

CALIFORNIA ISO STATEMENT ON WITHDRAWING PRR 1656, PRR 1658, and PRR 1659

I. INTRODUCTION

The CAISO introduced three PRRs relating to how storage resources participate in the market, particularly when providing flexible RA capacity. The PRRs were subject of significant stakeholder feedback, with some parties opposing them. The CAISO placed all three PRRs on hold to further consider stakeholder feedback. Based on that further consideration, the CAISO is withdrawing PRR nos. 1656, 1658, and 1659. The CAISO has concluded they are unnecessary and the goals of the PRRs can be met through other means. In withdrawing the PRRs, the CAISO stands by the principles motivating the PRRs.

- Outages on RA resources that must be taken because of choices the resource made when interconnecting should not be exempt from RAAIM. (PRR 1656).
- The off grid charge indicator bid parameter should not be paired with infeasible charging bids to avoid RAAIM non-availability charges. (PRR 1658).
- Absent an exception in the CAISO tariff, a scheduling coordinator should not show capacity on an RA supply plan if the scheduling coordinator can reasonably foresee the resource could not meet the RA must-offer obligation with feasible bids. (PRR 1659).

II. PRR 1656 – TIGO vs. Ambient Due to Fuel Insufficiency

A. Purpose of the PRR

Among other issues, the ongoing Storage Design and Modeling (SDM) stakeholder initiative has included consideration of various topics relating to distribution-connected storage units. Once the stakeholder initiative began, the CAISO and the Department of Market Monitoring (DMM) identified instances in which distribution-level market-participating resources inappropriately reflected routine distribution-level charging limitations through the transmission induced generator outage (TIGO) nature of work, rather than using a more appropriate nature of work.

The Outage Management BPM defines the TIGO nature of work as covering cases where a “Transmission equipment outage curtails a generator output, or distribution equipment outage in the case of distribution-connected generator.” A TIGO only applies where transmission or distribution equipment outages have materialized

and curtailed generator output. Without a transmission or distribution outage, a generator cannot permissibly report an outage under the TIGO nature of work. Routine charging limitations faced by distribution-interconnected storage assets are not related to outages of transmission or distribution equipment. These limitations are based on customer elections to site in particular locations and forgo network upgrade costs for economic reasons. They do not relate to the transmission or distribution outages that permit a TIGO.

This outage reporting is also problematic because it contradicts the policies and tariff underlying RA and RAAIM. Section 40.9.3.4(d) exempts from RAAIM “an Outage in a nature of work category specified in the Business Practice Manual that relates to . . . a cause outside of the control of the resource owner.” TIGO is one such outage defined as exempt. By inappropriately reporting the outage under TIGO, the resource can claim an exemption from RAAIM that is not supported by the tariff. The policy behind the exemption is that RAAIM should not consider outages that the CAISO is confident are outside the generator’s control. Outages on distribution-connected storage resources due to charging limitations are driven by the generator’s choices.

The CAISO used a stakeholder meeting on September 29, 2025 that was part of the Storage Design and Modeling initiative as a convenient venue to remind market participants of existing tariff and policy by clearly stating the use of TIGO was inappropriate under the circumstances described above. Following that meeting, some market participants asked for guidance on what nature of work would be appropriate. The CAISO offered that the ambient due to fuel insufficiency nature of work seemed appropriate. The reasoning was that the “Ambient due to Fuel insufficiency” nature of work covers generator outages caused by fuel unavailability.¹ A battery storage resource’s fuel is the electricity it draws from the transmission or distribution system to charge its batteries. Any outage related to its inability to charge reasonably relates to fuel unavailability.

B. The PRR Process

To ensure the message from the stakeholder initiative was memorialized beyond the stakeholder materials, the CAISO submitted PRR 1656 on November 11, 2025. PRR 1656 proposed to add the following sentence to the definition of the “Ambient due to Fuel insufficiency” outage nature of work in the Outage Management BPM: “This nature of work includes cases where storage resources and hybrid resources with a

¹ The exception are outages related to gas limitations related to a specific CAISO operating procedure and outages related to water management issues for certain hydroelectric units. These are reported under the “Ambient Not Due to Temp” nature of work.

storage component are on outage due to charging limitations that are unrelated to transmission or distribution equipment outages.” Multiple parties opposed the PRR. Those parties offered three main areas of argument against PRR 1656.

1. These outages fit within the existing framework for RAIM-exempt outages.
2. PRR 1656 reflects undue discrimination against distribution-connected storage resources
3. The CAISO used a flawed process to develop PRR 1656.

The CAISO carefully considered these perspectives and appreciates the detailed feedback provided. While this input did not ultimately alter the CAISO’s view regarding the appropriate use of TIGO or the RAIM exempt status of outages needed to reflect charging limitations on distribution-connected resources, the stakeholder comments were valuable in informing the CAISO’s broader evaluation of the issue.

1. *The Outages Do Not Fit in Existing RAIM-Exempt Outage Categories or Existing RA Policies*

Some parties claimed generation outages caused by distribution-level charging constraints correctly could be reported under either TIGO or the “Technical Limitations not in Market Model” nature of work, both of which are RAIM-exempt. Stakeholders argue that because TIGO is intended for circumstances where transmission or distribution outages curtail output, distribution-connected storage resources with output curtailed to avoid such outages should also fall under TIGO. Similarly, they contend that limits arising from sub-transmission loading reflect “technical limitations not modeled” in CAISO systems and should be exempt under existing BPM provisions. Beyond the specific natures of work, parties argued more generally that the charging limitations are beyond the generator’s control. They argue that resources at the sub transmission level cannot control the actions of distribution utilities and may be forced into outage during high load seasons without a congestion management solution. They claim that until the distribution utilities implement a congestion management system, the storage outages should be exempt because they arise from circumstances beyond the generator’s control.

The CAISO carefully considered these claims and the perspectives raised through stakeholder comments. Throughout the development of PRR 1656, the CAISO sought to be transparent in explaining that TIGO requires a generation or distribution outage. While the stakeholder comments did not lead the CAISO to identify errors in its underlying reasoning or alter its interpretation of TIGO applicability, the feedback was helpful in clarifying stakeholder concerns and guided the CAISO’s broader evaluation.

The “Technical Limitations not in Market Model” nature of work generator outage is to “provide notification that resource is unavailable due to technical limitations not captured in the CAISO market model and that result in infeasible dispatches because they are inconsistent with the resource’s design capabilities.” Resources agreed to interconnect with a level of service where the distribution utility can issue charging constraints as needed to ensure delivery of load. These limitations follow the “resource’s design capabilities,” and the “technical limitations not in Market Model” nature of work does not apply. That a contingency management system being put in place by the distribution utility may reduce the need to reflect unavailability via outage cards is not relevant. The generators interconnected knowing (or having the ability to know) a contingency management system was not yet in place. If those enhancements are pursued by the distribution utility, then assets facing those limitations may no longer need to use outage cards. PRR 1656 merely tries to clarify which nature of work should be used when an outage is necessary.

2. Holding Distribution-Connected Resources Accountable for Meeting their RA Obligations is not Discrimination

Some parties argued PRR 1656 represents undue discrimination against distribution-connected storage resources. They argued that distribution-connected resources are similarly situated to transmission level resources subject to modeled N-1 limits, yet only distribution-connected assets would face non-availability charges when the resource is curtailed because of those modeled limits. They contend that PRR 1656 implicitly requires distribution resources to demonstrate charging deliverability even though transmission connected assets are not studied for such deliverability. They also claim fully charged distribution-level storage with charging constraints would be treated differently from fully charged transmission level storage when assessing Resource Adequacy obligations.

Based on its review, the CAISO does not view PRR 1656 as resulting in undue discrimination under the Federal Power Act. It well may be that distribution-connected storage resources face greater exposure to RAAIM than transmission-connected storage resources. That difference occurs because transmission-level resources are not similarly situated relative to distribution-level market-participating resources. Transmission-level resources have interconnected in a way that ensures delivery to the CAISO-controlled grid, but distribution-level market-participating resources have interconnected through a third party, the distribution utility. The latter resources have different obligations (such as complying with both the CAISO tariff and the relevant interconnection tariff of the applicable distribution utility) and constraints. In so far as

those differences affect availability, the present PRR clarifies which nature of work to use in a specific scenario to enforce existing resource adequacy policy since, for resources shown for Flexible resource adequacy, the charging constraints routinely faced by some distribution-interconnected market-participating resources may affect the fulfillment of their resource adequacy obligations.

Some parties also pointed to the off grid charge indicator bid parameter as a way that transmission-connected storage resources can manage charging limitations without RAIM exposure but distribution-connected resources cannot. By not allowing the distribution resources access to a RAIM-exempt way of managing charging, the parties argued the CAISO is also discriminating in favor of transmission-connected resources. This argument is based on a misunderstanding about the acceptable use of the off grid charge indicator, which is the subject of PRR 1658. When the off grid charge indicator is used appropriately, it does not grant a RAIM exemption.

3. *PRR 1656 Represents a Valid Exercise of the BPM Change Management Process*

Some stakeholders argued that the PRR is a change in policy and that CAISO has not met the procedural requirements of the BPM change management process. They claim that removing access to a RAIM-exempt outage for distribution-connected storage resources is a new policy that should be considered in the current RA policy stakeholder initiative, with a FERC tariff filing to follow. They also assert that the PRR process was flawed because it did not include a full impacts and benefits analysis, which they argue is required of PRRs.

The CAISO carefully considered these concerns. From the CAISO's perspective, PRR 1656 was intended to reinforce and clarify existing policy rather than establish new policy. Specifically, the policy that all outages during an availability assessment hour count against a RA resource's availability under RAIM unless there is a specific exemption. By ensuring the RAIM exemption in tariff section 40.9.3.4(d) is applied correctly, the CAISO is applying its filed rate.

The CAISO also recognizes stakeholder questions regarding process and appreciates the opportunity to clarify its approach. The CAISO does not view PRR 1656 as changing market structure, operations, or participant obligations. Nevertheless, the CAISO provided a formal impact analysis form supporting the recommendation to approve the PRR and believes the PRR was developed in alignment with the BPM change management process.

C. Reason for Withdrawal and Next Steps

PRR 1656 was developed with two primary objectives. First, PRR 1656 sought to provide clarification that TIGO is not intended to apply to generation outages resulting from charging limitations that are unrelated to a materialized transmission or distribution outage. Second, PRR 1656 responded to stakeholder requests for more guidance on the proper nature of work to use for reporting generation outages caused by charging limitations imposed by the distribution utility.

After further consideration, the CAISO has concluded the first objective no longer warrants a PRR. Through the stakeholder discussions and comments received during the PRR process, the CAISO gained additional confidence that the existing BPM already provides sufficient clarity regarding the circumstances under which TIGO applies. In the CAISO's assessment, the existing definition does not reasonably support the use of TIGO for generation outages caused by charging limitations absent a corresponding transmission or distribution outage. Given this understanding, the CAISO does not believe that additional BPM or tariff changes are necessary to address this issue, and accordingly has determined that PRR 1656 is no longer needed.

The CAISO also has reconsidered how well the PRR meets the second purpose and whether it is necessary. Upon review, the CAISO has concerns the proposed edits to the definition of ambient due to fuel insufficiency nature of work were too broad. The PRR said the ambient due to fuel insufficiency nature of work would cover outages "due to charging limitations that are unrelated to transmission or distribution equipment outages." However, that statement does not speak to why the specific charging limitations exist. For example, if the charging limitations are based on some environmental limits, then "Environmental Restrictions" could also be a proper nature of work. Or if the charging restrictions are related to weather, then "Ambient Due to Temp" might also be appropriate. These factors are a reminder that the nature of work definitions cannot be crafted to address all conceivable scenarios explicitly. The CAISO has determined it is preferable to maintain the current nature of work definitions as they are. The CAISO instead will leave it to scheduling coordinators to report outages based on those definitions in good faith based on the actual facts as they arise, with the understanding it is never permissible to report an outage under a nature of work where the factual circumstances do not align with the BPM definition of that nature of work. The CAISO will continue to track closely the use of RAAIM-exempt outage types, such as TIGO and "Technical Limitations not in Market Model, to ensure RAAIM exemptions are applied appropriately and within the boundaries defined in the CAISO tariff.

III. PRR1658 – OGCI

A. Purpose of the PRR

The off grid charge indicator (OGCI) bid parameter allows a co-located storage resource to indicate in its bid that the storage resource is unwilling to charge or incapable of charging from the grid in an interval. The CAISO market optimization respects this part of the bid. The OGCI allows the storage unit to ensure it will only charge from the resource with which it is co-located. When the CAISO implemented the OGCI it amended the Market Operations BPM to state the OGCI biddable parameter “does not impact existing policy or requirements on the feasibility of bids or must-offer obligations for RA capacity.”

The CAISO recently identified instances where storage resources co-located with a solar resource submitted charging bids to meet flexible RA must-offer obligations in non-solar hours but also used the OGCI. By submitting the bids to charge, the storage resource was seen as meeting its must-offer obligation for RAAIM purposes. But by also using the OGCI, the resource was indicating it only could charge from its co-located resource. Because the bid covered a non-solar hour (*i.e.*, it was dark outside), there was no way the storage resource ever could have expected to charge during that hour. The resource has not provided part of the flexible RA capacity it indicated it could provide in its supply plan. By making that range unavailable without having to submit an outage, the resource also avoids RAAIM impacts. It can avoid RAAIM by submitting a charging bid that could never be met which could violate the tariff rule against submitting infeasible bids. This is precisely the scenario the CAISO had in mind when adding the above admonition to the Market Operations BPM.

B. The PRR Process

In reviewing these cases, the CAISO considered the possibility some market participants did not understand the intent of the statement in the Market Operations BPM. To avoid any future confusion, the CAISO submitted PRR 1658 on March 2, 2026. PRR 1658 added the following material to expand on the existing statement in the Market Operations BPM:

In particular, a co-located storage resource using the Off Grid Charging Indicator should be mindful of the obligation under tariff section 37.3.1 for resources to submit feasible bids. Use of the OGCI parameter does not supplant this general obligation. As an example, consider a co-located storage and solar resource. It would raise serious compliance questions if the co-located storage resource submitted charging bids with

the parameter selected for hours after sunset. This is particularly so where the co-located storage resource is a Resource Adequacy Resource and may have submitted infeasible bids to meet the Resource Adequacy must-offer obligation.

Some stakeholders raised concerns regarding PRR 1658, asserting that it creates new policy, contradicts the tariff filing that created the OGCI, and is not supported by existing tariff provisions. The CAISO carefully considered these perspectives but respectfully disagrees because PRR 1658 elaborates on what a particular statement in the BPM was always intended to mean. Nor does the CAISO believe the PRR creates new policy or is contradicted by the tariff or other existing documentation. Further, the CAISO does not believe the PRR changed the policy framework in the Energy Storage Enhancements, Phase 2 initiative. The CAISO never suggested in that process that creation of this biddable parameter would supersede generally applicable market rules. Also, the statements added by PRR 1658 do not create a new rate, term, or condition of service. Rather, those statements are provided as a courtesy to market participants to more fully communicate the CAISO's existing view on what conduct may justify further attention from FERC.

C. Reason for Withdrawal and Next Steps

Knowledge articles are intended to provide practical, implementation-focused guidance that may go beyond the level of operational detail typically included in Business Practice Manuals (BPMs), while remaining consistent with the tariff and BPM-defined business practices. After further consideration, the CAISO has concluded that the clarifying language proposed in PRR 1658 can be more appropriately incorporated into the relevant knowledge article – [“Off Grid Charge Indicator.”](#)

This approach reflects the CAISO's view that the language at issue does not establish a new CAISO business practice, but rather offers guidance on appropriate uses of the off-grid charge indicator (OGCI) tool, which is defined in existing documentation. Incorporating this guidance into a knowledge article allows the CAISO to communicate expectations more effectively to market participants in a practical context. Placing these clarifications in a knowledge article also provides additional flexibility, enabling the CAISO to update or expand examples as needed based on experience or emerging questions about OGCI usage, while continuing to engage with stakeholders as those issues arise.

IV. PRR1659 – RA should be able to meet MOO

A. Purpose of the PRR

Over time, the CAISO has become increasingly concerned that some scheduling coordinators mistakenly view RAIM as the key part of the RA program, rather than the RA must-offer obligation. The purpose of the RA program is for resources to submit feasible bids that reflect energy that will be delivered if called upon so the CAISO can operationalize the capacity to meet reliability needs. That is the main purpose of the RA program and reflects the obligation resources take on when they provide RA capacity. RAIM is an additional program to incentivize resources to fulfill their pre-existing obligations.

As reflected with PRR 1656 and PRR 1658, many issues with RA become a discussion about how RAIM applies to a specific scenario without first considering if the resource could ever meet its full must-offer obligation. For example, PRR 1656 deals with a situation where a storage resource cannot submit charging bids in compliance with its flexible RA obligation for significant blocks of time known in advance. Similarly, the fact pattern that motivated PRR 1658 involves cases where a resource submits charging bids to meet its flexible RA obligation even though the market can never operationalize the charging range. It is important to ensure RAIM is applied appropriately in these scenarios. But only discussing RAIM avoids the main question of whether the resources should have been shown as flexible RA capacity in a flexible RA category that holds a must-offer obligation for hours where the resource cannot routinely meet its must-offer obligations with feasible bids the market can operationalize.

The recurrence of scenarios such as those that prompted PRR 1656 and PRR 1658 highlighted for the CAISO the possibility that some scheduling coordinators are showing resources on RA supply plans when the scheduling coordinator has no reasonable expectation of meeting its RA must-offer obligation in all hours with feasible bids. This is contrary to the intent of the RA program because RA requirements are being met with resources that are known ahead of time to be incapable of fulfilling the RA needs. It is all the more troubling where, as in the cases of PRR 1656 and PRR 1658, such resources also may avoid RAIM for their unavailability.

B. The PRR Process

The CAISO submitted PRR 1659 on March 2, 2026. The PRR added the following statement to section 7.3.4 of the Reliability Requirements BPM:

It is possible a resource's scheduling coordinator reasonably could foresee at the time of flexible RA supply plan submission that operating limitations would prevent the resource from meeting with feasible bids the must-offer obligation for the resource's full EFC value in the minimum qualified category established on the final EFC list. In such instances, the resource should be shown in the RA process for the MWs of flexible capacity in the category whose must-offer obligation the scheduling coordinator reasonably expects can be met with feasible bids.

Stakeholders raised concerns regarding PRR 1659 that were similar to those expressed for PRR 1658 including assertions that the PRR would establish new policy, lacks support in the tariff, and is not appropriate to include in a BPM.

As with PRR 1658, the CAISO does not view PRR 1659 as introducing new obligations or policy. Rather, the proposed language was intended to provide additional clarification of existing expectations—consistent with the CAISO tariff and FERC market conduct standards—that Scheduling Coordinators should not include capacity on a Resource Adequacy supply plan when there is no reasonable basis to expect that the resource can meet its applicable must-offer obligation. PRR1659 does not create a new rate, term, or condition of service. It is provided as a courtesy to market participants to more fully communicate the CAISO's existing view on what conduct may justify further attention from FERC.

C. Reason for Withdrawal and Next Steps

Similar to PRR 1658, the CAISO is also withdrawing PRR 1659. Whether or not the conduct violates the tariff or FERC behavioral rules is ultimately not a question for the CAISO to determine. Discussing what conduct may lead to further attention from FERC is not a business practice of the sort that needs to be in a BPM. Instead the CAISO will update the existing knowledge article "[RAAIM and MOO hours.](#)" PRR 1658 focused on flexible RA capacity but the connection between the must-offer obligation and RAAIM is a fundamental issue that also applies to generic RA as well. Providing the guidance in this more general knowledge article will also make the broad applicability of these concerns more apparent.