



Eight parties filed substantive responses to the March 29 filing.<sup>3</sup> These responses focused on the first and second elements of the filing. Some of these parties supported the CAISO proposals, some sought clarification on specific issues, and others protested the CAISO proposals on the minimum state of charge requirement and RA substitution rule changes.

For the reasons stated below, the Commission should accept the March 29 filing without condition or modification.<sup>4</sup>

## **I. Motion for Leave to File Answer**

Pursuant to Rules 212 and 213 of the Commission's Rules of Practice and Procedure,<sup>5</sup> the CAISO respectfully requests waiver of Rule 213(a)(2), 18 C.F.R. § 385.213(a)(2), to permit it to answer the protests filed in the proceeding. Good cause for the waiver exists because the answer will aid the Commission in understanding the issues in the proceeding, inform the Commission in the decision-making process, and help ensure a complete and accurate record in the case.<sup>6</sup>

## **II. Answer**

### **A. The Minimum State of Charge Tool is a Tailored Measure Necessary to Maintain Grid Reliability**

#### *1. The Minimum State of Charge Tool is Consistent with Order No. 841*

---

<sup>3</sup> Six Cities, Vistra, and MRP filed protests. WPTF, CESA, DMM, PG&E, and SDG&E filed comments.

<sup>4</sup> The CAISO files this answer pursuant to Rules 212 and 213 of the Commission's Rules of Practice and Procedure, 18 C.F.R. §§ 385.212, 385.213. For the reasons explained below, the CAISO respectfully requests waiver of Rule 213(a)(2), 18 C.F.R. § 385.213(a)(2), to permit it to answer the protests filed in the proceeding.

<sup>5</sup> 18 C.F.R. §§ 385.212, 385.213.

<sup>6</sup> See, e.g., *Equitrans, L.P.*, 134 FERC ¶ 61,250 at P 6 (2011); *Cal. Indep. Sys. Operator Corp.*, 132 FERC ¶ 61,023 at P 16 (2010); *Xcel Energy Servs., Inc.*, 124 FERC ¶ 61,011 at P 20 (2008).

Vistra protests the CAISO's proposed minimum state of charge tool because, in its view, Commission Order 841 precludes the CAISO from applying such a tool. Order No. 841 states that each ISO/RTO "must permit electric storage resources to manage their state of charge because it allows these resources to optimize their operations to provide all of the wholesale services that they are technically capable of providing"<sup>7</sup> and that "self-managing electric storage resources, just like all market participants, are subject to any nonperformance penalties in the RTO/ISO tariff, thus incentivizing them to ensure that they have sufficient energy available to meet their obligations."<sup>8</sup> Vistra argues these statements from Order No. 841 establish a clear rule that any form of ISO/RTO control over a storage resource's state of charge, even where it has sold capacity, is prohibited.<sup>9</sup>

The CAISO disagrees with this view because the minimum state of charge tool does not involve issues explicitly addressed in that order. Rather, in limited circumstances, the minimum state of charge tool prevents the CAISO market from dispatching the RA storage resource in the real-time market to ensure the resource has a sufficient state of charge to meet its day-ahead schedule. The CAISO proposal merely holds certain RA storage resources responsible for meeting their day-ahead market schedule. The CAISO awarded the schedule based on the resource's own day-ahead market bids. The CAISO is not submitting different bids for the resource or in the first instance directing the resource how it should bid. This means the storage resource

---

<sup>7</sup> *Electric Storage Participation in Markets Operated by Regional Transmission Organizations and Independent System Operators*, Order No. 841, 162 FERC ¶ 61,127 (2018) at P 246.

<sup>8</sup> Order 841 at P 250.

<sup>9</sup> Vistra protest, at 3.

controls how the minimum state of charge tool ultimately will affect it based on its own day-ahead market bids. This differs from the CAISO charging and discharging the storage resource and determining how to optimize operations on the resource's behalf.<sup>10</sup> Instead, the minimum state of charge tool is more like an alternative to the CAISO's existing exceptional dispatch authority, which the CAISO would have to utilize absent this new tool. Unlike the minimum state of charge tool, an exceptional dispatch is a direct case of the CAISO controlling a storage resource's state of charge and ordering the storage resource what to do. The minimum state of charge tool thus helps avoid the direct management of storage Order No. 841 sought to prevent. Without the tool, the CAISO instead would have to rely on out-of-market exceptional dispatch to ensure RA capacity from storage serves its reliability function. This is not appropriate because in approving the CAISO's exceptional dispatch authority, the Commission made clear that exceptional dispatches "should not become a frequent occurrence and should be reserved for genuine emergencies where the CAISO needs to take actions outside the market software for maintaining system reliability."<sup>11</sup> Here, the CAISO proposes to add functionality to the market software to avoid exceptional dispatch and reserve that authority for times when there is no other practical option.

Additionally, the minimum state of charge tool would not apply to all storage resources, only to those that have voluntarily agreed to provide RA capacity, participate as non-generator resources, and have chosen the limited energy storage option in master file. Further, such resources continue to be "the default manager of the

---

<sup>10</sup> Order 841 at PP 246-47.

<sup>11</sup> *Cal. Indep. Sys. Operator Corp.*, 116 FERC ¶ 61,274, at P 267 (2006).

resources state of charge.”<sup>12</sup> The CAISO sees nothing in Order No. 841 expressly preventing the CAISO from imposing, in the rare circumstances where operational outcomes indicate supply and demand will likely be tight, a limited requirement for RA storage resources to maintain their charge in real-time to meet their day-ahead schedules and address immediate reliability needs.

*2. The Minimum State of Charge Tool is an Appropriate Measure to Address a Clear Problem and Will Not Cause Market Inefficiencies*

Vistra also argues that the minimum state of charge tool is inefficient, has limited reliability benefits, and is not needed to address the problems the CAISO claims it addresses. Vistra seems to argue that the minimum state of charge tool will blunt the efficiency that the CAISO market provides by having a day-ahead market that settles based on projected conditions, followed by a real-time market that adjusts based on actual conditions.<sup>13</sup> Vistra claims the minimum state of charge tool “could undermine real-time reliability needs if the day-ahead solution is a poor approximation of actual need.”<sup>14</sup> Vistra also alleges the tool is unnecessary because storage resources already are incentivized to discharge when their energy is needed most.<sup>15</sup> In the rare cases where that is not the case, Vistra states it “sees no evidence that the exceptional dispatch authority is insufficient to mitigate the operational concerns” that prompted the minimum state of charge tool.<sup>16</sup>

---

<sup>12</sup> Order No. 841 at P 249.

<sup>13</sup> Vistra protest, at 4 (“the foundation of ISO markets is that it is economically efficient for the market solution to adjust a resource’s day ahead schedule when market conditions change between day ahead and real-time.”).

<sup>14</sup> *Id.*, at 5.

<sup>15</sup> *Id.*, at 4.

<sup>16</sup> *Id.*, at 5.

Vistra's long list of arguments about the efficiency, reliability, and necessity of the minimum state of charge tool are unfounded. Vistra overlooks the fundamental reason the CAISO proposes the minimum state of charge tool. As the CAISO fully explained in the March 29 filing, the minimum state of charge tool addresses a specific shortcoming in the CAISO markets for storage resources.<sup>17</sup> The different time horizons between the day-ahead and real-time market runs can lead the real-time market to award discharge schedules to storage resources before the hours when they are most needed. This timing discontinuity is why market incentives alone cannot address this issue. Vistra ignores that the market cannot solve for a problem caused by a gap in the market itself. The CAISO has been trying to address this gap in the energy storage enhancements stakeholder process, but it may not be technically feasible to extend time horizon of the real-time market.<sup>18</sup> Without these proposed measures, the CAISO may face reliability issues. The notion that market incentives alone are good enough to ensure reliable and efficient operations is belied by multiple other market features applicable to RA resources, *e.g.*, the must offer obligation, RA bid insertion, and RAIM. These all exist because market incentives alone may not necessarily lead to the desired outcome.

Contrary to Vistra's suggestion, relying solely on exceptional dispatch is not an acceptable path forward. Issuing exceptional dispatch is a manual process for CAISO operators that requires distinct actions for each resource subject to the exceptional dispatch. The issues motivating the CAISO proposal are of greatest concern on days with stressed conditions, *i.e.*, when the CAISO most needs to keep its operators from

---

<sup>17</sup> March 29 filing, at 13.

<sup>18</sup> More information about this stakeholder process is available at <https://stakeholdercenter.caiso.com/StakeholderInitiatives/Energy-storage-enhancements>.

involvement in extraneous activities. To date the CAISO has managed these issues through manual interventions, but that is not a practical long-term solution given the explosive growth in storage resources on the CAISO grid. Relying on exceptional dispatch as a long-term solution also is inappropriate because there is less transparency for the market processes through exceptional dispatch.<sup>19</sup> As noted above, the Commission intended the CAISO to use exceptional dispatch for one-off and transitory issues rather than persistent market shortcomings.<sup>20</sup> There is no reason in a situation like this, which will be persistent and systemic, that the CAISO should rely on exceptional dispatch instead of transparent market solutions.

The CAISO understands the minimum state of charge tool is not the optimal long-term solution. The CAISO initially proposed to enforce the minimum state of charge tool during the hours when resources were scheduled to charge in the day-ahead market, rather than working backwards from the first hour with a discharge award. Stakeholders representing storage resources explained their concerns that enforcing the tool too early in the day could prevent storage resources from discharging when prices are most volatile. By arbitraging between high and low market prices, storage resources can earn greater market revenue when prices are volatile than when the price is highest. Based on these concerns, the CAISO adjusted its proposal to enforce the minimum state of charge tool to apply for as few intervals as possible. With this more limited application, the CAISO has minimized the potential for adverse

---

<sup>19</sup> DMM's comments address this issue noting that it supports the minimum state of charge tool because it avoids the need for managing these issues through exceptional dispatch and the new tool will add transparency to how the CAISO manages these issues. See DMM comments, at 3.

<sup>20</sup> *Cal. Indep. Sys. Operator Corp.*, 116 FERC ¶ 61,274, at P 267 (2006) (exceptional dispatch should be limited to cases "where the CAISO needs to take actions outside the market software for maintaining system reliability").

impacts from the minimum state of charge tool. With these adjustments, the tool should have minimal market efficiency issues. These concerns also ignore the basic purpose of the minimum state of charge tool, which is to ensure the CAISO can serve load reliably during the net peak hours. Vistra's view of an optimal real-time dispatch could expose CAISO to shedding load when a straightforward market constraint could help prevent that outcome.

Vistra's argument that the minimum state of charge has negligible reliability benefits, or even negative reliability impacts, again ignores the CAISO's key reason for proposing the minimum state of charge tool. Vistra is correct that the real-time market can adjust based on actual conditions that materialize during the operating day and that a storage resource's real-time market awards can be different from the day-ahead awards because of that. But that alone does not resolve the issue the CAISO faces. The specific issue is, on days with a RUC infeasibility, how likely is it those conditions will change so dramatically that had those events been factored into the day-ahead market, a storage resource would have been awarded day-ahead discharge schedules at materially different parts of the day. The likelihood of that happening must be weighed against the problems caused by the discontinuity between the day-ahead and real-time markets' respective time horizons, which exists every day there is a RUC infeasibility. The CAISO proposal effectively balances the risk of these two cases occurring, and the CAISO is confident that it has weighed these risks appropriately. In the rare cases conditions change dramatically between day-ahead and real-time, the CAISO can manage the challenges using exceptional dispatch. This is an unexpected scenario the CAISO can and should rely on exceptional dispatch to address. In

essence, Vistra argues the CAISO should use exceptional dispatch for a persistent and expected issue but forgets that exceptional dispatch exists for the odd case where the CAISO would still need it for storage RA resources once the minimum state of charge tool is implemented.

*3. Minimum State of Charge Tool is Appropriately Applied to Storage Resources Co-Located with Other Generation Types.*

The CAISO proposes to exempt hybrid resources with a storage component from the minimum state of charge tool. The CAISO would not exempt a storage resource co-located with a resource of a different generation type. Six Cities protests that “[t]his differential treatment is unjustified and unduly discriminatory, particularly given that the co-located resource model is the framework that the CAISO has had in place for multiple years and, until the more recent development of the hybrid model, was the framework that early adopters of mixed fuel resource technologies expected to use.”<sup>21</sup> Six Cities explains that it is concerned that the minimum state of charge tool might direct a storage resource co-located with a wind or solar resource to charge “when the adjacent renewable resource may not be generating or may not be generating at the level needed to provide the appropriate level of charge.”<sup>22</sup> According to Six Cities, this would force the storage resource to charge from the grid, which could jeopardize its eligibility for investment tax credits (ITC) and could run counter to provisions in development agreements.<sup>23</sup> To avoid this outcome, Six Cities is concerned that “co-

---

<sup>21</sup> Six Cities protest, at 10.

<sup>22</sup> *Id.*

<sup>23</sup> *Id.*

located storage will choose not to designate such resources for RA capacity to avoid violating ITC-derived restrictions on grid charging.”<sup>24</sup>

The CAISO was clear in its initial filing it cannot apply the minimum state of charge tool to hybrids with a storage element “because the market recognizes them as a single resource, and they would not have a distinct discharge schedule like a pure storage resource.”<sup>25</sup> Even if it could separate the storage element from the non-storage element, there is a questionable basis for applying the tool to a hybrid. A hybrid resource with a storage element has more ability to control its availability to meet day-ahead schedules because both generation elements are under common control. On the other hand, a storage resource co-located with a variable energy resource constitutes two separate resources at the same location. Aside from transmission limitations, the CAISO market does not account for the interaction between the two generators and the non-storage resource will not necessarily bid into the market to benefit the storage resource meeting its schedules. Hybrids with a storage element and storage resources co-located with wind or solar are two distinct circumstances that are not situated similarly. Critically, those designations are not based on physical or operational characteristics; they are based on the owners’ elections and nothing else. If a resource owner seeks to avoid these risks, it can simply elect to participate as a hybrid resource at any time.

The CAISO also questions Six Cities’s view that a co-located storage resource would be incapable of avoiding charging from the grid. A co-located storage resource

---

<sup>24</sup> *Id.*, at 10-11.

<sup>25</sup> March 29 filing, at 16.

will know whether the tool will apply after the CAISO posts day-ahead market results. It also will have a meteorological forecast for the next day, so it can plan ahead and submit real-time bids that account for how those conditions will impact a co-located wind or solar resource and the storage resource's day-ahead discharge schedules.

**B. The CAISO Proposal on Substitution Recognizes the Commitment RA Resources Make to the CAISO and Ensures the Existing Planning Reserve Margin is Met**

*1. The CAISO Proposal Places Reasonable Burdens on Suppliers of RA Capacity*

Parties opposing the CAISO substitution proposal argue it places unreasonable burdens on RA resources because it is difficult to secure substitute capacity and when it is available, it can be expensive.<sup>26</sup> Six Cities questions if there is even sufficient non-RA capacity on the CAISO grid to meet the new requirements. WPTF, Vistra, and MRP express concern about how the CAISO proposal would affect unplanned outages that happen in the maintenance outage timeframe.<sup>27</sup> With maintenance planned far in advance, the supplier has time to secure substitute capacity. Parties explain this is not the case with outages identified with relatively little time left in the planned outage timeframe. WPTF claims that because “short term markets for substitute capacity are highly illiquid, generators may not be able to find substitute capacity for outages that occur after the monthly showing timeframe.”<sup>28</sup> In the view of these protesters, the CAISO proposal puts generators in an impossible position.

---

<sup>26</sup> Vistra protest, at 2; Six Cities protest, at 4; WPTF comments, at 3-4.

<sup>27</sup> WPTF comments, at 3-4; Vistra protest, at 2; MRP protest, at 16.

<sup>28</sup> WPTF comments, at 3-4.

The CAISO disagrees with these arguments because: (1) the CAISO proposal places appropriate obligations on RA resources; (2) the CAISO proposal leaves ample opportunities for RA resources to take maintenance outages; and (3) the arguments are fundamentally about existing rules.

The CAISO first reiterates its basic position that “when a resource provides RA capacity to the CAISO, it is committing it will be available to meet its obligations to provide capacity when and where it is needed.”<sup>29</sup> If a resource cannot meet the obligation it knowingly and willingly committed to meet, it is just and reasonable for the CAISO to expect the resource to find a substitute or not show itself as RA capacity and allow another resource to meet the obligation.

The CAISO also disagrees its proposed RA substitution rules place resource owners in an impossible situation. The CAISO agrees it may be difficult to secure substitute capacity in the peak summer months. But resources, regardless of their RA status, should not be planning in advance to take maintenance outage during the peak months. That is when the CAISO most needs them to be operating. For off-peak months, there should be ample spare capacity for RA resources to take a maintenance outage. The difference between the month with the highest system RA requirement and the lowest system RA requirement is 17,490 MW.<sup>30</sup> CAISO data reflects that planned outages reach a maximum of approximately 3,500 MW in the non-summer months.<sup>31</sup>

---

<sup>29</sup> March 29 filing, at 26.

<sup>30</sup> As reflected in Table 1 of the March 29 filing, for 2020, September had the highest monthly system RA requirement at 49,135 MW and January had the lowest monthly system RA requirement at 31,645 MW. The difference between the two is 17,490 MW.

<sup>31</sup> Resource Adequacy Enhancements Phase 1 – Draft Final Proposal, at 19, fig. 2 (Dec. 17, 2020) (Draft Final Proposal), available at <http://www.caiso.com/InitiativeDocuments/DraftFinalProposal-SixthRevisedStrawProposal-ResourceAdequacyEnhancements.pdf>.

Further, because of the significant variation in monthly RA requirements between the peak and off-peak months, some resources are shown as RA capacity in limited months of the year. This allows them to take maintenance outages during their non-RA months because the CAISO's RA substitution rules only apply to the months a resource is shown as a RA resource.

The March 29 filing provided data reflecting a notable downward trend since July 2020 in the RA capacity on monthly RA plans above net RA requirements (*i.e.*, the RA headroom). The CAISO explained this shrinking headroom is relevant because under current rules, the headroom allows maintenance outages on RA capacity to move forward without requiring substitute capacity. With no headroom on the monthly showings, all planned outages not exempt from substitution would require substitute capacity. The CAISO further explained that because it expects this trend to persist, even without the rule changes proposed in the March 29 filing, in the near-term nearly all maintenance outages on RA resources would require substitution.

## *2. The CAISO Has Provided Significant Guidance on Forced Outage Reporting under Existing Tariff Provisions*

The March 29 filing addressed concerns raised during the stakeholder process about forced outage reporting. Some stakeholders claimed that the CAISO's current tariff rules distinguishing planned and forced outages are unclear and that generators reporting needed maintenance as a forced outage will risk an investigation over whether the outage met the CAISO tariff definition of a forced outage. The CAISO has referred to this as the "planned-to-forced" outage reporting issue, which covers cases where a generator either resubmits a forced outage after it has been denied as a planned outage or intentionally waits until the forced outage timeframe to submit a planned outage.

These parties presumably were not satisfied with how the March 29 filing addressed this issue and suggest the CAISO proposal cannot go forward without corresponding clarifications to the CAISO outage reporting tariff provisions.<sup>32</sup>

These complaints about the planned-to-forced outage issue are another case of parties using this proceeding to argue about existing features of the CAISO tariff rather than focus on the CAISO's proposed rule changes. The CAISO has not proposed in this filing to alter its longstanding tariff definitions of the terms "Forced Outage" or "Maintenance Outage." Further, nothing about the CAISO proposal adds ambiguity to these definitions.

The March 29 filing noted that the CAISO first addressed this issue through proposed revisions to the business practice manual for outage management that it pursued separate from the RA Enhancements initiative.<sup>33</sup> The impetus for the CAISO proposing those revisions was a troubling pattern of RA resources submitting forced outages after the CAISO denied their planned outages because they failed to meet their planned outage substitution obligation. The CAISO first proposed business practice manual revisions to address this issue in 2018.<sup>34</sup> Based on stakeholder feedback, the CAISO withdrew that first round of revisions and submitted a new set of revisions in 2019.<sup>35</sup> Two stakeholders, including Six Cities, appealed this second set of business

---

<sup>32</sup> WPTF comments, at 4; Vistra protest, at 6; MRP protest, at 13.

<sup>33</sup> March 29 filing, at 32.

<sup>34</sup> These revisions were offered in Proposed Revision Request (PRR) 1074, which was posted on August 3, 2018. Further detail on PRR 1074 is available at: <https://bpmcm.aiso.com/Pages/ViewPRR.aspx?PRRID=1074&IsDlg=0>.

<sup>35</sup> This was covered in PRR 1122. Further detail on PRR 1122 is available at: <https://bpmcm.aiso.com/Pages/ViewPRR.aspx?PRRID=1122&IsDlg=0>.

practice manual revisions to the CAISO's executive appeal committee. Through its appeal brief, the CAISO staff provided a comprehensive statement of when resources should report outages as planned outages and when they should report them as forced outages.<sup>36</sup> The March 29 filing cited the key passage, which explained that the determining factor is "regardless of any prior ISO denial of a maintenance outage request, when the participant submits a forced outage, does that participant have a credible basis for explaining why the outage cannot wait an additional eight days (i.e., it cannot be resubmitted as another maintenance outage request)?"<sup>37</sup>

CAISO's proposal herein raises no new issues about outage reporting or the outage definitions. Nor does the proposal change the CAISO's view of what its tariff requires. The CAISO identified the earlier business practice manual revisions explicitly as "an appropriate effort to give market participants a 'heads up' on how to avoid regulatory scrutiny . . . ."<sup>38</sup> There is no basis for parties to claim now that the CAISO's proposal introduces new ambiguities into this area of market operations.

### *3. Claims of Adverse Consequences are Speculative and Unfounded*

Beyond the direct impact to RA resources, protesters argue that the CAISO proposal will create a host of purported adverse impacts.<sup>39</sup> Vistra claims generators' inability to comply with the new rules "creates an incentive for resources to decline to

---

<sup>36</sup> CAISO PRR 1122 Answer Brief, at 2-3. Available at: <http://www.caiso.com/Documents/ISOAnsweringBrief-PRR1122-Jan062020.pdf>.

<sup>37</sup> March 29 filing, at 33 (citing CAISO PRR 1122 Answer Brief, at 6).

<sup>38</sup> CAISO's PRR 1122 Answer Brief, at 2.

<sup>39</sup> *E.g.*, Six Cities protest, at 4 ("Beyond stakeholders' valid concerns about the cost and feasibility of compliance with the new substitution requirements, the CAISO's proposal creates risks of unintended consequences possibly producing larger reliability problems.").

offer RA in months when maintenance outages are planned, depriving CAISO of RA capacity rather than enhancing access to RA capacity.”<sup>40</sup> Vistra, Six Cities, and MRP also assert that the CAISO proposal will reduce the pool of substitute capacity.<sup>41</sup> In their view, the possibility of needing substitute capacity for unplanned outages reported in the maintenance outage timeframe will lead suppliers to hold back more of their capacity rather than provide it on the bilateral substitute capacity market. WPTF and Vistra also argue that the CAISO proposal incentivizes generators to forego needed maintenance and instead run to failure, which ultimately will create greater system reliability issues.<sup>42</sup> Finally, MRP argues that the CAISO proposal effectively raises the planning reserve margin to the greater of 15 percent or the RA shown by load serving entities (LSEs).<sup>43</sup> MRP states that the CAISO provided no rationale for why costs of the higher planning standard are justified.

Except for MRP’s planning reserve margin comment, these are really complaints about existing aspects of RA program. Further, any possible marginal negative impact the CAISO proposal has must be weighed against the benefits the proposal confers through helping ensure that resources voluntarily choosing to provide RA capacity will meet their obligations or provide a substitute. Nevertheless, the CAISO addresses each of the perceived adverse impacts.

The CAISO accepts that a resource might hold itself out from providing RA capacity for a month in which it plans to take an outage but cannot, or will not, secure

---

<sup>40</sup> Vistra protest, at 2.

<sup>41</sup> Vistra protest, at 10; MRP protest at 14; Six Cities protest, at 4-5.

<sup>42</sup> WPTF comments, at 4; Vistra protest, at 8.

<sup>43</sup> MRP protest, at 6.

substitute capacity. The CAISO does not view this as a particular concern. It means instead the CAISO has a RA resource that will be available through the entire month. The CAISO is also skeptical that a resource would forego a month of capacity payments to avoid paying for substitute capacity for a few days. This is particularly true given the evidence that taking a maintenance outage outside the critical peak months should not be particularly difficult.

The CAISO addressed the capacity hoarding concern in the March 29 filing.<sup>44</sup> There the CAISO acknowledged this concern but identified reasons the impact is likely to be minimal. Protesters fail to undermine the CAISO's reasoning.

The CAISO is highly skeptical its RA substitution rules would induce a generator to forego needed maintenance. In planning maintenance, generators must consider a range of factors. For example, generators are still obligated to operate under good utility practice. In addition, the costs of a forced outage caused by unexpected issues likely will be significantly higher than routine preventive maintenance. The CAISO believes the benefits to generators of following good utility practice and maintenance far out-weigh the costs of procuring substitute capacity. Further, the CAISO has seen no evidence that its RA substitution rules have curtailed necessary maintenance. Because the CAISO's proposal merely represents an incremental tightening of the RA substitution rules, there is no reason to expect it will prevent needed maintenance, particularly when there should be ample substitute capacity available in non-peak months.

---

<sup>44</sup> March 29 filing, at 32.

The CAISO has been clear through its participation in proceedings at the California Public Utilities Commission there should be an increase in the planning reserve margin.<sup>45</sup> However, the CAISO has no ability to raise the planning reserve margin unilaterally under its tariff. Individual local regulatory authorities set the planning reserve margin for their jurisdictional load serving entities. MRP's argument that the CAISO is raising the margin is thus misplaced. As the March 29 filing documented, the CAISO proposal simply ensures LSEs and suppliers provide sufficient capacity to meet the current planning reserve margin. There the CAISO stated plainly that the planning reserve margin set by the California Public Utilities Commission (CPUC) "does not account for capacity unavailable due to planned outages [so not] requiring substitute capacity in all cases effectively lowers the planning reserve margin . . . ."<sup>46</sup>

#### *4. Diminished RA Headroom is Likely to Continue in the Near-Term*

MRP's protest questions the CAISO's claims about the magnitude of maintenance outages on RA resources today that have a substitution obligation.<sup>47</sup> Further, MRP argues that the recent trends of reduced RA headroom will not necessarily persist. MRP states that "this is a completely expected outcome given peak demands and California's unusually tight capacity conditions [and that it] is entirely possible that as California and the west increase the amount of installed capacity, this trend will ease or reverse."<sup>48</sup>

---

<sup>45</sup> For example, the CAISO has made this point in Track 3B.1 of the CPUC's current RA proceeding in docket no. R.19-11-009.

<sup>46</sup> March 29 filing, at 26-27.

<sup>47</sup> MRP protest, at 11.

<sup>48</sup> *Id.*, at 11-12.

The CAISO's best estimate is that since July 2020, slightly more than 86 percent of RA capacity on planned outage had a substitution obligation.<sup>49</sup> With an approximately 14 percent chance of having a planned outage approved without substitution, the CAISO stands by its statements in the March 29 filing that it "expects that even if it retained the existing rules, it would be in the position of requiring substitution on most RA maintenance outages"<sup>50</sup> and that "the likelihood of the CAISO approving RA maintenance outages without substitution under the current tariff rules is low."<sup>51</sup>

There are four reasons the CAISO believes the current trends will persist in the near-term.

1. More stringent requirements for RA imports.
2. Reduced reliance on RA credits.
3. More realistic capacity counting approaches for storage-backed hydro and demand response.
4. Continued retirements of thermal resources with a more variable and energy-limited resource fleet.

In a June 2020 decision, the CPUC imposed more stringent requirements on when its jurisdictional LSEs could claim RA capacity from imports.<sup>52</sup> In that decision, the CPUC ruled that resource-specific RA capacity imports must be resources that are

---

<sup>49</sup> This figure is based on the total excess RA capacity shown for these months divided by an approximation of requested planned outages on RA capacity. The CAISO derived this approximation by taking the average daily substitution assignment for each month at 22 days before the start of the month, as calculated under existing tariff section 40.9.3.6.1. For each month's average substitution assignment, the CAISO added that month's excess RA, if applicable, to approximate the total magnitude of RA capacity covered by a requested planned outage.

<sup>50</sup> March 29 filing, at 5.

<sup>51</sup> *Id.*, at 24.

<sup>52</sup> CPUC, Decision Adopting Resource Adequacy Import Requirements, D.20-06-028 (Jun. 25, 2020), available at: <https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M342/K516/342516267.PDF>.

pseudo-tied or dynamically scheduled.<sup>53</sup> Non-resource-specific RA capacity imports would only count if: “(a) the contract is an energy contract with no economic curtailment provisions; (b) the energy self-schedules (or in the alternative, bids in at levels between negative \$150/MWh and \$0/MWh) into the day-ahead and real-time CAISO markets at least during the Availability Assessment Hours throughout the RA compliance month, consistent with the MCC buckets; and (c) the energy must be delivered to the LSE in accordance with the governing contract, consistent with the [maximum cumulative capacity] buckets.”<sup>54</sup> RA imports historically have made up between seven and ten percent of the RA fleet. In imposing more stringent requirements on this pivotal source of RA capacity, this CPUC decision alone helps explain why July 2020 marked a new trend. This reduction in imports shown for RA capacity should continue once the CAISO pursues additional new requirements on RA imports, such as advance demonstrations of firm transmission procurement, in Phase 2 of the RA Enhancements initiative.

The CAISO has been working with local regulatory authorities (LRAs) since mid-2020 to eliminate the practice of LRAs crediting resources against their jurisdictional LSEs’ RA requirements when those resources are not shown on RA plans or subject to RAIM. The CAISO pursued elimination of this practice through a business practice manual change (Proposed Revision Request 1280). This change was in effect for the January and February 2021 RA months but was held in abeyance through the business practice manual appeal process. The impact of eliminating the credits was significant,

---

<sup>53</sup> *Id.*, at 69.

<sup>54</sup> CPUC D.20-06-028 at 70. The CPUC’s MCC buckets limit how much of a LSE’s RA requirements can be met by resources with various use limitations.

as seen by the RA deficiencies in both months. Although Proposed Revision Request 1280 is not in effect, the CAISO has continued to work with LRAs to eliminate their use of credited capacity and the BPM amendment may be put back into effect in August 2021 based on further consideration from the executive appeal committee. Based on these developments, the CAISO is confident that at the very least, going forward, credited capacity will be reduced, which, as seen in January and February, can create RA deficiencies.

As explained in the March 29 filing, the starting point of a resource's RA capacity value is its qualifying capacity (QC) value, which is set by the CPUC and other LRAs. As with RA credits, the CAISO has been working with LRAs to refine QC calculation methodologies. The goal is to create lower and more realistic values for non-thermal resources. One example is the QC methodology for storage-backed hydroelectric resources. In an April 17, 2020, filing, the CAISO explained its concerns on this topic, stating that hydro "QC values are set based on nameplate capacity [but the] CAISO and the affected stakeholders generally agreed this methodology can overstate the true contributions such resources make towards meeting the CAISO's capacity needs."<sup>55</sup> The CAISO also explained that it "agreed to work with the utilities in the CPUC's RA track 2 process to develop an alternate QC counting rule that would discount the RA capacity attributed to a hydroelectric resource based on the resource's expected production in years with limited precipitation."<sup>56</sup> The CPUC issued its ruling in that track

---

<sup>55</sup> Transmittal letter for CAISO tariff amendment to clarify Resource Adequacy obligations from the Commitment Costs Enhancements phase 3 initiative and other related matters, at 13, Docket No. ER20-1592-000 (Apr. 17, 2020).

<sup>56</sup> *Id.*

of its proceeding on June 30, 2020, in which it adopted such a methodology to “provide a more accurate measurement of the capacity that hydro resources can be expected to provide.”<sup>57</sup> In adopting this approach, the CPUC recognized it “may result in a reduction of capacity [but] the listed values will be much more reliable.”<sup>58</sup> In that same decision, the CPUC also adopted new QC methodologies for demand response resources that similarly were more closely based on observed conditions to promote “a more accurate, realistic and reliable QC of the [demand response] resources.”<sup>59</sup> The CAISO has continued to advocate at the CPUC for further refinements to the demand response QC methodology so it provides even more realistic capacity values. As with RA imports, these refined QC methodologies will reduce the values at which existing resources will count for RA. All else being equal, reducing the value of existing resources while leaving RA requirements static will reduce RA headroom.

The CAISO has seen significant resource retirements in recent years. This is a trend seen across the Western Interconnection. The CAISO recently advocated that the CPUC authorize procurement of an additional 10,000 MW of new capacity by 2025 to meet mid-term reliability needs.<sup>60</sup> While the CAISO waits for these new resources to come online, it foresees continued capacity scarcity that will continue to support a trend of small or non-existent RA headroom. By the time that capacity comes online, the

---

<sup>57</sup> CPUC, Decision Adopting Local Capacity Obligations For 2021-2023, Adopting Flexible Capacity Obligations For 2021, and Refining the Resource Adequacy Program, at 24, D.20-06-031 (Jun. 25, 2020), available at <https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M342/K083/342083913.PDF>.

<sup>58</sup> CPUC D.20-06-031 at 24.

<sup>59</sup> *Id.*, at 46.

<sup>60</sup> Reply Comments of the California Independent System Operator Corporation on Administrative Law Judge’s Ruling, CPUC Docket No. R.20-05-003 (Apr. 9, 2021).

CAISO expects that its proposal will be superseded by the planned outage reserve margin approach it has proposed for Phase 2 of the RA Enhancements initiative.

*5. Protesters' Proposed Alternatives are not Practical and are Not Relevant to Whether the CAISO Proposal is Just and Reasonable*

The three protesting parties all offer different alternatives CAISO should have considered that presumably would have made the proposal just and reasonable. Because the CAISO's proposal is just and reasonable, the Commission need not consider alternatives to that proposal. Although the CAISO has no obligation under section 205 to demonstrate that its proposed tariff change is superior to any alternatives,<sup>61</sup> it briefly addresses each alternative.

Vistra argues that the “most straightforward solution to the problem CAISO has identified would be to recalculate the planning reserve margin” to create additional room for outages without substitution.<sup>62</sup> Alternatively, Vistra suggests the Commission require the CAISO to revise “the proposal to only apply the substitution requirement to specific months with higher risk of insufficient Resource Adequacy,” as PJM does.<sup>63</sup> Vistra's suggestion about the planning reserve margin is unrealistic for reasons described above. The CAISO has no authority to change the planning reserve margin

---

<sup>61</sup> See, e.g., *ISO New England, Inc.*, 162 FERC ¶ 61,206, at P 33 (2018) (“[T]he question before the Commission . . . is whether ISO-NE has demonstrated that its [proposals] are just and reasonable, not whether ISO-NE's proposal is more or less just and reasonable than protesters' proposed alternatives.”) (footnote omitted); *Louisville Gas & Elec. Co.*, 114 FERC ¶ 61,282, at P 29, *order on reh'g*, 116 FERC ¶ 61,020 (2006) (finding that “the just and reasonable standard under the FPA is not so rigid as to limit rates to a ‘best rate’ or ‘most efficient rate’ standard.”); *City of Bethany v. FERC*, 727 F. 2d 1131, 1136 (D.C. Cir. 1984) (when determining whether a proposed rate was “just and reasonable”, as required by the FPA, the Commission properly did not consider “whether a proposed rate schedule is more or less reasonable than the alternative rate designs”).

<sup>62</sup> Vistra protest, at 7.

<sup>63</sup> *Id.*, at 9.

unilaterally. Instead, it requires collaboration among the LRAs within the CAISO's balancing authority area. The planned outage reserve margin the CAISO has proposed for Phase 2 of this initiative is similar to Vistra's suggestion. However, that proposal is not before the Commission at this time. The CAISO explained in the March 29 filing why it cannot pursue Vistra's suggestion to allow RA maintenance outages without substitution in off-peak months.<sup>64</sup> RA requirements are set for each month based on forecasted load for that month. Under this monthly construct, treating off-peak months differently from peak months for outage purposes is not warranted because the RA capacity shown in an off-peak month is needed just as much to meet that month's RA needs as when shown in a peak month. This is why Vistra's suggestion to follow PJM's lead and permit maintenance outages without substitution in off-peak months is not reasonable to pursue at this time. Unlike the CAISO, PJM does not administer a monthly capacity process.

Six Cities highlights two alternatives it proposed in the stakeholder process that it does not believe the CAISO considered adequately. The first is to permit resources to list themselves as RA on a daily, rather than monthly, basis to avoid needing substitute capacity on days the resource knows that it will be on outage.<sup>65</sup> The second is to allow imports to provide substitute capacity if there is available import allocation.<sup>66</sup> Six Cities requests that the CAISO either adopt these alternatives "or be directed to adopt" them.<sup>67</sup> The CAISO considered Six Cities's suggestion to permit daily RA options in its Third

---

<sup>64</sup> March 29 filing, at 31.

<sup>65</sup> Six Cities protest, at 6.

<sup>66</sup> *Id.*, at 6-7.

<sup>67</sup> *Id.*, at 8.

Revised Straw Proposal. The CAISO received stakeholder feedback that daily options would add significant complexity to the RA contracting process. Based on this feedback, the CAISO did not pursue the option. Six Cities's other suggestion to allow imports to provide substitute capacity is already partially permitted under existing rules. CAISO tariff section 40.9.3.6.4 permits imports to provide substitute capacity for *forced* outages. Phase 2 of the RA Enhancements initiative will consider RA import issues and through that process the CAISO can revisit if imports also should be allowed to provide substitute capacity for *planned* outages.

MRP states that the Commission should only approve the CAISO proposal if it also directs "the CAISO to provide the ability for suppliers to convert planned outages to forced outages if the outage is required and substitute capacity cannot be procured."<sup>68</sup> MRP's suggestion would undermine the CAISO's whole proposal and would be infeasible to administer. The CAISO would have no way to judge how hard a supplier tried to secure substitute capacity or how to validate that no substitute capacity actually exists.

#### 6. CAISO Response to Limited Requests for Clarification

PG&E generally supports the CAISO filing but expresses concern that the CAISO has proposed overlapping tariff amendments between this docket and the CAISO's proposed tariff amendments in its summer readiness initiative.<sup>69</sup> PG&E is concerned

---

<sup>68</sup> MRP protest, at 16.

<sup>69</sup> Information on this stakeholder initiative is available at: <https://stakeholdercenter.caiso.com/StakeholderInitiatives/Market-enhancements-for-summer-2021-readiness>.

these overlaps may create implementation challenges.<sup>70</sup> To address these concerns, PG&E states “the Commission should require the CAISO to reconcile tariff revision inconsistencies between this filing and the ones to come as part of the summer 2021 readiness initiative . . . .”<sup>71</sup> The CAISO does not believe there is substantive overlap between the amendments proposed in this docket and the other initiative PG&E mentions. But the CAISO would not object, if so ordered, to make a compliance filing that reconciles the amendments proposed in the two dockets.

In its comments, SDG&E states “it is unclear whether the outage itself should be submitted immediately, or if the SC should wait to submit the planned outage if it does not yet have, or may be unable to obtain, the substitute capacity within the replacement window.”<sup>72</sup> SDG&E is concerned if the CAISO means to require a supplier to submit a request for a maintenance outage immediately and then try to find substitute capacity. SDG&E also requests clarification about “how to handle a situation in which an outage that may have been known prior to the forced outage window, but because no RA replacement was available, the outage was not submitted until after the forced outage timeframe.”<sup>73</sup> In response to SDG&E, generators may wait to submit a request for a maintenance outage until they have secured substitute capacity. The CAISO always prefers to have the outage requests submitted as soon as possible but that is not a requirement. On the second issue, consistent with what was stated above, submission of a forced outage the need for which was identified before the forced outage timeframe

---

<sup>70</sup> PG&E comments, at 2.

<sup>71</sup> *Id.*, at 3.

<sup>72</sup> *Id.*

<sup>73</sup> SDG&E comments, at 3.

is permissible if at the time it is submitted as a forced outage, the work cannot wait. Upon request, the scheduling coordinator needs to be ready to justify why the work could not wait until the planned outage timeframe.

### **III. Conclusion**

For the foregoing reasons, the Commission should accept the tariff revisions contained in the March 29 filing without condition or modification.

Respectfully submitted,

/s/ David S. Zlotlow

Roger E. Collanton  
General Counsel  
Anthony Ivancovich  
Deputy General Counsel  
David S. Zlotlow  
Senior Counsel  
California Independent System  
Operator Corporation  
250 Outcropping Way  
Folsom, CA 95630

Sean A. Atkins  
Michael Kunselman  
Bradley R. Miliauskas  
Davis Wright Tremaine LLP  
1301 K Street, NW  
Suite 500 East  
Washington, DC 20005

Counsel for the California Independent System Operator Corporation

Dated: April 28, 2021

## CERTIFICATE OF SERVICE

I certify that I have served the foregoing document upon the parties listed on the official service list in the captioned proceedings, in accordance with the requirements of Rule 2010 of the Commission's Rules of Practice and Procedure (18 C.F.R. § 385.2010).

Dated at Folsom, California this 28th day of April, 2021.

*Anna Pascuzzo*  
Anna Pascuzzo