropriately "tight conditions". Under tight conditions, some adjustments to intertie settlements may reduce potential disincentives to offering hourly block imports into the ISO's hour-ahead market. The definition of "tight conditions" will be critical to the success of this policy. DMM asks that in their next proposal the ISO list which hours would have been considered tight and what triggered that designation so that stakeholders can better understand how the proposed designations would work. DMM also recommends the ISO consider settling hourly block intertie schedules on the HASP price under tight conditions. The ISO has not made a compelling case for settling interties on the higher of HASP or FMM prices. The ISO could also consider paying hourly block imports the higher of their offer price or the FMM price.
- ***EIM resource sufficiency tests.*** DMM supports the ISO adding uncertainty to the bid range capacity test and fixing the implementation errors the ISO identified in the test. DMM agrees with stakeholders that broader changes to the test should be considered. We caution against rushing broader changes, such as those proposed by Powerex, to the March Board before the ISO and stakeholder community can more thoroughly vet the implications of the changes. For example, even the ISO's more limited proposal to exclude offline resources with start-up times greater than one hour from the capacity tests would undercount EIM areas' available resources. DMM recommends that the ISO open a separate stakeholder process to consider these kinds of broader changes to the capacity and flexibility tests as soon as feasible.
- ***Scarcity pricing.*** DMM does not support the proposed 'scarcity pricing' changes. The proposed 'scarcity pricing' changes have not been well vetted. They may create more incentives to reduce supply in tight conditions than to increase supply. Other ISO proposals, such as hourly block settlements discussed above and market parameter changes for FERC Order 831 compliance, should increase incentives for non-RA imports to offer power to the CAISO balancing area in tight conditions. DMM continues to recommend that the ISO proceed cautiously with potential changes to scarcity pricing as scarcity pricing is a complex issue.
- ***System market power mitigation.*** DMM supports the ISO proposal to implement system market power mitigation protections. After the August load shedding events, DMM thought it was prudent for the ISO to delay taking the system mitigation proposal to the Board in 2020. It was reasonable to take some time to consider potential impacts of CAISO system mitigation on incentives for non-resource adequacy hourly block imports to offer to CAISO during the very limited number of hours when there may not be sufficient resource adequacy capacity to meet CAISO load. The proposal discussed above to settle hourly block interties on the HASP price in these tight conditions would provide significant new assurances that importers would receive their offer price up to $1,000 – or $2,000 when justified by resource costs in CAISO or elsewhere in the west – in these conditions. This compensation assurance should help to alleviate concerns over uncertainty in CAISO pricing creating disincentives for imports to offer to CAISO in these rare circumstances. Therefore

DMM supports the ISO proceeding with its stakeholdered CAISO system mitigation proposal.

- ***Other topics to address.*** DMM continues to recommend that the ISO include weekends and holidays in the availability assessment hours for the resource adequacy availability incentive mechanism. DMM also recommends that the ISO consider adding a performance penalty for resource adequacy resources.[3] This could be particularly relevant for demand response resources because of the difficulty of determining in advance whether or not a new demand response resource—or an existing provider that is selling additional new capacity—is capable of providing in critical hours the quantity of resource adequacy capacity that the resource has been paid to provide.

More detail on these and other aspects of the Straw Proposal presentation are provided below.

I. Comments

Schedule priorities

Export and load priorities

As noted in the DMM's report on the August and September 2020 heat wave, there were "…relatively large volumes of exports in the day-ahead market that were not backed by imports being wheeled through or contracts with capacity within the CAISO." These exports that were not backed by contracted capacity were prioritized over CAISO load in the real-time markets and operations. "These export schedules were not subsequently curtailed in real-time during hours when the CAISO [load] was curtailed."[4]

DMM views the establishment of a clear and consistent policy on export prioritization between the CAISO and other balancing authority areas as one of the most important outcomes of the Market Enhancements for Summer 2021 Readiness Initiative. The Straw Proposal appears to make improvements in the prioritization of CAISO load relative to exports not backed by non-RA capacity. In particular, DMM supports the proposal to only prioritize exports over CAISO load in real-time if backed by specified non-RA capacity, regardless of whether the export first cleared in the day-ahead IFM or RUC processes. Beyond the specific export and load priorities specified in the Straw Proposal, DMM encourages the ISO to work with other WECC BAAs to develop a formalized equal standard of export treatment across the west.

While the reprioritization of exports relative to CAISO load should benefit the reliability of the CAISO BAA in summer 2021 and beyond, DMM recommends the ISO consider additional

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[3] *Comments on Reliability Service Initiative – Phase 2 Second Revised Draft Final Proposal*, DMM, October 4, 2016, p. 2: http://www.caiso.com/Documents/DMMComments-ReliabilityServicesInitiativePhase2-SecondRevisedDraftFinalProposal.pdf

[4] *Report on system and market conditions, issues and performance: August and September 2020*, p2, California ISO Department of Market Monitoring, November 24, 2020: http://www.caiso.com/Documents/ReportonMarketConditionsIssuesandPerformanceAugustandSeptember2020-Nov242020.pdf

measures to ensure that CAISO reliability is not compromised when non-RA capacity may economically displace commitment of RA resources, but remains available to support high priority exports. Further, DMM reiterates the importance of the ISO developing tools that ensure access to RA capacity needed to accommodate uncertainty in system conditions in both the day-ahead and real-time timeframes.

Potential economic displacement of RA capacity and the need to account for uncertainty

As DMM understands the Straw Proposal, non-RA capacity that remains uncontracted and unassociated with a PT export after the day-ahead market processes would remain available to be contracted by an exporter, and to be associated with a PT export in real-time. This would grant the associated real-time PT export a higher scheduling priority than CAISO load. However, if non-RA capacity has economically displaced RA capacity, and is needed to meet real-time CAISO load in the absence of the displaced RA capacity, allowing the committed non-RA capacity to be associated with exports of higher priority after the time has passed to commit additional RA resources can lead to the potential for reliability issues for CAISO.

In the IFM, both RA and non-RA resources compete on the basis of economic bids. In the scenario where non-RA capacity not contracted with an exporter is more economic than CAISO long-start RA capacity, the non-RA capacity will displace the day-ahead commitment of RA long-start capacity. Because long-start resources rely on a binding real-time commitment from the day-ahead market, this outcome can render long-start RA capacity unavailable to the real-time market. Should an exporter in real-time contract with and associate a PT export with the non-RA capacity committed in the day-ahead market, the equivalent portion of CAISO load would now have lower real-time scheduling priority than the export associated with the non-RA capacity in real time. However, the opportunity to commit any additional long-start RA capacity has passed, and as a result, the CAISO BAA becomes short this amount of capacity. A similar outcome may occur within the real-time market if non-RA resource commitments in real-time displace RA capacity that can be committed within real-time, but exporters are able to associate a PT export with the committed non-RA capacity after it becomes infeasible to commit additional RA capacity.

Each of the scenarios described above have potential to create reliability issues for the CAISO BAA. Further, operators of non-RA capacity that receive a day-ahead award may be incentivized to sell this capacity outside of CAISO after the day-ahead market runs, as any short term real-time capacity revenues may supplement day-ahead energy revenues from the CAISO market. This may be particularly true on the highest load days when energy and capacity may be scarce throughout the west.

One potential solution to the issues caused by day-ahead displacement of RA long-start resources by non-RA capacity designated in real-time to support PT exports is to allow only non-RA capacity incremental to day-ahead awards to be sold outside of CAISO and associated with a PT export in real-time. This approach would ensure that non-RA capacity awarded in

day-ahead over a long-start CAISO RA resource cannot become inaccessible to CAISO load in real-time after the time horizon to commit the displaced CAISO long-start RA resource has passed.

To manage potential uncertainty within the real-time market, DMM recommends the ISO develop tools to explicitly account for uncertainty between the HASP market run and the time of power flow. These tools could support CAISO reliability by preserving access to sufficient RA capacity through the time of power flow, ensuring that CAISO load needs can be met after accounting for all exports.

Explicitly adding additional uncertainty into RUC could further support both CAISO reliability and firmness of RUC cleared exports passed to real-time by ensuring that day-ahead exports receiving high scheduling priority in real-time are highly likely to be sourced only from excess capacity.

A standard of firm exports requires market design changes and interregional coordination

As noted in DMM's earlier comments, an approach dependent on adjustments to RUC and real-time demand requirements could have undesirable consequences on the efficient operation of the CAISO day-ahead and real-time markets.[5] However, in the context of the current CAISO market, these tools are the most analogous available tools to the type of surplus capacity evaluation described by other WECC BAAs to support firm energy exports. The existing RA and CAISO market designs do not support a standard of firm day-ahead exports. Ultimately, to support a standard of firm day-ahead exports from the CAISO market when not backed by non-RA capacity would require additional market design changes.

Finally, if WECC trading parties collectively desire an environment where all exports that clear a BAA's day-ahead scheduling process are assumed firm, and if the ISO wishes to also conform to this standard, DMM encourages the ISO to reach out to each of the WECC BAAs to develop a consistent written policy formalizing a clear and equal standard across all BAAs. Formalizing this operating practice could improve certainty of reliability, rather than relying on reputational impacts or "good neighbor" operating practices.

Storage Resources

Measures for storage resources preparedness

DMM supports the ISO creating operator tools to, if necessary, help efficiently manage storage resources during stressed conditions to maintain reliability.

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[5] *Comments on Market Enhancements for Summer 2021 Readiness Stakeholder Workshops January 12-13, 2020*, Department of Market Monitoring, January 21, 2020, p. 3: http://www.caiso.com/Documents/DMMCommentsonMarketEnhancementsSummer2021Readiness-Jan12-13Workshops-Final.pdf

There is not sufficient detail on the adjustments to the AGC algorithm for DMM to comment on at this time. Details on the adjustments would help stakeholders better understand what the proposed changes are.

Requirements for storage resources during tight system conditions

In comments on the ISO's RA Enhancements Draft Final Proposal, DMM indicated that it does not support the ISO's minimum state of charge proposal for storage resources.[6] While DMM shares the ISO's concerns about an increasing reliance on batteries with limited energy and potentially limited charge across peak net load hours, DMM does not support the ISO's proposal to subject batteries providing resource adequacy to minimum state of charge constraints in the real-time market based on day-ahead awards.

Instead, DMM suggests that the ISO focus on enhancing its processes and tools for managing storage resources through exceptional dispatches for summer 2021. DMM provided examples that the ISO could consider to improve its processes for issuing exceptional dispatches to storage resources when needed. These examples included making real-time assessments of the need for storage resources to be available system-wide and in local areas, sending minimum state of charge instructions to resources instead of static megawatt values (which last summer led to infeasible dispatches and often resulted in resources being backed off ancillary service awards), and stepping in minimum state of charge constraints across hours leading up to the net load peak.[7]

Storage dispatch in real-time – energy bid range and ancillary service award interactions

DMM has observed some dispatch issues related to storage resources under the non-generator resource model that could be addressed by summer 2021 to help the ISO better manage storage resources in real-time.

DMM has observed that a battery resource's ability to feasibly provide ancillary services can become constrained when its discharge energy bid range is less than upward ancillary service awards, or when its charge energy bid range is less than downward ancillary service awards. This issue is particularly prevalent when batteries receive significant ancillary awards across the day in the day-ahead market and ancillary service schedules are subsequently self-scheduled in real-time.

When a battery's discharge energy bid range is less than upward ancillary service awards, the resource must be operating at a charging operating point to feasibly provide upward ancillary services. This causes the resource's state of charge to increase, eventually causing the resource to approach its maximum state of charge. Eventually, the market may discharge the resource (to reduce state of charge) and back the resource off its upward reserve awards in order to be able to move the resource back to a charging operating point in later intervals. When a

[6] *Comments on resource adequacy enhancements draft final proposal phase 1*, Department of Market Monitoring, January 21, 2021, pp. 6-10: http://www.caiso.com/Documents/DMMCommentsonResourceAdequacyEnhancements-DraftFinalProposalPhase1-Jan212021.pdf

[7] *Ibid*., pp. 9-10.

resource is discharged in this scenario, its ancillary service awards become infeasible and the ISO must instead procure reserves from other resources in real-time.

For example, consider a battery with a -10 MW PMIN, a 10 MW PMAX, and a 40 MWh maximum state of charge. Suppose the resource receives 8 MW regulation up awards from the day-ahead market which are self-scheduled into real time. Suppose the resource offers a maximum energy discharge bid range of 4 MW in real-time. The resource must therefore be operating in a charging state, at -4 MW, for its 8 MW upward reserve schedule to remain feasible, as shown in Figure 1.

However, the resource' state of charge increases when operating in a charging state. Suppose this resource came in to real-time with a 35 megawatt-hour state of charge. If operating at -4 megawatts from the start of the day, the resource would hit its maximum state of charge (40 megawatt hours) by about 2:15. Because the resource has self-scheduled regulation up awards in subsequent intervals, the market discharges the resource in order to create additional charging headroom so that the resource can be moved back to a charging operating point. When the market discharges the resource, its regulation up awards become infeasible, causing the market to have to find replacement capacity from other resources in real-time. The market will continue this pattern as the resource continues to approach its maximum state of charge, as shown in Figure 2.

Similarly, when a battery's charge energy bid range is less than downward ancillary service awards, the resource must be operating at a discharge operating point to feasibly provide downward ancillary services. This causes the resource's state of charge to decrease, eventually causing the resource to approach its minimum state of charge. Eventually, the market may charge the resource (to increase state of charge) and back the resource off its downward reserve awards in order to be able to move the resource back to a discharging operating point in later intervals.

Figure 1. Battery Example – Operating Characteristics and Dispatch

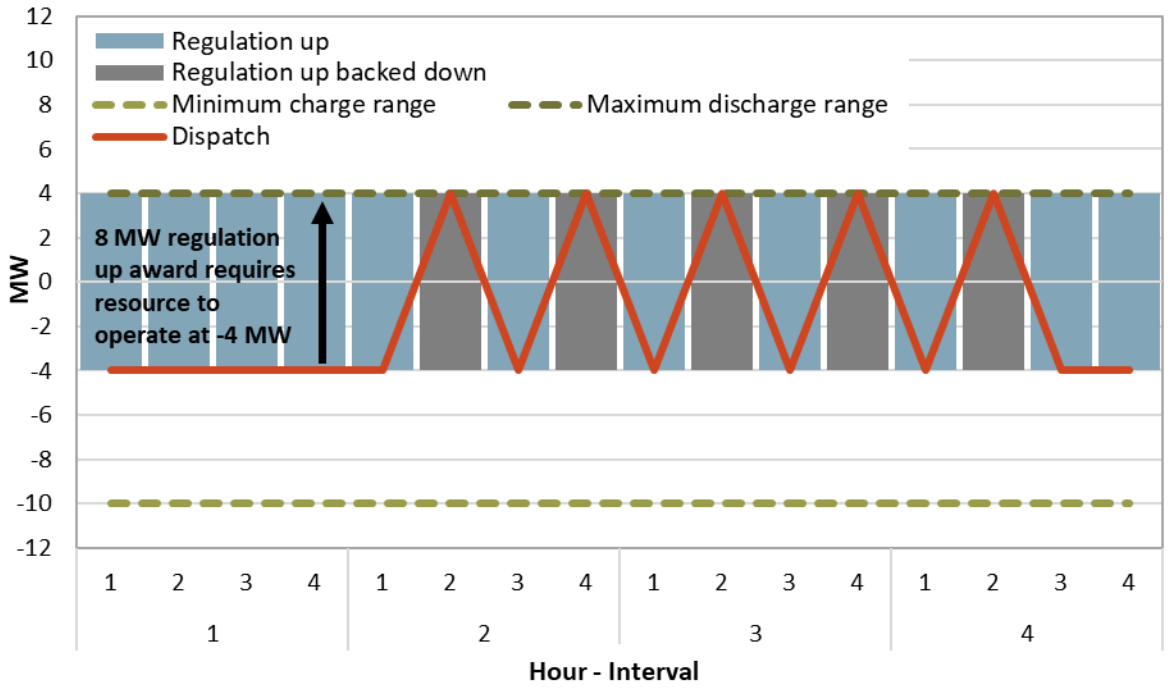
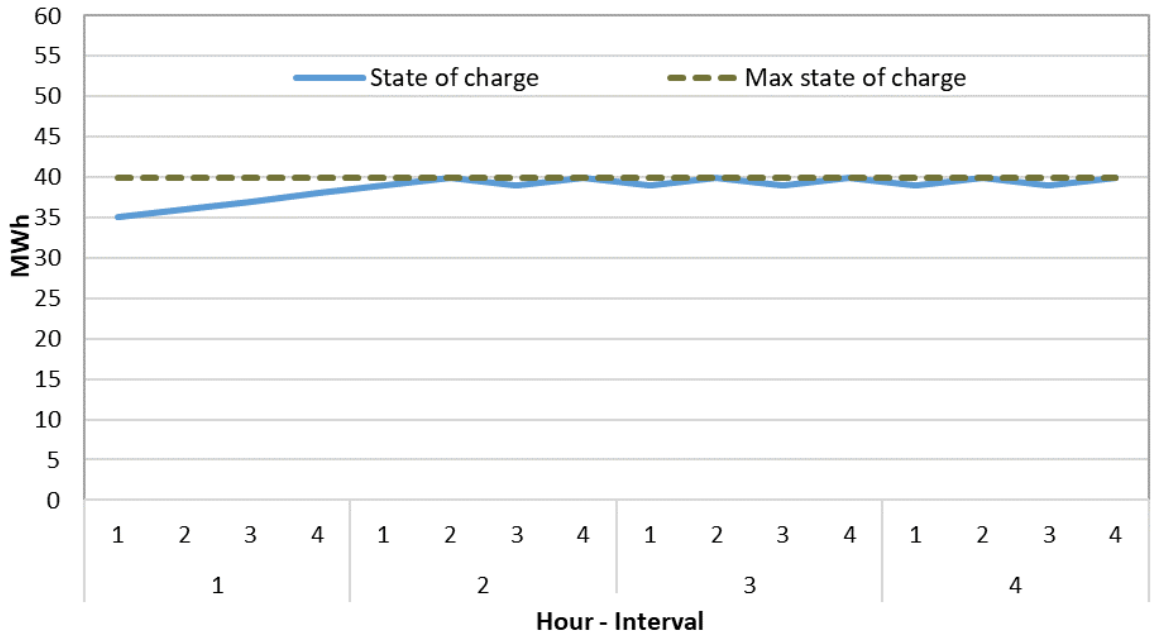


Figure 2. Battery Example – State of charge



The ISO could consider applying the following rules by summer 2021 to limit the occurrences of batteries being forced to charge or discharge when minimum or maximum state of charge constraints are reached which results in infeasible ancillary service schedules (and then requires the ISO to find reserves from other resources in real-time):

- Require that a battery's day-ahead discharge energy bid range is sufficient to cover its highest upward reserve offer; Require that a battery's real-time discharge energy bid range is sufficient to cover the greater of its highest upward reserve award self-scheduled in the real-time market, or its highest upward reserve offer in real-time. There may be instances where a resource receives spin *and* regulation up awards such that the resource has to be operating in a charging state because it is limited by its PMAX. While this type of rule would not cover this scenario, such a rule could help mitigate the frequency of battery resources running up against maximum state of charge constraints causing infeasible reserve schedules.
- Require that a battery's day-ahead charge energy bid range is sufficient to cover its downward reserves offered in the day-ahead market; Require that a battery's real-time charge energy bid range is sufficient to cover its downward reserves self-scheduled or offered in the real-time market.

Storage dispatch in real-time – RTD state of charge constraints

When a battery resource's discharge energy bid range is less than upward ancillary service awards, or when a resource's charge energy bid range is less than downward ancillary service awards, then the following RTD constraints specified in the Market Operations BPM Section 7.8.2.5 are enforced.[8] :

$$SOC_{i,te} \geq \underline{SOC}_{i,te} + \max\left(0, SSEn_{i,te}, \underline{P}_{i,te} + SSRd_{i,te}\right)\frac{RM}{T}$$

$$SOC_{i,te} \leq \overline{SOC}_{i,te} + \eta_i \min\left(0, SSEn_{i,te}, \overline{P}_{i,te} - SSRu_{i,te} - SSSr_{i,te} - SSNr_{i,te}\right)\frac{RM}{T}$$

These constraints result in maximum state of charge and minimum state of charge constraints becoming more limiting than observed in the 15-minute market. While DMM understands that the intent of these constraints are to ensure that a battery has sufficient charge or headroom to charge to ensure that ancillary service awards or self-schedules are feasible for the rest of the hour in RTD, in practice, these constraints have appeared to impact battery resource schedules in a way that is counter to their intent. DMM recommends that the ISO consider removing these constraints.

For example, when a lower maximum state of charge is enforced in RTD to ensure that the resource maintains enough state of charge headroom to maintain feasible ancillary service awards or maintain charging self-schedules while operating at a charging state for the rest of the hour, the lower maximum state of charge constraint in RTD results in the resource approaching its maximum state of charge sooner and more frequently. RTD will try to move the

[8] Market Operations BPM, Section 7.8.2.5.

resource to its self-scheduled charging operating points, but the battery approaches the lower maximum state of charge constraint in doing so. The result is that RTD will eventually discharge the battery or move it off charging to make additional charging headroom, in order for the resource to be moved back to a charging operating point in future intervals.

Counter to the intent of the constraint, the resource is discharged and backed off its charging operating point more frequently being subject to the lower maximum state of charge, and therefore its ancillary service awards or self-scheduled charging becomes infeasible more frequently. Because ancillary services are not procured in RTD, there is also no capacity procured to replace the reserves which become infeasible in RTD which could pose potential reliability issues.

Demand response resource dispatch and real-time price impacts

In addition to reviewing RDRR dispatch and pricing, DMM reiterates its recommendation that the ISO review in-market and out-of-market PDR dispatch processes to help ensure that in the future all potential demand response is dispatched before shedding load. On high load days in August and September, 2020, the ISO did not dispatch a portion of the proxy demand response (PDR) resource adequacy fleet that was made available in the day-ahead timeframe.[9]

The ISO is also looking into how low submitted ramp rates affected the real-time dispatch proxy demand response resources. The combination of low submitted ramp rates and hourly block dispatch can significantly reduce the amount of hourly proxy demand response that can be utilized by the ISO in real-time.

Because hourly demand response resources are required to have a flat schedule across the hour, hourly resources' HASP schedules across an hour are limited by the amount that a resource can ramp between hours. In other words, hourly demand response schedules are limited by the highest possible operating point the resource can reach ramping from one hour to the next. HASP optimizes schedules in 15 minute increments and resource schedules between hours depend on how much a resource can ramp across a 15 minute timeframe. When proxy demand response resources on the hourly dispatch option reflect very slow ramp rates, the maximum amount of capacity that can be scheduled from one hour to the next can become very limited.

DMM suggests that the ISO and stakeholders consider whether hourly proxy demand response resources should be allowed to ramp across a longer time horizon or whether the block schedule constraint could be optional. As DMM understands, one of the main drivers behind demand response providers' use of hourly dispatch options was to allow for a longer notification time to position resources to curtail load. A longer ramping horizon would allow these resources to ramp to higher operating points within an hour, allowing the ISO to access a greater portion of hourly demand response capacity that may be slow ramping. While a flat schedule across the hour may not be guaranteed, demand response providers would still be made aware of HASP schedules almost an hour in advance.

[9] *DMM Report on system and market conditions, issues and performance: August and September 2020*, pp. 56-60.

Import and export market incentives during tight system conditions

The ISO currently schedules hourly block imports in an hour ahead process (HASP) but settles them on prices from separate fifteen-minute markets (FMM). There is the possibility imports will be settled on prices below their offer prices cleared in the HASP. The ISO is concerned that this risk of settling on FMM prices below the HASP cleared offer prices will reduce imports offered in HASP.

The ISO presents two potential proposals for addressing this risk under tight system conditions: 1) settling hourly block schedules on the higher of HASP or FMM prices, or 2) paying bid cost recovery. DMM recommends the ISO consider settling hourly block intertie schedules on the HASP price under tight conditions, rather than offering the higher of HASP or FMM. The ISO could also consider paying hourly block imports the higher of their offer price or the FMM price. The ISO should also consider two other alternatives during tight system conditions: 3) settling ties at the HASP price, or 4) paying the imports the higher of their bid or the FMM price.

The ISO's proposed higher of HASP and FMM price method guarantees importers the HASP price and removes the risk that an import will be paid less than its bid price. However, this proposal would also give imports a free option on the FMM price. This free option is not necessary to remove the risk of an import being paid less than its bid price. The "higher of" price proposal would likely result in higher overall uplift charges compared to simply settling on the HASP prices used to clear bids.[10]

The second proposal by the ISO is to pay imports bid cost recovery payments. The ISO points out the potential gaming concerns with this approach. Another potential issue with this approach is that it might not remove the targeted risk. Bid cost recovery is calculated by netting bid costs and revenues over the trade day (though not netting day-ahead with real-time). If an importer has earned net revenues in excess of bid costs prior to the peak net load hours, then FMM prices below HASP prices in the peak hours would be netted against the previous hours' net revenues. As a result, the importer would still face the risk that an import in the peak hours could get paid less than its bid price.

Another option to consider is settling the intertie schedules at the HASP price during tight system conditions. This would remove the risk that an import will be paid less than its bid price. Settling intertie schedules at the HASP price during tight system conditions would also be similar to the pre-FERC Order 764 market where ties were settled on HASP prices and internal generation on RTD prices.

A fourth option during tight conditions is to settle imports on the better of their bid (used to clear the imports in HASP) and the FMM price. This settlement is the same as used for exceptional dispatches on the ties.[11] This better of bid or FMM price settlement would remove the risk of imports being paid less than their bid and reduce incentives for importers to

[10] If real-time incremental imports exceed incremental exports. Exports would have to pay the highest price between HASP or FMM.

[11] a.k.a. operator intertie adjustments.

withhold import bids in hopes of receiving better settlement from out-of-market operator actions.

Knowing which hours the ISO would have considered tight system conditions in 2020 would be useful in assessing the various settlement options and other aspects of the proposal. DMM asks that the ISO list which hours would have been considered tight, and what triggered the designation, in their next proposal so that stakeholders can better understand how the proposed designations would work.

EIM coordination and resource sufficiency test review

One of DMM's main recommendations in its report on summer 2020 conditions was for western balancing areas to coordinate on how to prioritize transfers between areas during tight conditions. Therefore, DMM strongly supports the ISO holding workshops and engaging in other forms of collaboration with EIM entities to enhance coordination with EIM entities and other areas in the west during emergency conditions.

DMM recognizes that the EIM resource sufficiency tests have been designed to incorporate compromises that address many complex, competing priorities. DMM supports the ISO and stakeholders exploring changes to the design that could better disincent balancing areas from leaning on each other while still enabling the efficiency of inter-balancing area trades. While we understand the ISO making limited changes to the capacity test given the complexity and compressed timeframe for the summer readiness initiative, the ISO should open a stakeholder initiative on the EIM sufficiency tests as soon as feasible to do so.

DMM supports the ISO's proposed changes to the capacity test to fix the counting of de-rates and mirror resources. DMM also supports the ISO exploring the option to add net load uncertainty to the capacity test requirements. However, the proposal to exclude uncommitted resources with start-up times greater than one hour can exclude actually available capacity from the test.

As an example consider a two BAA EIM where each BAA has sufficient capacity to meet its own load without EIM transfers. Even though BAA 1 can meet its load with its own capacity, the EIM short term unit commitment optimization, which has a multi hour lookout, decides it is more efficient to transfer energy from BAA 2 to BAA 1 rather than turn on a resource in BAA 1 with a two hour start time. Under the ISO's proposal the resource in BAA 1 would not be counted in the capacity test even though it was actually made available and is only offline because EIM transfers were more efficient. If the transfers are limited as a result of this exclusion, efficient EIM trades could be unnecessarily forgone among other potential effects.

Short term scarcity price enhancements

DMM has recommended that the ISO proceed cautiously with potential changes to scarcity pricing as scarcity pricing is a complex issue. The proposed 'scarcity pricing' changes are not well vetted and it is not clear whether or not it will actually create more incentives to reduce supply than to increase it. A sharp discontinuous increase in prices creates incentives to offer less supply than actually available to increase the prices. Under the tight system conditions in

which the ISO proposes to use the penalty prices, the possibility for strategic withholding should be considered when proposing to greatly increase the rewards of doing so.

Furthermore, the need for these changes to the penalty prices is not clear given that the ISO will be changing how it settles imports under stressed conditions. The changes in the settlements of imports to stop imports from being settled at less than their offer price mean that imports can rely on their offer prices to keep them from being imported below their willingness to sell.

System market power mitigation

DMM supports the ISO proposal to implement system market power mitigation protections. Protections against the exercise of system market power in the CAISO balancing area would be valuable for this summer and beyond, regardless of the frequency or severity of such market in the past. As DMM has noted several times before, mitigation should be in place before system market power is exercised rather than waiting until after to put protections in place.[12] Further, as the ISO correctly pointed out on the stakeholder call, having DMM monitor for market power and then report or refer to FERC after the fact is not an appropriate or effective substitute for implementing automated mitigation measures. Such an after the fact approach would be at odds with FERC direction on market power issues.

After the August load shedding events, DMM thought it was prudent for the ISO to delay taking the system mitigation proposal to the Board in 2020. It was reasonable to take some time to consider potential impacts of CAISO system mitigation on incentives for non-resource adequacy hourly block imports to offer to CAISO during the very limited number of hours when there may not be sufficient resource adequacy capacity to meet CAISO load. The proposal discussed above to settle hourly block interties on the HASP price in these tight conditions would provide significant new assurances that importers would receive their offer price up to $1,000 – or $2,000 when justified by resource costs in CAISO or elsewhere in the west – in these conditions. This compensation assurance should help to alleviate concerns over uncertainty in CAISO pricing creating disincentives for imports to offer to CAISO in these rare circumstances. Therefore, DMM supports the ISO proceeding with its stakeholdered CAISO system mitigation proposal.

Resource adequacy availability incentives

One of the two days in which CAISO shed load in 2020 was a Saturday. Currently, the ISO's main incentive mechanism for resource adequacy resources to be available, RAAIM, does not penalize resources for not being available during the peak net load hours on weekends and holidays. DMM continues to recommend that the ISO add hours ending 17-21 on weekends and holidays to the availability assessment hours used in calculating the RAAIM penalties.

[12] See for example *Comments on System Market Power Mitigation Revised Draft Final Proposal*, Department of Market Monitoring, October 7, 2020 p.3: http://www.caiso.com/Documents/DMMCommentsonSystemMarketPowerMitigation-RevisedDraftFinalProposal-Oct72020.pdf

DMM also continues to recommend that the ISO consider adding a performance penalty for resource adequacy resources.[13] It may be appropriate for this summer to consider only adding such a penalty for demand response resources. A performance-based clawback of capacity payments could be particularly relevant for demand response resources because of the difficulty of determining in advance whether or not a new demand response resource—or an existing provider that is selling additional new capacity—is capable of providing, in critical hours, the quantity of resource adequacy capacity that the resource has been paid to provide.

[13] *Comments on Reliability Service Initiative – Phase 2 Second Revised Draft Final Proposal*, DMM, October 4, 2016, p. 2: http://www.caiso.com/Documents/DMMComments-ReliabilityServicesInitiativePhase2-SecondRevisedDraftFinalProposal.pdf