California Independent System Operator Corporation

November 18, 2026

The Honorable Debbie-Anne A. Reese
Secretary
Federal Energy Regulatory Commission
888 First Street, NE
Washington, DC 20426

Re: California Independent System Operator Corporation
Docket No. ER27-____-000

Tariff Amendment - Variable Operations and Maintenance Adders, Variable Operating Cost for Storage Resources, and After the Fact Cost Recovery for Natural Gas Resources

Dear Secretary Reese:

The California Independent System Operator Corporation (CAISO) submits this tariff amendment to implement tariff revisions arising from its triennial review of variable operations and maintenance bid adders as well as an element of its gas resource management initiative.[1] These tariff revisions include:

- Establishing a process to update default variable operations and maintenance adders for different fuel types and resource technologies based on several factors, including inflation.
- Establishing a new default variable operations cost for storage resources and a process to update the default value based on several factors, including inflation.
- Creating a limited exception for scheduling coordinators to request recovery of an uplift cost when a physical disruption on a natural gas pipeline or fuel region occurs after market close thereby preventing scheduling coordinators from reflecting actual fuel costs in a reference level change request.

[1] The CAISO submits this filing pursuant to section 205 of the Federal Power Act, 16 U.S.C. § 824d, and Part 35 of the Commission's Regulations, 18 C.F.R. Part 35. Capitalized terms not otherwise defined herein have the meanings set forth in Appendix A to the CAISO tariff.

These tariff changes support how the markets administered by the CAISO reflect the costs of participating resources and provide for recovery of such costs. Each set of tariff revisions is separate and not dependent on the other, from both a substantive and an implementation perspective. The CAISO has filed them together because they represent enhancements to how the market reflects and resources can recover operational costs. Combining them in a single filing promotes administrative efficiency. The CAISO respectfully requests the Commission issue an order by February 1, 2027 accepting these tariff revisions. The CAISO intends to implement them thereafter in the first quarter of 2027, and requests authorization to notify the Commission of the effective date of the tariff revisions seven days in advance of implementation.[2]

I. Variable and Operations Maintenance Adders

A. Background

The CAISO markets optimize economic commitment and dispatch of supply and demand resources based on submitted bids, including self-schedules, and other applicable bidding rules. The CAISO also uses cost-based generated bids in its market power mitigation process. Variable operations and maintenance adders are a component of cost-based generated bids, and they reflect the operations and maintenance costs that change with the resource's output, run hours, and number of starts.

i. Commitment Costs

In the day-ahead market, (*i.e.*, the integrated forward market (IFM) and the residual unit commitment (RUC) process), the CAISO publishes financially binding day-ahead schedules along with ancillary services and RUC awards.[3] The real-time market commits resources in the real-time unit commitment and short-term unit commitment processes every 15 minutes.[4] In making commitment decisions, the market separately considers the costs of starting resources (start-up costs), the costs of running resources at their minimum operating levels (minimum load costs),[5] transition costs for resources that can

[2] The CAISO has included an effective date of 12/31/9998 as part of the tariff records submitted in this filing. The CAISO will notify the Commission of the actual effective date of these tariff records seven days in advance of implementation in an eTariff submittal using Type of Filing code 150 – Report. *See Cal. Indep. Sys. Operator Corp.*, 172 FERC ¶ 61,263 (2020).

[3] Existing tariff section 31, *et seq.*

[4] Existing tariff section 34, *et seq.*

[5] *See* existing tariff section 31.3; tariff appendix A, definitions of "Start-Up Cost" and "Minimum Load Costs."

operate in different configurations,[6] and the costs for producing energy above minimum load. The CAISO uses default commitment costs as the cap on the start-up cost, minimum load costs, and transition cost bids submitted by scheduling coordinators for these values. These default commitment cost values also include variable operations and maintenance adders.

ii. Default Energy Bids

The CAISO uses default energy bids, which can include variable operations and maintenance adders, to mitigate bids of resources subject to market power mitigation procedures.[7] If a market bid is subject to mitigation, the CAISO systems can substitute the default energy bid for the resource's bid in the market clearing process and use either the higher of the default energy bid or the competitive locational marginal price to determine the resource's bid cost recovery compensation.[8] Default commitment costs always serve as the cap of the values that scheduling coordinators may submit for minimum load cost bids, start-up cost bids, and transition cost bids. Default energy bids, however, apply only when the potential for the exercise of market power exists. For each resource, a scheduling coordinator can choose any of several options as its preferred option for calculating default energy bids, including the variable cost option.[9]

iii. Variable Operations and Maintenance Adder Framework

The CAISO tariff provides a framework for cost recovery based on variable operations and maintenance adders for start-up, minimum load,

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6 The tariff refers to these resources as multi-stage generating (MSG) resources. *See* tariff appendix A, definition of "Multi-Stage Generating Resources." For an MSG resource, transition cost is the dollar cost per feasible transition from a given MSG configuration to a higher MSG configuration when the resource is already on. Tariff appendix A, definition of "Transition Cost."

7 Existing tariff section 39.7.1, *et seq.*

8 Existing tariff section 11.8, *et seq.*

9 Other default energy bid options are the negotiated rate option and the locational marginal price option. Existing tariff sections 39.7.1 – 39.7.1.3. Further, a scheduling coordinator for a frequently mitigated unit has a fourth option for calculating default energy bids, the frequently mitigated unit option. Existing tariff section 39.7.1.4. In addition, a scheduling coordinator for a hydroelectric resource with storage capability has a fifth option for calculating default energy bids, the hydro default energy bid option. Existing tariff section 39.7.1.7. And finally, there is a storage DEB available for battery resources. Existing tariff section 39.7.1.8. The CAISO may also establish temporary default energy bids. Existing tariff section 39.7.1.5.

transition,[10] and energy costs.[11] Under this framework, resources may rely on default variable operations and maintenance adders. Scheduling coordinators may still negotiate new variable operational and maintenance adders on a resource-specific basis. In 2023, the Commission accepted the CAISO's tariff amendment to adjust variable operations and maintenance adders based on inflation data from the US Bureau of Labor Statistics.[12]

B. Proposed Tariff Revisions

As part of a regular review of the default values for variable operations and maintenance adders for different resource technologies set forth in its tariff,[13] the CAISO proposes to update these values based on inflation data from the US Bureau of Labor Statistics. The CAISO also proposes replacing the values in its tariff with a process to undertake a review of these values at least every three years based on various factors, including inflation, and publish updated default values for variable operations and maintenance adders in its business practice manuals.[14] The CAISO intends to publish these adjusted variable operations and maintenance adders for different resource technologies effective on the date these tariff revisions take effect.

Since its last review of variable operations and maintenance adders in 2023, several indicators reflect the need to adjust these default values. Most notably, the U.S. Bureau of Labor Statistics (BLS) Consumer Price Index for All Urban Consumers from June 2023 through May 2026 reflects increased inflation.[15] Based on this index, the CAISO is proposing a 9.84 percent inflation adjustment to the default variable operations and maintenance cost adders. Table 1 reflects a comparison of the current and proposed variable operations and maintenance cost adder values. The BLS Consumer Price Index is a federal government report that is publicly available and has served to support prior reviews accepted by the Commission.[16]

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[10] Transition costs are related to multi-staged generators and reflect the difference between start-up costs for each stage. These costs utilize the start-up operations and maintenance adder values.

[11] *Cal. Indep. Sys. Operator Corp.*, Commission Letter Order, Docket No. ER21-1266 (May 12, 2021).

[12] *Cal. Indep. Sys. Operator Corp.*, Commission Letter Order, Docket No. ER23-2956 (November 21, 2023).

[13] Existing tariff section 30.4.5.4.1.

[14] Proposed changes to tariff section 30.4.5.4.1.

[15] BLS Consumer Price Index for All Urban Consumers (CPI-U): All items in U.S. city average, all urban consumers, not seasonally adjusted, https://www.bls.gov/cpi/data.htm.

[16] *Id.; see also Cal. Indep. Sys. Operator Corp.*, Commission Letter Order, Docket No. ER21-1266 (May 12, 2021).

Table 1: Comparison of Current and Updated Variable Operations and Maintenance Adders[17]

Technology Type	Default Variable Energy O&M Adder *($/MWh)*		Default Variable Minimum Load O&M Adder *($/run-hour/MW)*		Default Variable Start-up O&M Adder *($/start/MW)*	
	Current	**Updated**	**Current**	**Updated**	**Current**	**Updated**
Coal	3.19	3.50	-	-	-	-
Steam turbines	0.39	0.43	-	-	-	-
Natural gas-fired combined-cycle	0.70	0.77	2.07	2.27	-	-
Frame combustion turbines	1.15	1.26	-	-	61.89	67.98
Aeroderivative combustion turbines	2.55	2.80	5.20	5.71	-	-
Reciprocating internal combustion engines	1.31	1.44	-	-	-	-
Nuclear	1.28	1.41	-	-	-	-
Biomass	1.96	2.15	-	-	-	-
Geothermal	1.38	1.52	-	-	-	-
Landfill gas	1.44	1.58	-	-	-	-
Hydroelectric	-	-	0.77	0.85	-	-
Solar	-	-	-	-	-	-
Wind	0.33	0.36	-	-	-	-
Other (*e.g.*, storage, demand response)	-	-	-	-	-	-

Apart from relying on the BLS Consumer Price Index, the CAISO assessed the frequency of negotiations for updated variable operations and maintenance adders. The CAISO continues to conduct negotiations for variable operations and maintenance adders. Based on prior experience, the frequency and volume of these negotiations is not abnormally high or abnormally low. If the default adders were too high, negotiating values would not be necessary for many resources, and the CAISO would observe infrequent negotiations. Conversely, if the values were too low, the CAISO would be negotiating variable operations and maintenance adders more frequently. Given that the frequency and volume of these negotiations fall between these two extremes, an adjustment based solely on inflation strikes a reasonable balance. For

[17] Blank cells do not necessarily reflect a missing cost. The variable operational maintenance cost framework differs by technology. Certain technologies may not incur a particular type of variable operations and maintenance cost, while for others the relevant costs are reflected in one variable operations and maintenance category, such as Energy, Minimum Load, or Start-Up, rather than establishing a separate default value in all three categories.

scheduling coordinators that find the default values do not reflect a resource's actual costs, the negotiated variable operations and maintenance adder remains an option.[18]

The CAISO proposes to publish the updated default variable operations and maintenance cost adders in its business practice manual.[19] The CAISO also proposes revising the relevant tariff section relating to default variable operations and maintenance adders to state the CAISO will assess the default variable operations and maintenance adders set forth in its business practice manual at least every three years through a stakeholder process.[20] The CAISO currently describes this process in its business practice manual but proposes to establish this practice as part of its transmission tariff. The revisions also specify the assessment will reflect relevant factors that may include the amount of time elapsed since the CAISO last assessed default values, changes in technologies or cost profiles of resources, and applicable inflation rates. The revisions further permit the CAISO to undertake or rely on additional studies reflecting variable operations and maintenance costs to inform these updates or propose new default variable operations and maintenance adders. Finally, the tariff revisions provide the CAISO will share its assessment in the stakeholder process and allow stakeholders the opportunity to comment on the assessment.

Together, these factors and process requirements will guide future updates to default variable operations and maintenance adders. The CAISO's tariff revisions will ensure that the CAISO updates variable operations and maintenance adders on a timely basis based on relevant cost factors. The process to make these updates will be transparent and allow for stakeholder feedback on any proposals. The Commission should accept these changes because they provide an adequate description of how the CAISO will undertake a process to adjust default values in the future and enhance the efficiency for the CAISO and market participants to make such adjustments because they can occur without a tariff filing.

Default variable operations and maintenance adders are an input into the how the market assesses resource commitment decisions and calculates default energy bids used in market power mitigation procedures. Stating these default values for different fuel and technology types in the CAISO's business practice manuals is permissible. The Commission has broad discretion to determine the

[18] Existing tariff section 30.4.5.4.3

[19] Proposed changes to tariff sections 30.4.5.4.1 and 30.4.5.4.2.

[20] Proposed changes to tariff sections 30.4.5.4.2. the CAISO also prospers a clarifying edit to the first sentence of this section delete a reference to "start-up" because variable operations and maintenance cost adders encompass more than only start-up costs.

CAISO's proposed process for identifying these values is sufficient.[21] Moreover, tariffs need not include every practice significantly affecting rates if the tariff clearly implies the practice.[22] The CAISO's proposed tariff changes specify the CAISO will set default variable and operators maintenance adders for different fuel types and resource technologies and states where the CAISO will publish these default values. The proposed tariff explains the CAISO will hold a stakeholder process for revising default values or establishing new default values and identifies the factors the CAISO will consider in doing so. These factors include the amount of time elapsed since the CAISO assessed the default values, changes in technologies or cost profiles of resources, applicable inflation rates, and additional studies reflecting variable operations and maintenance costs of existing or new resource technologies. Moreover, the tariff explains how the CAISO will use these values in market clearing as well as market power mitigation.[23] For these reasons, the Commission should accept the CAISO's proposal to publish the default values in the CAISO's business practice manual. When published on the effective date of these tariff revisions, these variable operations and maintenance adders will reflect the BLS Consumer Price Index adjustment of 9.84% when compared to the current default values.

C. Stakeholder Process

The CAISO convened a stakeholder process earlier this year to undertake a triennial review of default variable operations and maintenance cost adders. The CAISO published an issue paper, a straw proposal, and a final proposal and held stakeholder calls associated with each. Through this process, participants submitted written comments which were addressed in the subsequent stage of the proposal. Stakeholders concurred that an upward adjustment to default variable operations and maintenance cost adders was appropriate and expressed support for the use of the BLS Consumer Price Index to inform the adjustment. The CAISO also published draft tariff language and held an associated call.

II. Variable Operations Cost for Storage Resources

A. Background

i. Battery Energy Storage and Market Power Mitigation

Energy storage resources comprise a substantial and rapidly growing portion of the CAISO's fleet. Today, installed energy storage capacity exceeds

[21] *City of Cleveland, Ohio v. FERC,* 773 F.2d 1368, 1376 (D.C. Cir. 1985); *Hecate Energy Greene Cnty.* 3 LLC v. FERC, 72 F.4th 1307, 1314 (D.C. Cir. 2023).

[22] *Hecate Energy Greene Cnty.* 3 LLC v. FERC, 72 F.4th 1307, 1314 (D.C. Cir. 2023).

[23] Existing tariff sections 30, 31. 34, and 39.

17,000 MW on the CAISO grid[24] and is also increasing as a supply resource for balancing authorities participating in day-ahead and real-time markets administered by the CAISO. As battery energy storage proliferated, the CAISO developed a default energy bid option for stand-alone battery energy storage resources.[25]

ii. Default Energy Bids for Storage Resources

To address battery energy storage resources' unique marginal energy costs, the CAISO created a storage resource default energy bid option.[26] Energy storage resources also can use another of the CAISO's existing default energy bid options if they believe those default energy bids will represent their costs better. The storage default energy bid option includes three components: (1) energy costs, (2) variable operations cost, and (3) opportunity costs. Essentially, the default energy bid reflects the maximum of (1) the sum of the expected energy cost and the variable operations cost for storage resources and (2) the storage opportunity cost.[27] The calculation also includes a ten percent (10%) adder.

iii. Variable Operations Cost for Storage Resources

In connection with a default energy bid for storage resources, the variable operations cost for storage resources represents the cost of operating a storage resource beyond its designed daily cycling range. This component accounts for the resource's cell degradation costs for cycling. Cycling refers to a storage resource charging and discharging. The depth and frequency in which a storage resource will cycle creates the greatest impact on its lifetime usability. Storage resources that cycle deeply and frequently will degrade more quickly than storage resources that avoid "full" charges and discharges and cycle less frequently. Today, the CAISO validates each variable operations cost for storage resources cost submitted by the scheduling coordinators based on manufacturer

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[24] *See,* CAISO Key Statistics for October 2026 reflecting installed battery capacity of 17,285 MW https://www.caiso.com/documents/key-statistics-oct-2026.pdf.

[25] *Cal. Indep. Sys. Operator Corp*., 177 FERC ¶ 61,051 (2021).

[26] Existing tariff section 39.7.1.8, which provides in part:

> "The expected energy cost represents the average cost to procure the amount of energy needed to charge the resource during the lowest-priced continuous block of time such that the resource can discharge completely, accounting for the resource's charging duration and round-trip efficiency, and excluding losses."
>
> "The storage opportunity cost represents the opportunity cost of being dispatched during lower-priced intervals, equal to the cost of Energy the resource could discharge during the highest-priced continuous block, accounting for the resource's discharge duration."

[27] *Id.*

warranty, available data, and supporting documentation. This process can take time and review of information and, in some cases, requires iterative discussions. If a scheduling coordinator does not submit a value or cannot justify the value, the operations cost is $0/MWh.

B. Proposed Tariff Revisions

The CAISO proposes tariff revisions related to the variable operations cost for storage resources. First, the CAISO proposes a process to establish a new default value for variable operations cost for storage resources. Like the proposed tariff revisions for default variable operations and maintenance adders, the CAISO proposes to publish this default value in its business practice manual.[28] Second, the CAISO proposes to clarify existing tariff language that describes variable operations cost for storage resources used in default energy bids for storage resources. Third, the CAISO also proposes revising the relevant tariff section relating to variable operation costs for storage resources to state the CAISO will assess this default cost at least every three years through a stakeholder process.[29] The revisions specify the assessment will reflect relevant factors that may include the amount of time elapsed since the default values were assessed, changes in technologies or cost profiles of resources, and applicable inflation rates. The revisions further permit the CAISO to undertake or rely on additional studies reflecting variable operations costs for storage resources to inform these updates or propose new default values. Finally, the tariff revisions provide the CAISO will share its assessment in the stakeholder process and allow stakeholders the opportunity to comment on the assessment. Together, these tariff revisions will ensure the CAISO updates the default value reflecting variable operations cost for storage resources on a timely basis based on relevant cost factors. The process for these updates will be transparent and allow for stakeholder feedback on any proposal. The Commission should accept the CAISO's tariff revisions because they promote efficiency, add clarity, and explain how the CAISO will update the default variable operations cost for storage resources.

Like default variable operations and maintenance adders, stating a default value for variable operations cost for storage resources in the CAISO's business

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[28] Proposed changes to tariff section 39.7.1.8.

[29] Proposed changes to tariff sections 39.7.1.8. The CAISO also proposes clarifying edits to this section to change the reference from "variable storage operation cost" to "variable operations cost for storage resources" and to modify the description of the variable operations cost for storage resources to read:

> "The storage opportunity cost represents the value of preserving energy for discharge during higher-priced intervals instead of being dispatched in lower-priced intervals. It is calculated as the value of the energy the resource could discharge during the highest-priced continuous time block, considering the resource's maximum discharge duration."

practice manuals is permissible. Again, the Commission has broad discretion to determine the CAISO's proposed process for identifying these values is sufficient.[30] Here, the proposed tariff revisions specify the CAISO will set default variable operations cost for storage resources and states where the CAISO will publish these default values. The tariff explains the CAISO will hold a stakeholder process for revising the default value and identifies the factors the CAISO will consider in doing so. Moreover, the tariff explains how the CAISO will use these values in market power mitigation.[31] For these reasons, the Commission should accept the CAISO's proposal to publish the default value in the CAISO's business practice manual based on the process steps it has proposed.

When published, the default variable operations cost for storage resources will reflect a value of $14.74/MWh. The CAISO developed this value based on existing storage default energy bids that include cost information from long-term service agreements. These agreements involve the original equipment manufacturer and reflect actual variable operations costs over a multi-year period. The default value the CAISO will publish reflects the median value of the costs identified by long-term service agreements supported by default energy bids. The CAISO considers the median a more robust measure because outlier values do not distort or skew it compared to the mean value. Consistent with its existing tariff, scheduling coordinators may still submit a value in $/MWh for a storage resource's variable operations cost and the CAISO will validate the value. To do so, the CAISO will assess whether the costs represent variable costs of operating a storage resource beyond its designed daily cycling range, manufacturer warranty, available data, and supporting documentation submitted by the scheduling coordinator.

C. Stakeholder Process

The CAISO explored the development of a default variable operations cost for storage resources as part of the stakeholder process held earlier this year involving the triennial review of default variable operations and maintenance cost adders. The CAISO published an issue paper, a straw proposal, and a final proposal and held stakeholder calls associated with each. Through this process, participants submitted written comments which were addressed in the subsequent stage of the proposal. The CAISO also published draft tariff language and held an associated call.

As part of the stakeholder process, the CAISO explored several alternatives to establish a default value for the variable operations cost for

[30] *City of Cleveland, Ohio v. FERC,* 773 F.2d 1368, 1376 (D.C. Cir. 1985); *Hecate Energy Greene Cnty.* 3 LLC v. FERC, 72 F.4th 1307, 1314 (D.C. Cir. 2023).

[31] Existing tariff section 39.

storage resources. These alternatives included (1) setting a value based on long-term service agreements, contractual arrangements between a resource owner/operator and a service provider for the maintenance and support of energy storage resources; (2) setting a value based on long-term service agreements and estimated costs under power purchase agreements scheduling coordinators have presented to the CAISO; (3) use of different default values based on the specific original equipment manufacturer; or (4) rely on the *status quo* and use a $0/MWh value unless the resource's scheduling coordinator submits a value and supporting documentation for the CAISO to validate that value.

Stakeholders expressed support for establishing a default value for the variable operations cost for storage resources based on the median value of variable cost information from long-term service agreements informing storage default energy bids. Power purchase agreements that estimate cost-based values do not provide visibility into whether they include any inappropriate costs compared to long-term service agreements. Using different default variable operations cost values based on the identity of the original equipment manufacturer would depend on the availability of sufficient sample data. The data reviewed with stakeholders created a range of values and is not yet large enough to validate appropriate default values by individual manufacturers. Finally, continuing to rely on the *status quo* would still require scheduling coordinators to continue to submit resource-specific values. This practice is administratively costly. The CAISO committed it would continue to review resource-specific values to help inform any future updates to the default value selected based on the median of long-term service agreements.

III. After-the-Fact Cost Recovery for Natural Gas Resources

A. Background

i. Three-Part Bidding and Bid Cost Recovery

Natural gas resources submit a three-part bid to the CAISO market. The first two parts are bids for start-up costs and minimum load costs. These bids reflect the costs of starting up and maintaining a resource at minimum load, respectively. The CAISO refers to these two cost categories collectively as commitment costs because these are the costs of being committed by the market. The third part of the bid is the incremental energy offer and covers the costs of providing energy above minimum load.

The CAISO's markets use all three bid components to ensure the least-cost dispatch considers the total submitted cost of a generating unit. The market clearing process uses a multi-interval optimization and inter-temporal constraints but uses only the incremental energy bid cost to set the locational marginal price for a market interval. If the resulting market clearing prices are too low to cover a

resource's commitment costs, a resource may not recover their commitment costs through market payments.

The CAISO addresses this condition by providing cost recovery based on a resource's submitted commitment cost bids through the bid cost recovery (BCR) mechanism. The BCR mechanism provides resources with uplift payments when revenues from the sale of energy and ancillary services do not cover the resource's start-up, minimum load, and energy bid costs during a trading day.[32] The CAISO recovers the costs of BCR payments made to resources by allocating those costs to scheduling coordinators representing load.

ii. The Role of Reference Levels

The CAISO refers to proxy commitment costs and default energy bids as reference levels. They are resource-specific and calculated daily by the CAISO. The proxy commitment costs place an upper limit on the resource's commitment cost bids to protect against market power if uncompetitive situations arise. The default energy bid is used in the local market power mitigation process when the market mitigates an incremental energy bid.[33]

For natural gas resources, the CAISO calculates reference levels using a formula that reflects the resource's physical characteristics and daily natural gas index prices.[34] Those index prices are further adjusted to reflect additional costs in the specific fuel region in which the resource takes delivery of fuel. The CAISO's formula does not account for gas-related costs other than commodity and transportation costs, *e.g.*, costs associated with intra-day gas purchases, hedging costs, other risk premiums, and certain non-gas-related variable costs.

The standard resource-specific costs used to calculate reference levels cannot perfectly reflect the actual costs incurred by generators. The reference levels include a multiplier that accounts for most potential variations between what is known to the CAISO when it calculates reference levels and resource-specific costs that ultimately materialize. Resources have opportunities to request cost adjustments when these multipliers are insufficient.

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[32] See generally, existing tariff section 11.8. The BCR mechanism nets costs and revenues separately across the applicable market, *i.e.*, the day-ahead market and real-time market.

[33] Energy bids are also subject to a soft cap of $1,000/MWh and a hard cap of $2,000/MWh. Existing tariff Appendix A, "Soft Energy Bid Cap" and "Hard Energy Bid Cap."

[34] Existing tariff sections 30.4.1.1.1(b), 30.4.1.1.2(b), 30.4.1.1.5, 30.7.9(c), and 30.7.10. The calculated proxy cost includes various cost components listed in the tariff, *e.g.*, fuel input costs, auxiliary power costs, greenhouse gas cost adders, adders for major maintenance expenses, and operation and maintenance costs. Existing tariff sections 30.4.1.1.1(a) and 30.4.1.1.2(a).

iii. Addressing Gas Market Volatility: Before-Market Reference Level Changes and After-Market Uplift Payments

The CAISO has recognized that gas market volatility can create circumstances where the gas price index information it uses to calculate reference levels does not reflect a resource's actual gas procurement costs. The gas price index used in the market is a weighted average gas price derived from multiple gas trades at a certain point in time, but resources still face resource-specific gas prices. Should reference levels underestimate a resource's costs, BCR can also wind up limiting a resource's cost recovery below its actual costs. This outcome (*i.e.*, resources being unable to recover their costs through the market) is something BCR seeks to avoid.

To address this potential consequence of unrecovered market costs, the CAISO tariff permits scheduling coordinators to request both: (1) before-market reference level changes;[35] and (2) after-market fuel cost uplift payments to supplement BCR payments.[36] Scheduling coordinators can make automated before-market reference level changes within reasonableness thresholds, subject to audit. The CAISO allows scheduling coordinators to submit before-market requests that go beyond the reasonableness thresholds, but these are subject to manual review by the CAISO. Changing the reference level upfront allows the resource to bid higher commitment costs that more accurately reflect a resource's true commitment costs. The market clearing process then incorporates those costs. If the resource is then still subject to BCR, its recovery under that mechanism will be based on more accurate costs. This helps ensure appropriate and accurate cost recovery for the resources.

If the before-market reference level change request opportunity still leaves a resource with unrecovered fuel costs after BCR calculations, then the resource can request an after-market uplift payment for those costs that otherwise would go unrecovered. Scheduling coordinators can submit an initial after-market request to the CAISO or the Commission. If the CAISO rejects the request or cannot validate the request, then the scheduling coordinator can submit a follow-on request to the Commission.

B. Proposed Tariff Revisions

The current CAISO tariff allows an after-market recovery request only if the scheduling coordinator has submitted a before-market reference level change

[35] Existing CAISO tariff section 30.11 addresses before-market requests.

[36] Existing CAISO tariff section 30.12 addresses after-market requests.

request.[37] This prerequisite is a safeguard against the submission of bids below cost to secure a market award, and then later requests seeking cost recovery for higher fuel costs. However, physical supply disruptions that impact physical receipt of gas may occur on a pipeline or fuel region that a resource has indexed in its reference levels after the deadline for submitting reference level change requests has passed. To address this limited circumstance, the CAISO proposes to allow a scheduling coordinator to seek after-the-fact cost recovery even if it has not submitted a before-market reference level change request, if it can demonstrate that a physical gas disruption occurred after market close and its resource incurred costs the scheduling coordinator could not reflect in reference level adjustment before market close. This situation can arise if a resource is associated with two different fuel regions and needs to secure natural gas from an alternative pipeline because a physical supply disruption on the pipeline had initially procured natural gas. The CAISO anticipates this circumstance to occur infrequently and will require the scheduling coordinator to provide supporting information, including information about the physical supply disruption publicly noticed by the natural gas pipeline operator as well as documentation supporting actual fuel costs that exceeded costs reflected and recovered through the CAISO markets.[38] The Commission should accept this limited exception because it will provide market participants an opportunity to recover actual fuel costs that might arise from a physical gas supply disruption after market close and for which the scheduling coordinator could not reflect in a reference level change request.

C. **Stakeholder Process**

The CAISO discussed this proposed tariff change related to after-market cost recovery as part of its gas resource management stakeholder initiative.[39] That initiative focused on ensuring gas resources can fully participate in CAISO-administered markets while efficiently recovering their operational costs. The CAISO also published a draft of tariff language and held an associated call for this tariff change. Stakeholders have expressed support for this element of the gas resource management initiative, which narrowly expands the opportunity to seek recovery for costs for which a resource would not have had a reasonable basis to request a cost adjustment before market close.

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[37] Existing CAISO tariff section 30.12.1. *Cal. Indep. Sys. Operator Corp*., Commission Letter Order, Docket No. ER25-1035 (March 18, 2025).

[38] Proposed changes to CAISO tariff section 30.12.1.

[39] More information about this initiative is available on the CAISO's website: https://stakeholdercenter.caiso.com/StakeholderInitiatives/Gas-resource-management-working-group.

IV. Request for Order and Effective Date

The CAISO respectfully requests the Commission issue an order by February 1, 2027 accepting these tariff revisions. The CAISO intends to implement them thereafter in the first quarter of 2027, and requests authorization to notify the Commission of the effective date of the tariff revisions seven days in advance of implementation.[40] This flexibility will allow the CAISO to coordinate updates to its Business Practice Manuals in connection with these tariff revisions.

V. Communications

Under Rule 203(b)(3),[41] the CAISO respectfully requests that all correspondence and other communications about this filing be served upon:

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VI. Service

The CAISO has served copies of this filing on the CPUC, the California Energy Commission, and all parties with scheduling coordinator agreements under the CAISO tariff. In addition, the CAISO has posted a copy of the filing on the CAISO website.

[40] The CAISO has included an effective date of 12/31/9998 as part of the tariff records submitted in this filing. The CAISO will notify the Commission of the actual effective date of these tariff records seven days in advance of implementation in an eTariff submittal using Type of Filing code 150 – Report. *See Cal. Indep. Sys. Operator Corp.*, 172 FERC ¶ 61,263 (2020).

[41] 18 C.F.R. § 385.203(b)(3).

VII. Contents of this filing

Besides this transmittal letter, this filing includes these attachments:

Attachment A	Clean CAISO tariff sheets
Attachment B	Marked CAISO tariff sheets
Attachment C	Final Proposal - 2026 variable operations and maintenance cost review
Attachment D	Final Proposal – Gas resource management
Attachment E	Western Energy Imbalance Market Governing Body briefing memorandum and record of vote for 2026 variable operations and maintenance cost review.
Attachment F	CAISO Board of Governors record of vote for 2026 variable operations and maintenance cost review
Attachment G	Western Energy Imbalance Market Governing Body briefing memorandum and record of vote for gas resource management initiative.
Attachment H	CAISO Board of Governors record of vote for gas resource management initiative

VIII. Conclusion

For the reasons set forth in this filing, the CAISO respectfully requests that the Commission issue an order accepting the tariff revisions in this filing by February 10, 2027, and authorize the CAISO to make them effective upon seven days' advance notice.

Respectfully submitted,

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Attachment A – Clean Tariff Sheets

Tariff Amendment – Variable Operations and Maintenance Adders, Variable Operating Cost for Storage Resources, and After the Fact Cost Recovery for Natural Gas Resources

California Independent System Operator Corporation

November 18, 2026

30.4.5.4.1 Generally

Each resource that satisfies applicable fuel source and technology requirements will receive the default Variable Operations and Maintenance Adders specified in the Business Practice Manuals. The Scheduling Coordinator for any resource may choose to negotiate with the CAISO pursuant to Section 30.4.5.4.3 for negotiated Variable Operations and Maintenance Adders that supersede or replace any default Variable Operations and Maintenance Adders the resource may receive. Variable Operations and Maintenance Adders are subject to renegotiation pursuant to Section 30.4.5.4.4 and to informational filings pursuant to Section 30.4.5.4.5.

30.4.5.4.2 Default Variable Operations and Maintenance Adders

The CAISO will calculate default Variable Operations and Maintenance Adders for different resource technologies and publish these values in the Business Practice Manuals.

The CAISO will assess the default Variable Operations and Maintenance Adders set forth in its Business Practice Manuals at least every three years through a stakeholder process. The CAISO's assessment will reflect relevant factors that may include the amount of time elapsed since the default values were assessed, changes in technologies or cost profiles of resources, and applicable inflation rates. The CAISO may undertake or rely on additional studies reflecting Variable Operations and Maintenance costs to inform these updates or propose new default Variable Operations and Maintenance Adders. The CAISO's assessment will be included in the stakeholder process and stakeholders will be able to comment on the assessment. The CAISO will publish updated values for these default Variable Operations and Maintenance Adders in its Business Practice Manuals.

* * * * *

30.12.1 Applicability

Scheduling Coordinators may request an additional uplift payment to cover a resource's actual fuel costs or fuel-equivalent costs associated with Start-Up Bid Costs, Minimum Load Bid Costs, Transition Bid Costs, and Energy Bid Costs used in the Bid Cost Recovery mechanism, and that are for:

(a) amounts in a Reference Level Change Request presented to the CAISO pursuant to Section 30.11 that the CAISO did not approve; or

(b) amounts in a Reference Level Change Request for a Default Energy Bid or Default Minimum Load Bid that exceeds the Hard Energy Bid Cap or the Minimum Load Cost Hard Cap, respectively.

Scheduling Coordinators may not request additional uplift payments under this Section 30.12 to cover costs: (1) associated with gas company imbalance penalties; or (2) that were not specifically included in a Reference Level Change Request unless a physical supply disruption occurred on the pipeline/fuel region indexed in the resource's Reference Levels after the Market Close and the physical supply disruption restricted access to delivery during the time period relevant to the cost recovery request. Scheduling Coordinators requesting additional uplift payments under this Section 30.12 that did not include those costs in a Reference Level Change Request must submit supporting information as described in the CAISO's Business Practice Manuals, including information about the physical supply disruption publicly noticed by the natural gas pipeline operator as well as documentation supporting actual fuel costs that exceeded costs reflected and recovered through the CAISO Markets.

* * * * *

39.7.1.8 Storage Resource Option

For storage resources participating as Non-Generator Resources, the storage resource option will calculate the Default Energy Bid by selecting the maximum of (1) the sum of the expected energy cost and the variable operations cost for storage resources and, (2) the storage opportunity cost. The calculation is completed by adding ten percent (10%) to the value. To calculate the Default Energy Bid, the CAISO will use the PMin, PMax, Run Times, and other charging and discharging parameters registered in the Master File.

The expected energy cost represents the average cost to procure the amount of energy needed to charge the resource during the lowest-priced continuous block of time such that the resource can discharge completely, accounting for the resource's charging duration and round-trip efficiency, and excluding losses. To calculate this component in the Day-Ahead Market, the CAISO will use the average price of Energy during the lowest priced hours based upon the final Energy Supply Bids from the MPM process at

the relevant PNode, not to be below $0/MWh. To calculate this component in the Real-Time Market, the CAISO will use the average price of Energy during the lowest priced hours based upon the LMP from the IFM at the relevant PNode on the Trading Day, not to be below $0/MWh.

The variable operations cost for storage resources represents the variable costs of operating a storage resource beyond its designed daily cycling range, submitted by the Scheduling Coordinator in $/MWh. The CAISO will publish a default variable operations cost for storage resources in the Business Practice Manuals. The CAISO will assess the default variable operations cost for storage resources set forth in its Business Practice Manual at least every three years through a stakeholder process. The CAISO's assessment will reflect relevant factors that may include the amount of time elapsed since the default values were assessed, changes in technologies or cost profiles of resources, and applicable inflation rates. The CAISO may undertake or rely on additional studies reflecting variable operations costs for storage resources to inform these updates. The CAISO's assessment will be included in the stakeholder process and stakeholders will be able to comment on the assessment. The CAISO will publish an updated default variable operations cost for storage resources in the Business Practice Manuals. Alternatively, Scheduling Coordinators may submit a value in $/MWh to establish a variable operations cost for a storage resource and the CAISO will validate the value based on whether the costs represent variable costs of operating a storage resource beyond its designed daily cycling range, manufacturer warranty, available data, and supporting documentation submitted by the Scheduling Coordinator.

The storage opportunity cost represents the value of preserving energy for discharge during higher-priced intervals instead of being dispatched in lower-priced intervals. It is calculated as the value of the Energy the resource could discharge during the highest-priced continuous time block, taking into account the resource's maximum discharge duration. To calculate this component in the Day-Ahead Market, the CAISO will use the lowest price of Energy during the highest priced period over which the resource could have discharged, based upon advisory prices from the Market Power Mitigation process at the relevant PNode. To calculate this component in the Real-Time Market, the CAISO will use the lowest price of Energy during the highest priced period over which the resource could have discharged, based upon the LMP from the IFM at the relevant PNode on the Trading Day.

Attachment B – Redlined Tariff Sheets

Tariff Amendment – Variable Operations and Maintenance Adders, Variable Operating Cost for Storage Resources, and After the Fact Cost Recovery for Natural Gas Resources

California Independent System Operator Corporation

November 18, 2026

30.4.5.4.1 Generally

Each resource that satisfies ~~the~~ applicable fuel source and technology requirements ~~set forth in Section 30.4.5.4.2~~ will receive the default Variable Operations and Maintenance Adders specified in the Business Practice Manuals~~thereunder~~. The Scheduling Coordinator for any resource may choose to negotiate with the CAISO pursuant to Section 30.4.5.4.3 for negotiated Variable Operations and Maintenance Adders that supersede or replace any default Variable Operations and Maintenance Adders the resource may receive. Variable Operations and Maintenance Adders are subject to renegotiation pursuant to Section 30.4.5.4.4 and to informational filings pursuant to Section 30.4.5.4.5.

30.4.5.4.2 Default Variable Operations and Maintenance Adders

The CAISO will calculate default Variable Operations and Maintenance Adders for different resource technologies and publish these values in the Business Practice Manuals.

~~The default Variable Start-Up Operations and Maintenance Adder for a frame combustion turbine resource will equal $61.89 per start per MW multiplied by the PMax of the resource or MSG Configuration of the resource.~~

~~The default Variable Minimum Load Operations and Maintenance Adder will vary by fuel source or technology as follows: (1) for a natural gas-fired combined cycle resource, the adder will equal $2.07 per run-hour per MW multiplied by the PMax of the resource or MSG Configuration of the resource; (2) for an aeroderivative combustion turbine resource, the adder will equal $5.20 per run-hour per MW multiplied by the PMax of the resource or MSG Configuration of the resource; and (3) for a hydroelectric resource, the adder will equal $0.77 per run-hour per MW multiplied by the PMax of the resource or MSG Configuration of the resource.~~

~~The default Variable Energy Operations and Maintenance Adder will vary by fuel source or technology as follows: (1) nuclear $1.28/MWh; (2) coal $3.19/MWh; (3) wind $0.33/MWh; (4) natural gas-fired combined cycle units $0.70/MWh; (5) steam units $0.39/MWh; (6) geothermal $1.38/MWh; (7) landfill gas $1.44/MWh; (8) frame combustion turbines $1.15/MWh; (9) aeroderivative combustion turbines $2.55/MWh; (10) reciprocating internal combustion engines $1.31/MWh; and (11) biomass $1.96/MWh.~~

The CAISO will assess the default Variable Operations and Maintenance Adders set forth in its Business Practice Manuals at least every three years through a stakeholder process. The CAISO's assessment

will reflect relevant factors that may include the amount of time elapsed since the default values were assessed, changes in technologies or cost profiles of resources, and applicable inflation rates. The CAISO may undertake or rely on additional studies reflecting Variable Operations and Maintenance costs to inform these updates or propose new default Variable Operations and Maintenance Adders. The CAISO's assessment will be included in the stakeholder process and stakeholders will be able to comment on the assessment. The CAISO will publish updated values for these default Variable Operations and Maintenance Adders in its Business Practice Manuals.

* * * * *

30.12.1 Applicability

Scheduling Coordinators may request an additional uplift payment to cover a resource's actual fuel costs or fuel-equivalent costs associated with Start-Up Bid Costs, Minimum Load Bid Costs, Transition Bid Costs, and Energy Bid Costs used in the Bid Cost Recovery mechanism, and that are for:

(a) amounts in a Reference Level Change Request presented to the CAISO pursuant to Section 30.11 that the CAISO did not approve; or

(b) amounts in a Reference Level Change Request for a Default Energy Bid or Default Minimum Load Bid that exceeds the Hard Energy Bid Cap or the Minimum Load Cost Hard Cap, respectively.

Scheduling Coordinators may not request additional uplift payments under this Section 30.12 to cover costs: (1) associated with gas company imbalance penalties; or (2) that were not specifically included in a Reference Level Change Request unless a physical supply disruption occurred on the pipeline/fuel region indexed in the resource's Reference Levels after the Market Close and the physical supply disruption restricted access to delivery during the time period relevant to the cost recovery request. Scheduling Coordinators requesting additional uplift payments under this Section 30.12 that did not include those costs in a Reference Level Change Request must submit supporting information as described in the CAISO's Business Practice Manuals, including information about the physical supply disruption publicly noticed by the natural gas pipeline operator as well as documentation supporting actual fuel costs that exceeded costs reflected and recovered through the CAISO Markets.

* * * * *

39.7.1.8 Storage Resource Option

For storage resources participating as Non-Generator Resources, the storage resource option will calculate the Default Energy Bid by selecting the maximum of (1) the sum of the expected energy cost and the variable operations cost for storage resources ~~variable storage operation cost~~ and, (2) the storage opportunity cost. The calculation is completed by adding ten percent (10%) to the value. To calculate the Default Energy Bid, the CAISO will use the PMin, PMax, Run Times, and other charging and discharging parameters registered in the Master File.

The expected energy cost represents the average cost to procure the amount of energy needed to charge the resource during the lowest-priced continuous block of time such that the resource can discharge completely, accounting for the resource's charging duration and round-trip efficiency, and excluding losses. To calculate this component in the Day-Ahead Market, the CAISO will use the average price of Energy during the lowest priced hours based upon the final Energy Supply Bids from the MPM process at the relevant PNode, not to be below $0/MWh. To calculate this component in the Real-Time Market, the CAISO will use the average price of Energy during the lowest priced hours based upon the LMP from the IFM at the relevant PNode on the Trading Day, not to be below $0/MWh.

The variable operations cost for storage resources ~~variable storage operation cost~~ represents the variable costs of operating a storage resource beyond its designed daily cycling range, submitted by the Scheduling Coordinator in $/MWh. The CAISO will publish a default variable operations cost for storage resources in the Business Practice Manuals. The CAISO will assess the default variable operations cost for storage resources set forth in its Business Practice Manual at least every three years through a stakeholder process. The CAISO's assessment will reflect relevant factors that may include the amount of time elapsed since the default values were assessed, changes in technologies or cost profiles of resources, and applicable inflation rates. The CAISO may undertake or rely on additional studies reflecting variable operations costs for storage resources to inform these updates. The CAISO's assessment will be included in the stakeholder process and stakeholders will be able to comment on the

assessment. The CAISO will publish an updated default variable operations cost for storage resources in the Business Practice Manuals. Alternatively, Scheduling Coordinators may submit a value in $/MWh to establish a variable operations cost for a storage resource and the CAISO will validate the value ~~The CAISO will validate the storage operation cost~~ based on whether the costs represent variable costs of operating a storage resource beyond its designed daily cycling range, manufacturer warranty, available data, and supporting documentation submitted by the Scheduling Coordinator.

The storage opportunity cost represents the value of preserving energy for discharge during higher-priced intervals instead of being dispatched in lower-priced intervals. It is calculated as the value of the Energy the resource could discharge during the highest-priced continuous time block, taking into account the resource's maximum discharge duration. ~~The storage opportunity cost represents the opportunity cost of being dispatched during lower-priced intervals, equal to the cost of Energy the resource could discharge during the highest-priced continuous block, accounting for the resource's discharge duration.~~ To calculate this component in the Day-Ahead Market, the CAISO will use the lowest price of Energy during the highest priced period over which the resource could have discharged, based upon advisory prices from the Market Power Mitigation process at the relevant PNode. To calculate this component in the Real-Time Market, the CAISO will use the lowest price of Energy during the highest priced period over which the resource could have discharged, based upon the LMP from the IFM at the relevant PNode on the Trading Day.

Attachment C

Final Proposal – 2026 Variable Operations and Maintenance Cost Review

Tariff Amendment – Variable Operations and Maintenance Adders, Variable Operating Cost for Storage Resources, and After the Fact Cost Recovery for Natural Gas Resources

California Independent System Operator Corporation

November 18, 2026

2026 Variable Operations and Maintenance Cost Review

Final Proposal

August 6, 2026

ISO Public

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1 EXECUTIVE SUMMARY

Variable operations and maintenance (VOM) adders are the market instrument through which scheduling coordinators can reflect VOM costs for their resources in CAISO's markets. These costs are included in the calculation of default energy bids (DEBs) and default commitment costs. The VOM adders can be negotiated with CAISO; if no negotiation takes place a pre-determined default value is used.

The variable operations cost for energy storage resources is a mechanism that allows scheduling coordinators to reflect costs associated with cycling and cell augmentation. These costs are used in calculating the default energy bid for resources with the storage DEB as the primary ranked option, or where a negotiated default energy bid is in place. Currently, storage resources are required to negotiate a variable operations cost with CAISO; if no value is established, a value of $0/MWh is applied.

CAISO is committed to reviewing the default VOM adder values once every three years. During the previous VOM Cost Review cycle, CAISO reviewed and updated the default VOM adder values to an inflation reference year of 2023. For this review cycle, CAISO has reviewed the current default VOM adders and determined that an update is warranted to capture the change in inflation rates since 2023. Additionally, in this review cycle CAISO proposes a default value for the variable operations cost for energy storage resources. There is now a large fleet of energy storage resources participating in the market, and CAISO determined that a default variable operations cost is warranted to reduce the administrative costs associated with negotiating a value.

CAISO proposes to apply a 9.84% inflation adjustment to current default VOM adders based on Consumer Price Index (CPI) data from the US Bureau of Labor Statistics (BLS). CAISO also proposes a default variable operations cost for storage resources of $14.74/MWh based on values negotiated by scheduling coordinators with CAISO.

2 BACKGROUND

The VOM adders represent variable operations and maintenance costs incurred by resources. For storage resources, variable operations cost adders represent the variable cost of operating a storage resource, including cycling and cell augmentation. The VOM adders are used in CAISO's calculation of cost-based DEBs and default commitment costs including minimum load, startup and transition costs. The variable operations cost

for storage resources is used in CAISO's calculation of storage DEBs; there are no commitment costs for storage resources.[1]

CAISO offers default VOM adders for the various types of resources participating in the market. The default value is automatically assigned based on a resource's fuel and technology type. If a scheduling coordinator finds the default value unsuitable for their resources they can negotiate a value with CAISO which can be administratively burdensome. The default VOM adders were developed to strike a balance – they should be conservative enough to prevent unwarranted costs while still being attractive in lieu of negotiating a value. CAISO also committed to reviewing the default VOM adder values once every three years to determine whether they remain appropriate.[2] The previous default VOM adder updates used 2023 values as the reference year, making 2026 the next appropriate reference year.

For energy storage resources, a variable operations cost must be negotiated with CAISO otherwise it is automatically set to $0/MWh. CAISO believes that the introduction of a non-zero default variable operations cost is appropriate with over 16,000 MW of energy storage currently participating in the market. Like default VOM adders, the default variable operations cost should be sufficiently conservative while also still being attractive in lieu of negotiating a value. The default value would automatically be assigned to eligible energy storage resources – only storage resources designated as non-Regulation Energy Management (non-REM) are eligible for a DEB. Market participants can always negotiate a value with CAISO if they find the default value is inadequate.

3 DEFAULT VOM ADDERS

3.1 Review of current default VOM adder values

Table 1 has the currently effective default VOM adder values. There are three types of adders: the variable energy O&M (VOM-EN) adder, variable minimum load O&M (VOM-ML) adder, and variable start-up O&M (VOM-SU) adder. The default VOM-ML and VOM-SU adders are expressed in $/run-hour/MW and $/start/MW units, respectively. To arrive at a resource-specific VOM adder, the default value is multiplied by the Pmax of the resource or configuration. This results in the resource-specific VOM-ML and VOM-SU adders being expressed in $/run-hour or $/start units, respectively.

[1] VOM adders and variable operations cost may also be included in the negotiated DEB option. DEBs are used in the local market power mitigation process to adjust bids when a resource is found to wield market power, and default commitment costs are used to cap commitment cost bids.
[2] This commitment appears in the BPM for Market Instruments but not in the ISO Tariff.

The default VOM adder values were established based on industry-wide cost studies and a variety of external sources and they were reviewed and updated in each triennial review cycle. The default VOM-ML and VOM-SU adders were initially developed by CAISO based on data provided by an external consultant, other external sources and negotiated VOM adders. The values were updated again in 2020 using NYISO's Cost of New Entry (CONE) studies. The default VOM-EN adders were developed by an external consultant.[3] In the last review cycle in 2023, CAISO inflation-adjusted the default values to 2023-year dollars by applying an 18.7% increase.[4]

Table 1: Current default VOM adder values

Technology Type	Default VOM-EN Adder *($/MWh)*	Default VOM-ML Adder *($/run-hour/MW)*	Default VOM-SU Adder *($/start/MW)*
Coal	3.19	-	-
Steam turbines	0.39	-	-
Natural gas-fired combined-cycle	0.70	2.07	-
Frame combustion turbines	1.15	-	61.89
Aeroderivative combustion turbines	2.55	5.20	-
Reciprocating internal combustion engines	1.31	-	-
Nuclear	1.28	-	-
Biomass	1.96	-	-
Geothermal	1.38	-	-
Landfill gas	1.44	-	-
Hydroelectric	-	0.77	-
Solar	-	-	-
Wind	0.33	-	-
Other (*e.g.*, demand response)	-	-	-

3.2 Stakeholder feedback on proposed default VOM adders

[3] CAISO, "Final Proposal – Variable Operations and Maintenance Cost Review", October 2020, p. 5-6.
[4] CAISO, "Final Proposal – Variable Operations and Maintenance Cost Review 2023", Aug 2023, p. 3.

CAISO proposed a 9.84% inflation adjustment to increase the current default VOM adders and presented the methodology in the Straw Proposal published on July 7, 2026.[5] One set of comments was received from Vistra who expressed support for the proposed increase.

3.3 Final proposal for default VOM adders

CAISO proposes to update the current default VOM adder values with a 9.84% inflation increase based on BLS CPI-U data from June 2023 to May 2026. The proposed default VOM adder values using the updated inflation adjustments are shown in Table 2.

For the proposed update to the default VOM adders in the current review, CAISO considered several factors:

- Inflation: The BLS Consumer Price Index for All Urban Consumers (CPI-U) increased 9.84% from June 2023 to May 2026.[6] The increased inflation is an indicator that the current default values need to be updated. The inflation-adjustment methodology using BLS CPI-U data is appropriate as it was recommended by external consultant (Nexant) in its 2018 cost report[7] and is consistent with the methodology used in previous VOM Cost Review cycles. The BLS CPI-U methodology is also consistent with the inflation-adjustment methodologies used by scheduling coordinators for their resources negotiated VOM adders.

- Frequency of negotiations: CAISO continues to conduct a steady but not an abnormally high number of negotiations for VOM adders. If the default VOM adders were too high for many resources, this will indicate that negotiations aren't needed and thus CAISO would conduct VOM negotiations infrequently; conversely, if the default VOM values were too low, CAISO would be constantly negotiating VOM adders. Given that the frequency and volume of VOM negotiations falls between these two extremes, this factor does not indicate whether an update is warranted.

[5] CAISO, "Straw Proposal, 2026 Variable Operations and Maintenance Cost Review", July 2026, p. 6.
[6] US Bureau of Labor Statistics, Consumer Price Index for All Urban Consumers (CPI-U): All items in U.S. city average, all urban consumers, not seasonally adjusted, https://www.bls.gov/cpi/data.htm, accessed July 2026.
[7] CAISO, "Variable Operations and Maintenance Costs Report", December 2018, p. 9.

- Industry-wide cost study: CAISO observed that the technology types of generating resources participating in the market and using VOM adders are captured sufficiently by the technology types comprising the existing default VOM adders, such that another industry-wide cost study is not necessary.

Of the three factors, CAISO believes the inflation factor should be weighed most heavily because it is the most quantitatively rigorous indicator. The frequency of negotiations does not indicate whether an update is warranted, and an updated industry-wide cost study is not necessary. Thus, CAISO's review of the proposed default VOM adders indicates that an update based on inflation is most appropriate.

As a reminder, the default VOM adder values are simply default values to be used if a scheduling coordinator does not wish to go through the negotiation process. Accordingly, if a scheduling coordinator believes the values are too low or otherwise inadequate, they can negotiate a more appropriate resource-specific value.

Table 2: Proposed default VOM adder values

Technology Type	**Default VOM-EN Adder *($/MWh)***	**Default VOM-ML Adder *($/run-hour/MW)***	**Default VOM-SU Adder *($/start/MW)***
Coal	3.50	-	-
Steam turbines	0.43	-	-
Natural gas-fired combined-cycle	0.77	2.27	-
Frame combustion turbines	1.26	-	67.98
Aeroderivative combustion turbines	2.80	5.71	-
Reciprocating internal combustion engines	1.44	-	-
Nuclear	1.41	-	-
Biomass	2.15	-	-
Geothermal	1.52	-	-
Landfill gas	1.58	-	-

Hydroelectric	-	0.85	-
Solar	-	-	-
Wind	0.36	-	-
Other (*e.g.*, demand response)	-	-	-

4 DEFAULT VARIABLE OPERATIONS COST FOR STORAGE RESOURCES

CAISO proposes establishing a default variable operations cost for storage resources to reflect the growing participation of battery storage in the market and to reduce the administrative burden associated with negotiating resource-specific values. With more than 16,000 MW of storage capacity participating in the market and 61 active negotiated storage variable operations cost agreements on file, CAISO believes sufficient experience now exists to establish a default value.

4.1 Options for establishing default variable operations cost

CAISO evaluated four potential options for a default variable operations cost and presented them in the Straw Proposal published on July 7, 2026.[8] The options are based on a catalog of negotiated variable operations costs approved by CAISO over the past five years. Table 3 and Table 4 summarize the approved negotiated values based on supporting document type and OEM group, respectively. The actual OEM name has been concealed to protect proprietary information.

Table 3: Active variable operations costs for storage resources by supporting document

Supporting Document Type	Number of resources with active negotiated value	Average Value ($/MWh)	Median Value ($/MWh)
LTSA	39	17.87	14.74
PPA	6	28.23	31.20
Projected costs	16	34.48	30.82
Total	61	23.25	19.43

[8] CAISO, "Straw Proposal, 2026 Variable Operations and Maintenance Cost Review", July 2026, p. 9.

Table 4: Active variable operations costs for storage resources by OEM group

OEM Group	Number of resources *with active negotiated value*	Average Value ($/MWh)	Median Value ($/MWh)
OEM 1	10	22.32	25.00
OEM 2	24	22.82	16.00
OEM 3	14	20.84	28.05
OEM 4	13	27.36	14.74
Total	61	23.25	19.43

The four options are described below:

Option 1: Long-term service agreements (LTSA)-based values

LTSA is a contractual arrangement between a resource owner/operator and a service provider for the maintenance and support of major power equipment over a multi-year period. For some units, maintenance is predefined based on OEM recommendations and contractually assigned to a service provider through LTSAs.

Based on CAISO's review, LTSA-based registration accounted for 65% of negotiations in the dataset (39 out of 61 values). In this category, the mean value is $17.87/MWh while the median is $14.74/MWh. CAISO considers a LTSA-based variable operations cost more appropriate than the other types of supporting documentation, i.e., Power Purchasing Agreement (PPA) and projected costs; the LTSA-based cost comes directly from the manufacturer and is most reflective of actual variable operations costs. CAISO also considers the median a more robust measure of central tendency that is not distorted by outliers or skewed data compared to the mean value. Thus, CAISO recommends the median value from LTSA-based variable operations cost values of $14.74/MWh as the default variable operations cost for storage resources.

Option 2: All active negotiated values

This option considers all active negotiated values including LTSA-based, PPA-based and projected cost-based values. Among the 61 registered cases, the mean cost is $23.25/MWh and median cost is $19.43/MWh. CAISO does not recommend this option because PPA-based and projection cost-based values do not provide visibility into the costs covered and whether any inappropriate costs are included compared to LTSA-based

values. This concern is further supported by the values in **Error! Reference source not found.** which show that PPA-based and projection cost-based negotiated values are higher than LTSA-based values.

Option 3: Manufacturer-based values

Due to variations in cost structure across different OEMs, Option 3 introduces an approach using different values according to the manufacturer. The median value of each group varies from $14.74/MWh to $28.05/MWh as shown in **Error! Reference source not found.**. This approach aims to provide more tailored and adaptive benchmarks based on underlying fuel type and technologies.

However, the effectiveness of this approach depends on the availability of sufficient sample data within each category. At the current stage, the dataset is not large enough to support statistically robust categorization and validation. However, Option 3 shows potential for more granular default values by manufacturers, and CAISO will keep gathering information on variable operations costs for storage resources and refine this option for subsequent triennial reviews.

Option 4: Status quo values

This option proposes to defer the default to the next review cycle and keep the existing process where a $0/MWh variable operations cost is used if a value is not negotiated by the scheduling coordinator. CAISO would continue to gather information on negotiated values and develop a more comprehensive and representative data set until the next review cycle. Armed with a larger dataset, CAISO would revisit the proposed options to establish default variable operations costs for storage resources are warranted. This option minimizes the risk of proposing default values to all storage resources based on limited or incomplete information but is not recommended as it requires scheduling coordinators to continue to negotiate a value which is administratively costly.

4.2 Stakeholder feedback on proposed default variable operations cost

CAISO recommended the median value from Option 1 (LTSA-based values) of $14.74/MWh in the Straw Proposal published on July 7, 2026.[8] Stakeholder comments were received from Vistra and Clean Energy States Alliance (CESA) in support of this value. CESA's comments also supported reviewing the recommended default variable

operations cost value in the next triennial review for inflation and against future negotiated values.

In Vistra's comments, clarity on future inflation adjustments for the default variable operations cost was requested, as well as whether the inflation adjustment would be applied to the default variable operations cost year over year. The ISO clarifies that an explicit inflation adjustment is not being applied to the proposed default variable operations cost of $14.74/MWh. This value is based on active LTSA-based costs negotiated by scheduling coordinators over the past five years which CAISO considers up to date and thus reflective of current costs, including inflation. Applying an inflation adjustment to these negotiated values may thus overstate them. However, the ISO does plan to consider an inflation adjustment to the default variable operations cost in all future triennial review cycles. The inflation adjustment would be updated triennially, not year over year. Scheduling coordinators can always request a negotiated variable operations cost to reflect inflation on a more frequent basis.

4.3 Final proposal for default variable operations cost

CAISO proposes a $14.74/MWh value for the default variable operations cost based on the median value from Option 1 (active LTSA-based negotiated values). This is the CAISO-recommended option as LTSAs are contracts from the manufacturer which describe the operations and maintenance actions covered by the costs; thus LTSA-based values best represent actual costs compared to PPA-based and projected cost-based values.

CAISO recognizes that individual battery variable operations costs can vary based on battery chemistry, manufacturer arrangements, operating profiles, and other factors. In such circumstances, the negotiated option continues to be available for scheduling coordinators to negotiate resource-specific values when the default value does not suffice.

5 DECISIONAL CLASSIFICATION

This initiative proposes to amend the tariff to update the value of the default VOM adders and to establish a default variable operations cost for battery resources which are reflected in market bids. CAISO proposes that these tariff changes will be subject to the primary authority of the WEM Governing Body for decision because they apply to the

Extended Day Ahead Market (EDAM) and Western Energy Imbalance Market (WEIM) as explained below.

The Western Energy Markets Governing Body has primary authority over any proposal to change or establish any CAISO tariff rule(s) applicable to EDAM or WEIM balancing authority areas, EDAM or WEIM entities, or other market participants within the EDAM or WEIM Entity balancing authority areas. This scope excludes from primary authority, without limitation, any proposals to change or establish tariff rule(s) applicable only to the CAISO balancing authority area or to the CAISO-controlled grid per charter for WEIM and EDAM Governance § 2.2.1. The tariff rule changes contemplated in this initiative would be "applicable to WEIM/EDAM Entity balancing authority areas, WEIM/EDAM Entities, or other market participants within WEIM/EDAM Entity balancing authority areas, in their capacity as participants in the WEIM/EDAM." None of the proposed tariff rules would be applicable "only to the CAISO balancing authority area or to the CAISO-controlled grid." Accordingly, the matters scheduled for decision fall solely within the scope of primary authority.

This proposed classification reflects the current state of this initiative and could change as the stakeholder process moves ahead. Stakeholders are encouraged to submit a response in their written comments to the proposed classification as described above, particularly if they have concerns or questions.

6 PROPOSED STAKEHOLDER TIMELINE

The proposed schedule for stakeholder engagement is detailed below in Table 5.

Please note that the dates below are tentative until CAISO publishes a notice formally confirming them.

Table 5: Stakeholder timeline

Date	Milestones
May 29, 2026	Published Issue Paper
June 4, 2026	Stakeholder Meeting on Issue Paper
June 18, 2026	Published Stakeholder comments on Issue Paper
July 7, 2026	Published Straw Proposal
July 9, 2026	Stakeholder Call for Straw Proposal

July 23, 2026	Published Stakeholder comments on Straw Proposal
August 6, 2026	Publish Final Proposal and Draft Tariff Language
August 20, 2026	Stakeholder Call for Final Proposal and Draft Tariff Language
September 3, 2026	Stakeholder comments due on Draft Tariff Language
October 26, 2026	Seek WEM Governing Body approval

Attachment D

Final Proposal – Gas Resource Management

Tariff Amendment – Variable Operations and Maintenance Adders, Variable Operating Cost for Storage Resources, and After the Fact Cost Recovery for Natural Gas Resources

California Independent System Operator Corporation

November 18, 2026



Gas Resource Management

Final Proposal

November 14, 2025

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Gas Resource Management
Final Proposal

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1. Executive Summary

This package of proposed near-term enhancements to the California Independent System Operator's (ISO) market rules and processes aims to improve functionality for regional market participants with natural gas-fired resources. The final proposal builds on the straw proposal and draft final proposal, which were based on stakeholder recommendations from the Gas Resource Management (GRM) working group, and incorporates feedback to the draft final proposal.

The stakeholder working groups, formed to examine coordination between regional gas and electric systems, identified differences in gas storage and operating practices across the region. These differences raised concerns about whether current assumptions underlying gas resource participation in wholesale electricity markets appropriately apply to regional market participants in the West. Market participants report challenges in updating the ISO with timely, dynamic cost information to ensure their supply offers accurately reflect fuel costs, especially in extreme conditions, which affects whether market revenues adequately cover their fuel costs. They also question whether electricity market supply offers alone can effectively address gas system volatility, illiquidity, and constraints. This initiative aimed to identify and resolve gaps in the ISO's market design that may limit the ability for gas resources participating in the Western Energy Imbalance Market (WEIM), and the Extended Day Ahead Market (EDAM), from accurately reflecting their gas costs and availability.

To address these concerns, the Final Proposal provides for three categories of enhancements:

1. Expanded options for cost inputs, adjustments, and recovery to better accommodate unique supply arrangements and exceptional circumstances,
2. Additional options for managing gas system limitations, and
3. Modifications to day-ahead advisory market runs to improve fuel procurement forecasts within gas nomination timelines.

2. Introduction

2.1. Policy development objectives and future work

This initiative adapts the existing policy and business practice rules for gas resources to changes in market participation. The ISO and stakeholders developed existing tools—multi-day ahead advisory information, reference levels,[1] the reference level change request process, and the after-the-fact cost adjustment process— considering the gas and electricity interactions within the CAISO balancing authority area. Differences in gas market conditions, supply arrangements, and physical infrastructure in other parts of the West warrant re-calibrating these tools to ensure all market participants have equitable flexibility and opportunities for managing their costs through the market.

[1] Reference levels are ISO calculated cost estimates for participating resources informed by resource parameters registered in the Master File and fuel or fuel-equivalent cost inputs. Reference levels included default energy bids, start-up costs, minimum load costs and transitions costs.

In addition to the changes proposed in this final proposal, the ISO will pursue implementation of previously Board-approved policy expanding bidding flexibility of commitment costs subject to market power mitigation as supported by stakeholders and the market surveillance committee (MSC).[2] The ISO will discuss the implementation of these changes and any associated challenges with stakeholders in 2026. Today, commitment costs for resources across the market footprint are subject to limits at all times, regardless of whether resources have market power. This differs from the ISO's mitigation of incremental energy offers, which only occurs when a resource has been found to be able to exercise market power determined through the dynamic competitive path assessment and has submitted energy bids above their cost-based bids. The implementation of additional bidding flexibility subject to market power mitigation has the potential to more accurately reflect commitment costs when the resources are not subject to mitigation. However, when they are subject to mitigation, the cost-based bids should reflect accurate fuel costs to the extent possible. This final proposal enhances market participants' ability to update the market with the fuel costs and cost conditions that should be considered in their cost-based bids to ensure efficient market outcomes and cost recovery when to the market considers cost-based bid.

Additionally, the ISO has committed to enhance SIBR, the platform through which SCs can use the automated RLCR process, to make it easier for SCs to submit automated cost adjustments. While this effort requires no policy change, the ISO sees this as needed groundwork to ensure the enhancements in this policy can be fully used. This is discussed further in section 3.6.

The Final Proposal provides a set of proposals that represent a logical and needed extension of existing processes to ensure market participants' needs are addressed as new EDAM participants enter the day-ahead market. This Final Proposal also defines plans to continue evaluating the proposed changes, and opportunities for re-calibration based on observed market outcomes.

2.2. Outline of the proposal and changes responding to latest stakeholder feedback

The Final Proposal includes clarifications to respond to stakeholder questions and reinforcing key concepts. The intent and underlying policy in each section remains consistent with the draft final proposal.

- **Section 3** describes the same three proposals described in the draft final proposal for additional flexibility in reference levels and the after-the-fact cost recovery process. The updated description of the fuel cost parameter adjustment[3] proposal, now in section 3.3, provides

[2] The ISO and stakeholders proposed a design for dynamic market power mitigation of commitment costs in the Commitment Costs and Default Energy Bid Enhancements policy initiative. The policy was approved by the ISO Board of Governors in 2018. The ISO did not move forward with implementation after identifying implementation challenges that would still require resolution. The MSC discussed this policy in an MSC general session meeting on March 28, 2025.

[3] Described in the Draft Final Proposal section 4.3.

additional background on the working group and policy process that informed this proposal to reinforce the policy objectives and principles in this section. The ISO also responds to stakeholder questions regarding the proposed use of a benchmark as initial criteria, and clarifies the steps the ISO will take to validate whether adjustments are warranted.

- **Section 4** details the gas-electric coordination process to establish a gas nomogram. The ISO updated this section to capture what was discussed in the technical workshop.[4]

- **Section 5** describes the D+2 assessment and changes to the multi-day ahead market run to improve outcomes for resource-level gas schedules. This section does not require action by the Board of Governors or the WEM Governing Body because there is existing ISO tariff authority supporting these changes.

3. Accommodating Gas Cost Variation

The ISO and stakeholders considered how existing tools for accommodating fuel cost variation work for gas generators in parts of the West participating in the WEIM, and soon to come EDAM, where physical gas system characteristics and fuel supply arrangements are diverse. To ensure all market participants are treated equitably, the Final Proposal includes enhancements to accommodate unique gas market conditions and fuel supply arrangements observable across the west.

3.1. Reference levels, the reference level change request process, and after-the-fact cost recovery

The ISO expects gas resources to reflect the cost of managing fuel procurement in the market using their bids—incremental energy, minimum load, and commitment costs. The ISO calculates reference levels for each bid component to use in market power mitigation processes. Reference levels are a pre-defined estimate of a resource's verifiable operating costs that the ISO may use to verify a resource's submitted offers or proxy their costs in the market. In case of mitigation, reference levels should be an accurate representation of cost to ensure the market commits resources efficiently.

The ISO developed technology-specific formulas to calculate reference levels for each bid component. The ISO uses a variable cost calculation to represent the default energy bid,[5] and a proxy cost calculation to represent commitment costs. These formulas provide a framework for the ISO to calculate the

[4] Gas resource management: technical workshop for nomograms (august 13, 2025): https://stakeholdercenter.caiso.com/InitiativeDocuments/Presentation-Gas-Resource-Management-Aug-13-2025.pdf

[5] Market participants can choose from multiple DEB options including an LMP and registered cost option. This proposal focuses on the variable cost option as it was specifically designed for gas-fired generation. The reasonableness threshold for all resources is currently calculated using the variable cost DEB formula.

operational costs of gas fired generation. Both calculations reflect the resource's specific fuel cost using a fuel region[6] component (highlighted in blue below) that references a Gas Price Index (GPI) to capture the prevailing cost of fuel. This value is updated daily by the ISO:

$$[Unit\ specific\ heat\ rate * (Commodity\ gas\ price\ index + total\ transportation\ cost)][7]$$

Resources can register multiple fuel regions in the master file, but only one fuel region can be active at a time. Reference levels reflect only the active fuel region. The ISO updates the GPI daily with the latest index price from the next-day gas day, once before the day-ahead market and again with settled next-day gas indices for real-time reference levels[8].

The ISO calculates four separate reference calculations—a default calculation for both energy and commitment cost bid components, and an additional "reasonableness threshold" that the ISO uses to validate volatility not captured by default. The ISO will use the resource's active fuel region to calculate each of these reference levels but modifies the calculations to cover different ranges of potential costs (illustrated in Figure 1):

- **Default calculations**: The ISO uses the default energy bid as a mitigation floor if the ISO detects market power. The default commitment cost calculation serves as a cap with which the ISO validates commitment cost bids before they are considered in the market. These default reference levels include default multipliers to account for most differences between what the ISO knows and what a resource's actual costs are including most regular volatility relative to the active GPI. These should cover enough cost variation so that a resource does not need to adjust their reference levels as a regular practice.

- **The reasonableness threshold**: The ISO calculates a reasonableness threshold for both energy and commitment costs. The ISO uses the reasonableness threshold to automatically verify costs that exceed the range covered by default. The reasonableness threshold is identical to the default variable cost DEB and proxy commitment cost calculation but includes an additional fuel volatility scalar to give resources more flexibility to request cost adjustments through the reference level change request process, which is described further below.

[6] The fuel region can include multiple key components aside from the GPI including miscellaneous costs like taxes. The BPM for Market Instruments Attachment C describes the process for requesting or establishing and assigning fuel regions to resources for use in their reference level calculations.
[7] BPM for Market Instruments Attachment D.5 for the Variable Cost Option describes the full formula and example calculation. BPM for Market Instruments Attachment G describes maximum start-up and minimum load values under the registered and proxy cost options.
[8] The Gas resource management Issue Paper describes the GPI updates in section 5.2; https://stakeholdercenter.caiso.com/InitiativeDocuments/Issue-Paper-Gas-Resource-Management-January-24-2025.pdf

Figure 1 Threshold values associated with each reference level

	ISO Calculated Gas Price Index (GPI)		Resource Requested Fuel Cost
	Default Calculations *safe harbor*	**Reasonableness Threshold** *ISO validates automated reference level change requests up to:*	The ISO recalculates all reference levels using approved fuel costs but does not include the multipliers
Energy Bids	Variable cost DEB calculation ***110% DEB multiplier**	The variable cost DEB calculation with an additional fuel cost volatility multiplier [• GPI * **110% fuel volatility scalar *on days with a published gas index price, or*** • GPI * **125% fuel volatility scalar *on days without a published gas index price***] * **110% DEB multiplier**	
Commitment Costs	Proxy commitment cost calculation * **125% commitment cost multiplier**	Proxy commitment cost calculation with an additional fuel cost volatility multiplier [• GPI * **110% fuel volatility scalar *on days with a published gas index price, or*** • GPI * **125% fuel volatility scalar *on days without a published gas index price***] * **125% commitment cost multiplier**	
		Automated RLCR Process	**Manual RLCR Process**

The reference level change request (RLCR) process gives resources the opportunity to update the ISO with their fuel costs if they differ from what the ISO uses to calculate reference levels. There are two options under the umbrella of the RLCR process—the automated and the manual process—that offer different kinds of flexibility in terms of timing and up-front verification requirements.

The automated RLCR process offers resources the opportunity to reflect actual and *expected* costs in the market without requiring the ISO consider supporting documentation ahead of time, and represents a dynamic cost adjustment solution. Market participants can submit automated RLCRs requests at any time before the close of the relevant bid window and validation is instantaneous. The ISO limits costs that can be reflected in the market to the reasonableness threshold to prevent overly speculative bidding, and the request is subject to potential ex post audit. Should a scheduling coordinator have supporting documentation pre-market that can substantiate higher costs, they may get those costs validated through the manual RLCR process which does not impose a cost limitation. In either case, any amount requested and not validated pre-market is eligible for after-the-fact cost recovery through the ISO's process (see Appendix for examples).

This policy was designed so that each of the three elements—reference level calculations, the RLCR process, and after-the-fact cost recovery—gives market participants opportunities to reflect a reasonable assumption of cost in the market and guarantee cost recovery for actual costs incurred. This policy depends on the following assumptions:

Reference levels: Reference levels should serve as a reasonable benchmark for a resource's costs. If a resource's costs do not generally correlate well with this calculation, the resource may rely on the cost adjustment process more frequently than the process was intended for.

The RLCR process: If the benchmark is too low, the flexibility offered through the automated process will similarly be more limited than intended. ISO policy today identifies conditions in which the ISO will update the reasonableness threshold to provide more flexibility under unexpected circumstances.

After-the-fact cost recovery: The ISO requires resources request costs pre-market through the RLCR process for those costs to be eligible for after-the-fact cost recovery. This is an important pre-requisite to protect against strategic under-bidding and inefficient commitment, and creates an incentive for market participants to make the request whenever they believe their costs may exceed reference levels. Only actual costs up to the amount requested pre-market can be recovered after-the-fact.

3.2. Feedback from stakeholders and changes from the straw proposal and draft final proposal

Differences in gas systems and gas infrastructure in the regional market footprint introduce challenges in accurately representing fuel costs in reference levels. Stakeholders identified problem statements related to both default energy bids and commitment cost calculations. Stakeholders identified some specific scenarios that enhancements should accommodate:

Example 1: A resource facing frequent gas burn limitations imposed by the gas pipeline must resolve their imbalances by securing fuel from a different, more expensive, fuel source than their primary gas hub. The resource must update their default energy bid to avoid being uneconomically incrementally dispatched.

Example 2: A generator's physical location may impact its access to the cheapest source of fuel. A resource may be physically located far from the index gas hub, and/or manage frequent supply disruptions, that cannot be consistently managed by updating the active fuel region in the master file.

Example 3: A lower heat rate, higher cost, resource has historically been scheduled infrequently and in response to unpredictable real-time changes in demand. The resource's cost expectation, based on experience, reflects same-day gas prices.[9]

[9] Default reference level calculations use indices from the next day gas day. The ISO may update the reasonableness threshold in real-time if same-day gas indices increase by more than 110% relative to the next day index. However, default and day-ahead reference levels may not provide sufficient flexibility to accommodate resources' cost expectations associated with intra-day fuel procurements under those conditions.

To address these challenges, potential enhancements were identified in the stakeholder process to each of the three elements of the process for accommodating gas cost variation.

Fuel cost parameter enhancements: The straw proposal identified three approaches for customizing the fuel cost parameter of reference levels—a negotiated option, a pre-defined blended fuel region formula, and a multiplier applied directly to the GPI—and sought stakeholder feedback to identify which approach offers the most value. Stakeholder feedback did not indicate clear alignment on any single option. The proposal in Section 3.3 below incorporates stakeholder feedback on what characteristics of each of these three options would be most valuable into a single approach that reflects elements of each.

This Final Proposal clarifies the process for a SC to request a GPI adjustment to their default reference levels. In response to stakeholder feedback, the ISO will offer additional flexibility for resources to request adjustments every four months.

Flexibility under exceptional circumstances: In the straw proposal, the ISO considered stakeholder recommendations to provide more flexibility for cost adjustments in conditions like extreme weather. The ISO proposed, as an alternative, flexibility to accommodate conditions in which uncertainty around gas procurement targets could be costly to accommodate.

The Final Proposal includes minor clarifications that respond to stakeholder feedback on refining the trigger for additional flexibility and monitoring.

After-the-fact cost recovery: Stakeholders support the rule in the straw proposal. The proposal in Section 3.5 defines terms and offers examples.

The final proposal includes minor clarifications but otherwise does not have any changes to the policy proposed in the draft final proposal.

3.3. Default GPI adjustment process

Default reference level calculations should cover fuel costs that are observable under regular conditions. The GPI should consistently serve as a reasonable resource-specific cost benchmark, and the default multiplier should cover most observable volatility based on that fuel cost assumption. Exceptional circumstances, like winter storm events, occur infrequently and can be unpredictable but the reference level change request process was designed to give resources additional flexibility to update their reference levels when unusual circumstances cause fuel costs to exceed their default reference level calculations. By design the RLCR process should be utilized infrequently so that the verification and audit of fuel cost information can be done in a timely manner.[10]

[10] Both the automated and manual RLCR options require manual work for both the market participant and the ISO. Regardless of which option a market participant choses, they must be able to support the higher cost with documentation which is subject to review via pre-market validation, post-market audit, or considered through the after-the-fact cost recovery process.

These design principles largely hold for gas resources in the ISO BA. ISO BA resources have enough flexibility to manage their fuel costs under normal conditions, and use the RLCR process primarily to accommodate situations like unplanned outages and winter storm events. The ISO originally set and supported the default reference level multipliers—110% for DEBs and 125% for commitment costs—by evaluating volatility relative to gas price indices for PG&E Citygate and SoCal Citygate. Based on historical fuel cost data, these threshold values have been observed to cover 90-99% of volatility.[11] Outliers represent exceptional circumstances that resources should manage using the RLCR process.

Outside of the ISO BA, gas resources can face fuel cost volatility due to circumstances endemic to their fuel supply arrangements. Most gas hubs are less liquid and more volatile than PG&E and SoCal Citygate, and differences in physical infrastructure drive gas system constraints that can limit a resource's access to the cheapest source of fuel. The ISO calculates reference levels for these resources using their resource-specific fuel region, which includes a GPI for next day gas trading at the gas hub in their fuel region.[12] However, the additional 110%/125% default multipliers may not capture the fuel cost volatility these resources experience relative to those indices as well as they do for resources served by PG&E Citygate and SoCal Citygate. The volatility driven by illiquidity and regular system constraints, more than what resources in stable conditions must manage, should also be captured in default reference levels.

The GRM working group and policy development process evaluated analysis to support additional flexibility but found that this information has some critical limitations. Hub-level next-day gas price volatility data does not, and cannot, show how resources that purchase fuel from the same hub may systematically experience different costs due to the resources' physical and operational characteristics and alternative supply arrangements. Without resource-specific information about how these resources are situated, it cannot be decisively concluded that their default reference levels are consistently accurate. Therefore, potential solutions to leverage resource-supplied cost information were considered in the stakeholder process.

The ISO also considered how market participants in the ISO BA versus the WEIM have historically made use of the flexibility available. In response to this analysis, stakeholders highlighted the need to consider how characteristics of WEIM-only market participation can mask how volatility impacts their costs. WEIM resources submit economic bids to offer incremental imbalance capacity, but if they're already online in the base schedule they have no incentive to update their commitment cost information in the market. In EDAM, these resources will have to adjust their commitment cost offers and the full range of their energy capacity. Under the same cost circumstances, they may face new challenges with bidding flexibility due to this shift to full economic participation. Increasing flexibility without sufficient supporting evidence is not appropriate, but it is prudent to have solutions in place that will facilitate a rapid response to changes in market participation.

[11] DMM cites analysis supporting this figure in multiple publications including the 2019 Annual Report on Market Issues and Performance and in comments on the CCDEBE policy initiative process

[12] Scheduling coordinators can request a custom fuel region or assign an existing fuel region to their resources via the master file. This process is described in Section 3.1 in this section, as well as in the BPMs for Market Instruments Attachment C.

This final proposal includes a process, the default GPI adjustment process, for a resource to request that the ISO consider their specific cost conditions and, where additional flexibility can be supported by data, directly adjust the GPI the ISO uses to calculate a resource's reference levels. SCs should use the RLCR process to update their resources' cost information in the market if expected or actual costs exceed ISO calculated default reference levels. SCs should use the proposed default GPI adjustment process if they rely, or expect to rely, on the RCLR process for costs they have historically faced and will continue to face regardless of exceptional circumstances. The GPI adjustment in this proposal will give a resource more flexibility by default to cover regular cost volatility driven by the innate and observable characteristics of the resource's fuel supply arrangements.

The proposed default GPI adjustment will also apply to a resource's reasonableness threshold calculation, effectively scaling the reasonableness threshold relative to the resource's cost conditions. This supports the ISO's ability to treat all resources equitably by offering a consistent level of flexibility through the automated RLCR process relative to a resource's default cost assumptions. Without this feature, the flexibility a resource would gain by default would represent a trade-off with the flexibility they have to request expected costs through the automated process which is not the intent of this policy. This proposal does not consider how and when to offer additional flexibility to validate costs through the automated RLCR process.[13]

3.3.1. Process overview

This proposal has two distinct steps: a GPI adjustment application and a GPI adjustment determination. The GPI adjustment determination will require the ISO to manually review and verify fuel cost information, so the application serves as a check-point to ensure the review process is feasible and meaningful.

A SC should submit a **GPI adjustment application** to initiate the process that specifies the applicable resources the adjustment will apply to. The ISO will provide a standard template for submitting the GPI adjustment application. The template will provide instructions with data and documentation requirements. The ISO will work with stakeholders to develop clear standards for documentation submittal through the BPM process. The ISO will only move forward with applications that meet two

[13] The proposal in this section considers whether a resource needs more flexibility to ensure their default cost assumptions reflect their regular cost conditions in the market consistently, but the ISO still expects resources to use the RLCR process in exceptional circumstances. Therefore it is not necessary to consider whether or not cost adjustment requests have been accepted ex-ante or required after-the-fact cost recovery to meet the objective of this policy. However, stakeholders also discussed whether increasing the reasonableness threshold to increase the range of potential costs that could be validated pre-market through the automated RLCR process would be warranted. This might be a reasonable consideration under conditions in which the ISO has historically observed after-the-fact cost recovery. For example, the ISO's "Adjustments for Persistent Conditions," described in section 30.11.1.4. of the ISO's Tariff, allows the ISO to adjust a resource's reasonableness threshold if a resource systematically relies on after-the-fact cost recovery. Changes to the fuel volatility scalar would apply to all gas resources, so the ISO would look for evidence of wide-spread extreme volatility. To that end, the proposal in section 3.4 of this paper considers when it may be appropriate to expect resources will rely on the automated RLCR process to reflect same-day gas costs.

primary requirements which, if met, serve as a demonstration that a GPI adjustment is verifiable and could meaningfully improve a resource's ability to participate in the market.

First, the application must show that the resource's historic costs fell outside the range of their default reference levels more frequently than they do for a resource in stable gas conditions. This requirement uses the benchmark approach, described in the draft final proposal, to define a minimum threshold value, i.e. minimum number of trade-days with observable volatility, an application must meet. How often it may be appropriate for a resource to rely on the RLCR process may differ for differently situated resources. The frequency defined in this pre-requisite is not intended to prescribe a certain outcome but instead indicates that a deeper understanding of a resource's costs is warranted. This pre-requisite is described in greater detail in section 3.3.3.

Second, the SC will be responsible for supporting the application with scenario-specific data and documentation. The SC will have the opportunity to specify how a resource's cost conditions differ from their default assumptions. The application will offer specific scenarios that describe cost conditions that the ISO understands existing tools do not accommodate, and identify the information requirements the ISO will need to verify that a resource faces those cost conditions. These scenarios and documentation requirements will be detailed in the BPMs. SCs will be responsible for supporting the application with required information and documentation upfront to demonstrate that, if approved, the cost conditions they have specified can be verified.

If the ISO accepts a GPI adjustment application, the ISO will move forward with the **GPI adjustment determination**. If the application is approved, the ISO will verify whether the data and documentation included in the application supports the scenario identified in the application. The ISO will use information provided through the application as well as relevant data the ISO has on record and can access through commodity price vendors[14] to configure the GPI adjustment associated with the resource's verified cost conditions.

The ISO will implement successful GPI adjustments by applying a multiplier to the primary fuel hub assessed through this process when the fuel region with that hub is active in the master file. The GPI adjustment will be available to the specific resource(s) identified in the application. The SC can request the ISO consider an application for the same resource(s) again after four months, or if there is a qualified change to how the resource is managed.[15]

This process threads the needle between the programmatic[16] and negotiated solutions recommended by stakeholders. A programmatic approach would give market participants a single, pre-defined alternative to the single fuel region option which they could use if their fuel cost information supports it.

[14] The ISO gets commodity price information from ICE, SNL Energy, NGI, and Platts.
[15] For example, the ISO requires review of the negotiated DEB option under certain circumstances like a change in scheduling coordinator or resource characteristics (see BPM for Market Instruments attachment D section D.6.6.). The ISO will similarly detail the qualified conditions for GPI adjustment re-assessment within the four month time period in the BPMs.
[16] The programmatic option stakeholders considered during policy development was a "blended fuel region." Would require a market participant to provide the ISO with data and documentation to verify and inform

This approach offers transparent rules and expectations, but would not solve the problem for different, unique circumstances. A negotiated option gives market participants the opportunity to work with the ISO to customize a solution. This approach is valuable where finding the right solution requires discretion; stakeholders comment that the flexibility of this process valuable but can be onerous and opaque. The proposed GPI adjustment process gives market participants the opportunity to choose from pre-defined scenarios that represent different situations in which market participants face costs consistently that cannot be managed consistently using existing tools. The ISO will follow a standard procedure for evaluating cost information and configuring the specifics of the adjustment. This offers market participants transparency and fair expectations but gives the ISO some necessary discretion to ensure the ISO is able to provide sufficient flexibility to accommodate unique and/or bespoke fuel supply arrangements.

3.3.2. Timing and eligibility

The ISO will only consider gas-fired resources through this process. Resources are eligible based on the technology and fuel type registered in the master file.[17] Because this process is intended to be useful for both DEBs and commitment cost reference levels, a resource's active DEB type will not preclude the resource from eligibility but a GPI adjustment resulting from this process can only be applied to the variable cost DEB option and the proxy commitment cost calculation. The ISO will not modify or override other DEB options.

The ISO will consider applications first-come first-served and on a rolling basis.[18] If a resource's application is rejected, the resource will be eligible for re-consideration through this process after four months to ensure resources have the opportunity to provide new information about seasonal variation, for instance in advance of the next summer or winter. This limitation will have no impact on a SC's ability to use other tools such as the RLCR process or existing negotiated options.

The ISO will consider relevant data and documentation from a 12 month period. The historic perspective is important because the goal of this policy is to identify, and provide flexibility for, costs inherent to a resource's fuel supply arrangements. Characteristics like illiquidity and limited access to gas storage are not mercurial characteristics but instead impact fuel cost volatility pervasively. The ISO expects to see more frequent volatility and/or more frequent use of the RLCR process if these conditions have a material impact on costs in conditions other than exceptional circumstances. However, the ISO can accommodate adjustments that are specific to a narrow time period like seasonal variation, or changes to underlying fuel supply conditions that will impact their costs moving forward.

[17] Hybrid resources that include a gas-fired generation component are not eligible through this process. Multi-stage generators are eligible and any adjustment that results from this process would apply to all configurations associated with the resource ID identified in the application.
[18] The ISO is not proposing a specific deadline at this time, but may implement a quarterly schedule if implementation challenges arise.

As described further below, some rules and requirements will differ depending on whether a resource has had the opportunity to use, and experience using, existing tools to manage their costs. The ISO will characterize a resource as one of the following categories when they apply:

1) **Experienced market participants**: A resource will be considered an experienced market participant if they are a WEIM resource with at least a year of experience in the WEIM, or an EDAM resource with at least a year of experience in EDAM. The ISO expects these resources to have a history of RLCRs and/or after-the-fact cost recovery when their costs have exceeded the default assumption in their reference levels.

2) **New EDAM entrants that were previously WEIM-only**: If an existing WEIM resource submits an application during EDAM onboarding or within their first year in EDAM, the ISO will consider the resource a new EDAM entrant. While they have a year of cost data related to their market participation, these resources are different from experienced market participants because the way they participate in the market changes within the year under consideration. Based on stakeholder feedback, the ISO understands that these resources may not have experience using existing tools as WEIM market participants even when their costs have exceeded their reference levels.[19] The ISO will not require these resources to include a history of RLCRs to support their application. Rather the ISO will determine if a GPI adjustment is necessary to capture the costs resources are regularly exposed to.

3) **New market participants:** The ISO will consider a resource to be a new market participant if the resource has less than a year of market experience in the WEIM and EDAM. This applies to new WEIM-only resources, and new EDAM resources that were not previously WEIM-only. Resources in this category do not have to provide a full year of data but will otherwise be subject to the same data and documentation requirements as new EDAM entrants.

[19] The ISO discussed with stakeholders an analysis of WEIM commitment cost bidding that shows WEIM resources generally do not use the full flexibility provided by default, and use relatively less of the available flexibility than ISO BA resources do in regular conditions. In response, stakeholders noted that the analysis includes resources that are online in the base schedule and therefore do not need to submit RLCRs to update their reference levels. Based on this feedback, the ISO agrees with stakeholders that a WEIM entity's bidding behavior should not preclude an SC from seeking additional flexibility to support full economic participation in EDAM. The ISO does not believe it is appropriate that any market participant should be forced to choose between market participation and a period of increased liability wherein their costs cannot be accurately represented.

3.3.3. Minimum Threshold Requirement

This section clarifies the intent of using a benchmark, described in the draft final proposal,[20] as a minimum threshold requirement.[21] Meeting this requirement does not guarantee that the ISO will ultimately find that additional flexibility is verifiable and appropriate, but instead demonstrates that additional flexibility has the potential to meaningfully improve the accuracy of a resource's reference levels.

The purpose of the GPI adjustment itself is to give a resource enough flexibility by default that their default reference levels cover the costs associated with the predictable characteristics of the resource's fuel supply arrangements, and that the resource only needs to rely on the RLCR process in exceptional circumstances. The ISO is proposing to use the RLCR history of resources whose cost conditions are known to be consistently stable, i.e. the stable benchmark, as a proxy for exceptional circumstances. If a resource relies on RLCR process more often than resources in stable conditions, this indicates that some costs above their default calculations may have been driven by conditions related to regular characteristics of their fuel supply arrangements in addition to those costs driven by exceptional circumstances.

The minimum threshold value will reflect the number of days in a year that resources in the stable benchmark[22] relied on the RLCR process. Insofar as resources in other parts of the region experience more volatility than resources in the stable benchmark, the additional volatility by comparison indicates that an adjustment may be necessary to ensure their default reference level calculations cover additional volatility. The ISO will not consider a GPI adjustment for a resource that relies, or expects to rely, on the RLCR process less frequently than resources in stable conditions because this indicates that their default reference level calculations are a reasonable reflection of their regular costs.

The ISO proposes using ISO BA resources mapped to PG&E Citygate and SoCal Citygate as the stable benchmark. These resources have gas storage infrastructure and participate in relatively liquid gas markets. Using these resources as the stable benchmark is consistent with stakeholder feedback that gas supply conditions outside of the ISO BA are more challenging and may warrant additional flexibility to achieve equitable outcomes. ISO BA resources rely on RLCRs infrequently and in exceptional circumstances like unplanned outages and winter storm events,[23] but their costs are otherwise covered by default.

[20] See section 4.3.1. of the GRM Draft Final Proposal.
[21] This concept is similar in principle to the minimum cost threshold for cost adjustment requests through the manual RLCR process, described in Tariff section 30.11.4.1., which ensures that the costs under consideration would otherwise not be covered.
[22] Including resources in more volatile conditions in the benchmark would effectively raise the minimum threshold requirement. Including resources in the benchmark that manage more volatility due to differences in storage infrastructure or other regional pipeline characteristics could preclude those same resources from meeting the eligibility requirement.
[23] The ISO discussed analysis of the frequency with resources requests cost adjustments in the gas resource management working group (January 25, 2024) and included this analysis in the issue paper and straw proposal: https://stakeholdercenter.caiso.com/InitiativeDocuments/Presentation-GasResourceManagement-Jan25-2024.pdf

The GPI adjustment application will give the SC an opportunity to identify the specific trade-days they want to ISO to consider through this process. For the trade-days identified, all applicants are required to include their marginal costs as the maximum purchase price for fuel supporting commitments on that trade-day. SCs will also be responsible for providing documentation that the ISO can use to verify those costs if the application is accepted. The SC will not be required to provide cost information for each trade-day within the year previous, but the ISO will only consider trade-days when the max fuel price exceeded the ISO calculated cost assumption and for which the SC has included the required data and documentation toward the minimum threshold requirement.

For experienced market participants to meet the minimum threshold requirement, the ISO will only count trade-days where costs are supported by a successful RLCR and/or after-the-fact cost recovery. The ISO acknowledges that resources with limited experience with the RLCR process, i.e. new EDAM entrants and new market participants, may not have used the RLCR process but nonetheless may require additional flexibility to prevent future issues from arising. Therefore, the additional data and documentation requirements differ depending on a resource's market experience.

a. Calculating the minimum threshold

The minimum threshold will reflect the benchmark group's cost adjustment history as a weighted average[24] of the number of trade-days on which resources in the benchmark group use the RLCR process over a given year. The benchmark group will contain resources mapped to the PG&E and SoCal Citygate gas hubs. The ISO has the discretion to exclude from the benchmark group resources with certain types of reference level modifications—i.e. negotiated DEBs, persistent conditions adjustments, or adjustments applied through this process – to preserve the usefulness of the benchmark as a reflection of resource behavior under normal conditions.

The ISO will calculate a threshold value for the same time period that an application considers. For example, if an application includes data for the year from November 2024 to November 2025, the ISO will calculate minimum threshold value that reflects cost adjustments for the same 12 month period. The ISO will not publish the threshold value prior to receiving an application.

To come up with a weighted average, the ISO will first summarize the RLCR history for resources in the benchmark group. The ISO will count the number of trade-days per year each resource used the RLCR process successfully. Any type of successful request—automated or manual RLCRs, validated ex-ante or capped—indicates a day when a resource's costs exceeded the ISO's default calculations. The ISO will consider:

- Cost adjustment requests made for both day-ahead and real-time reference levels,
- Cost adjustment requests for the DEB, commitment costs, or both,
- All automated cost adjustment requests excluding those that failed an audit; this includes all automated cost adjustments accepted below the threshold, and capped at the threshold,

[24] Using a weighted average will ensure that a resource mapped to either of these hubs has an opportunity to be considered for default GPI adjustment if they request cost adjustments more often than the average.

- Manual cost adjustment requests validated ex-ante, plus manual cost adjustment requests not validated pre-market but associated with successful after-the-fact cost recovery, and
- Successful after-the-fact cost recovery related to a physical supply disruption as proposed in section 3.5.

The ISO will treat each day with a successful request consistently, regardless of the size of the cost adjustment request relative to the ISO calculated reference level. To avoid double counting, the ISO will count each trade-day with at least one cost adjustment from the list above once. The ISO will apply these same standards to evaluating applications from experienced market participants, described further below.

a. Minimum threshold requirements for experienced market participants

The ISO expects experienced market participants to use the RLCR process if their costs exceed their default reference level calculations. The ISO will only count days on which the SC submitted a RLCR and/or successfully sought after-the-fact cost recovery for their costs that day, based on the same list of criteria as the ISO will use for the benchmark group.

The ISO will compare the count of trade-days on which the applicant used cost adjustments to the minimum threshold. If the applicant's RLCR history exceeds the threshold, the ISO will consider the requirement met. If the applicant's RLCR history is below the threshold, the ISO will reject the application. For example, if the minimum threshold is cost adjustments on 10 days over a 12 month period, the ISO will reject applications where the resource relied on cost adjustments on less than 10 days for the same period. The ISO will only consider days when there are cost adjustments; if a resource identifies max fuel costs in their application that exceeded their default calculation but did not submit a RLCR for that trade-day, the ISO will not count this toward the Minimum threshold requirement.

Using the RLCR history aligns outcomes with existing standards and practices. RLCRs and after-the-fact cost recovery are already subject to audit and/or manual review to ensure these costs reflect reasonable and prudent procurement practices.[25] The ISO will require the SC to include supporting documentation that the SC is required to retain for all automated RLCRs[26] that have not been audited. To avoid conflict with the audit process described in the tariff, the ISO will not audit this information through this process but will continue to audit this information through the existing audit process.[27] The SC can, but is not required to, include supporting documentation for requests previously verified by the ISO—this includes manual RLCRs verified pre-market, audited automated RLCRs, and successful after-the-fact cost recovery. If the SC does not include supporting documentation for previously verified cost adjustments, the ISO will use the documentation on record.

[25] See Tariff section 30.11.2.2 Requirements for reference level change requests
[26] See Tariff Section 30.11.3.3 Contemporaneously Available Supporting Documentation
[27] This requirement does not effect any potential rights, obligation, or consequences pursuant to Tariff section 30.11.3.5.

b. New EDAM entrants and new market participants

The ISO does not expect that new EDAM entrants or new market participants will have requested cost adjustments for all costs that exceeded their default reference levels but will still require evidence that these resources experienced volatility more frequently than the benchmark. The ISO will count trade-days when the max fuel cost exceeded the ISO's default calculation and for which the SC has included supporting documentation to verify those costs.

3.3.4. Scenario requirements and adjustment methodology

The SC must specify the basis for their application by choosing a pre-defined scenario that describes how their cost conditions differ from the default assumptions in their existing reference level calculations.[28] The purpose of this requirement is to ensure that the basis for the GPI adjustment request aligns with the policy's objective, and to provide a clear set of expectations for how the ISO will verify cost information and assess the appropriate amount of flexibility. Because it may not be appropriate to cover all observed volatility by default,[29] the scenario specification will help the ISO determine how much of the observed volatility a resource's default reference levels should account for. Appendix B describes examples of the scenarios the ISO has discussed with stakeholders.

Each scenario will have related data and documentation requirements, and the SC will be responsible for ensuring these requirements are met. If an SC does not include all required information, the ISO will reject the application. To meet this requirement, the ISO will simply confirm that the required information is included. The ISO will not review this information until the application has been approved and moves into the adjustment determination process. This requirement will ensure the ISO can consider all applications with the same consistent standards and, if approved, proceed with the GPI adjustment determination without having to seek out additional documentation.

The ISO will work with stakeholders to define these scenarios, and provide clear expectations for data and documentation submittal, in its BPMs.

3.3.5. Default GPI adjustment determination

If the ISO accepts an application, the ISO will proceed with the GPI adjustment determination process. A GPI adjustment through this process may not cover all potential cost exposure but will target costs where documentation supports a reasonable expectation that these costs are related to a resource's regular fuel supply conditions.

How the ISO evaluates cost information and configures a GPI adjustment will depend on a resource's specific fuel supply arrangements. The ISO will review supporting documentation to ensure it meets

[28] The ISO will not consider an "other" or customized category but is open to considering additional scenarios with stakeholders through the BPM process.

[29] The ISO discussed with stakeholders whether a pre-defined threshold, like a percentile range, would be appropriate for prescribing how much volatility should be covered by default. However, the ISO determined that resource-specific fuel supply conditions and different ranges of fuel costs require a more tailored approach. The gas resource management issue paper appendix A describes methodologies used by the ISO and DMM to evaluate reference level threshold values based observable volatility in previous policy initiatives.

standards for verification, and evaluate what flexibility adjustment is appropriate in the context of the scenario identified in the application. If the cost information does not support the scenario identified in the application, they will not receive a GPI adjustment.

An adjustment will consider volatility relative to a fuel hub and apply to the commodity price index of the fuel region that includes that fuel hub. When the fuel region is active in the master file, the adjustment will effectively apply to the variable cost DEB, proxy commitment cost calculation, and the reasonableness thresholds for both, as illustrated in Figure 3 below.

Figure 2 Example fuel cost adjustment parameter applied to DEB and commitment cost reference levels

	ISO Calculated Gas Price Index (GPI)		Resource Requested Fuel Cost
	Default Calculations *safe harbor*	**Reasonableness Threshold** *ISO validates automated reference level change requests up to:*	
Energy Bids	[unit fuel requirement * (GPI *N% + transportation)] ***110% DEB multiplier**	The variable cost DEB calculation with an additional fuel cost volatility multiplier [• GPI *N% * 110% fuel volatility scalar *on days with a published gas index price, or* • GPI *N% * 125% fuel volatility scalar *on days without a published gas index price*] * **110% DEB multiplier**	The ISO recalculates all reference levels using approved fuel costs but does not include the multipliers
Commitment Costs	[unit fuel requirement * (GPI *N% + transportation)] * **125% commitment cost multiplier**	Proxy commitment cost calculation with an additional fuel cost volatility multiplier [• GPI *N% * 110% fuel volatility scalar *on days with a published gas index price, or* • GPI *N% * 125% fuel volatility scalar *on days without a published gas index price*] * **125% commitment cost multiplier**	
		Automated RLCR Process	**Manual RLCR Process**

For example, an application identifies 20 trade-days on which default calculations did not cover a resource's costs. Based on an applicant's chosen scenario, the ISO is able to verify that the costs on 10 of those trade-days should be covered by default and that the GPI multiplier should be 160% as referenced to the GPI, to cover those costs. The ISO would determine and N value such that: GPI * N% * 125% = 160% * GPI. In this example, the ISO would apply a 128% multiplier to the fuel region GPI.

3.4. Flexibility to manage fuel procurement uncertainty

The proposal in this section was developed to address 'exceptional circumstances' in which the ISO can anticipate gas resources will need additional flexibility to request cost adjustments. Stakeholders commented that unexpected changes to system conditions can lead to "everyone moving in the same direction"[30] when market participants do not nominate enough gas during the Timely gas cycle to meet higher than expected DA *and* RT commitments. Higher demand for same-day gas supply can lead to limitations on imbalances, and premiums and illiquidity in same-day gas markets. Therefore, this proposal focuses on identifying circumstances in which gas generators face more uncertainty than usual.

As a general principle, gas resources either need more certainty for fuel procurement or more flexibility to manage uncertainty related to fuel procurement. Section 5 focuses on offering more certainty for fuel procurement during the Timely gas nomination cycle through improvements to D+2 advisory information. Stakeholders have commented that advisory information is only useful if they have confidence in using the information as a fuel procurement target, and the D+2 assessment in the Straw Proposal[31] indicates market participants can expect extreme cases when gas capacity scheduled DA is much higher or much lower than the D+2. This proposal in this section is intended to improve market participants' confidence in using advisory results by offering additional flexibility when advisory results under-estimate gas requirements.

The ISO proposes to give gas resources more flexibility to request cost adjustments when changes between the D+2 and day-ahead market indicate widespread reliance on same-day gas to support both day-ahead commitments and incremental real-time dispatch. The ISO proposes two applications of this policy based on different observable triggers in the sections below.

The targeted nature of this proposal is intended to minimize the potential for unintended consequences. Giving resources more flexibility to seek adjustments for higher expected costs in their reference levels reflects a balancing of competing objectives; while flexibility may be needed to reflect costs, it also risks enabling the exercise of market power. This proposal addresses this concern in two ways. First, a resource must request higher costs through the automated RLCR process which is subject to audit, so resources must retain documentation to substantiate these requests. The ISO does not publish the reasonableness threshold, or notify market participants when it's adjusted, because the ISO expects resources to request cost adjustments whenever their costs are not covered by default and not just when they believe they'll have the flexibility to do so. Second, this proposal narrowly targets conditions in which the ISO believes it is reasonable and prudent for gas resources to rely on same-day gas procurement to support day-ahead commitments. If a resource has perfect information, waiting until same-day might reflect speculative behavior. Absent perfect information, it's reasonable for gas resources to rely on same-day gas to resolve differences in their expected and realized fuel needs. If the ISO's advisory information under-estimates aggregate fuel requirements for the day-ahead market, a day-ahead participating gas resource may not have had a reasonable expectation to procure more fuel

[30] See Gas Resource Management Issue Paper section 4.1
[31] See Section 7.2 in the Appendix of the Gas Resource Management straw proposal

until after the day-ahead market results are published and, if gas resources are systematically under-prepared, will likely encounter more volatility driven by high demand. Because these conditions are explicitly tied to participation in the ISO's markets, the ISO believes it should give resources additional flexibility to ensure they can accurately represent their potentially more volatile same-day costs.

3.4.1. Changes based on stakeholder feedback

Stakeholder comments on the straw proposal highlight a general understanding and appreciation for the goals of this proposal. Stakeholders requested supporting analysis and additional details that can tie the trigger for the proposal to gas market conditions and the resulting increase in the reasonableness threshold.

Directly supporting the specifics of this proposal with analysis today poses challenge because the conditions this proposal considers do not exist today. In today's construct, the ISO only has two-day ahead data for the ISO BA. There is no similar data for future EDAM areas and CAISO will be unable to calculate this retroactively.[32]

Future analysis should support the usefulness of BAA-level forecast differences as an indicator of D+2 to DA changes, and how changes in BAA-level forecast differences correlate with both next day and same-day gas market conditions.

3.4.2. DA and RT adjustment

The ISO proposes to increase the reasonableness threshold for the day-ahead market when the ISO observes forecasting changes that indicate day-ahead market gas schedules will be greater than the D+2 advisory. This proposal is intended to give resources more flexibility to reflect the expected cost of supporting day-ahead commitments with same-day gas when the ISO expects higher than usual demand for same-day gas.

The ISO proposes to use observable changes in market inputs like demand and variable energy forecasts as the trigger for additional flexibility. A significant change between D+2 forecasts and forecasts published the morning of the DAM can be used to anticipate when DA schedules may differ from D+2. This information is available to market participants in time for the automated cost adjustment deadline prior to the DA, and in time for the ISO to adjust the DA reasonableness threshold.

Supporting data needed to define the trigger for the reasonableness threshold adjustment and determine how much the ISO should increase the reasonableness threshold does not exist today. Therefore, the ISO is proposing to initially configure the parameters of this policy to zero until the ISO can support this adjustment with data. The ISO proposes to assess new EDAM entrants after the first three months before defining these values and to regularly assess the performance of this policy after

[32] The ISO discusses these differences in the Gas Resource Management Issue Paper Section 4

that. Additional details regarding the increased thresholds will be defined in the ISO business process manuals.

The ISO will consider both market footprint-wide and BAA-level forecasting information as part of the parameter assessment. Both are important considerations given their potential to impact financially binding energy schedules. The ISO will assess both and provide flexibility where appropriate.

3.4.3. RT adjustment only

The ISO proposes to increase the real-time reasonableness threshold when DA energy schedules for gas resources increase significantly over D+2 advisory schedules. This proposal can help anticipate conditions in which resources dispatched incrementally in real-time have to compete with resources committed day-ahead for same-day gas supply. While the proposal in the previous section applies to real-time as well, and should therefore achieve the same goal, this proposal provides a second pass based on realized instead of expected day-ahead market outcomes.

For the RT adjustment, the ISO similarly proposes to assess new EDAM entrants after the first three months before defining these values, and regularly assess the performance of this policy. Additional details regarding the increased thresholds will be defined in the ISO business process manuals.

The ISO will monitor for strategic behavior related to D+2 advisory offers.

3.5. After-the-fact cost recovery rules for constraints and supply disruptions

To be eligible for after-the-fact cost recovery, the ISO requires resources to submit a cost adjustment request ex-ante. This pre-requisite is an important protection against strategic under-bidding. Acknowledging that physical supply disruptions may occur after the ex-ante cost adjustment deadlines, the Final Proposal is to allow resources to demonstrate a physical supply disruption to be eligible for ex-post cost recovery.

The Final Proposal includes the following guidelines and conditions:

1. A resource must demonstrate to the CAISO that a physical supply disruption occurred after the close of the relevant bid window, and that it restricted access to delivery during the time period relevant to the cost recovery request.
    a. A physical supply disruption is defined as a reliability event that alters normal pipeline operations in a way that restricts primary and/or secondary delivery or receipt contractual rights. Examples include:
        i. Maintenance—when notified after the cost adjustment deadline
        ii. Unusual operations—events that change the normal flow direction
    b. Physical disruption must have occurred on the pipeline/fuel region actively indexed in the resource's reference levels.

c. Demonstration should be supported by information publicly noticed by the pipeline and include a timestamp with effective start and end. A screenshot of the public notice is acceptable, as long as it directs the CAISO to where the information can be confirmed.

2. The resource must provide the ISO with documentation supporting actual fuel costs that exceeded costs reflected and recovered through the market. The ISO is not proposing any changes to the existing expectations for procurement standards and cost documentation supporting cost recovery requests.[33]

This proposal narrowly expands the opportunity to seek recovery for costs for which a resource would not have had a reasonable basis to request a cost adjustment pre-market. All other pre-requisites and requirements related to the after-market cost recovery process, detailed in the BPM for market instruments attachment O.3, will remain the same.

3.6. Interface enhancements for the automated reference level change request process

Stakeholders recommended the ISO enhance SIBR, the platform through which SCs can use the automated RLCR process, to make it easier for SCs to submit automated cost adjustments. The ISO reiterates the principle that market participants should have an incentive to update their bids in advance of market runs with accurate and up-to-date information,[34] and therefore looks to enhance the process to not impede their ability to do so. The Final Proposal includes a commitment to identify and implement changes to SIBR that will minimize the burden on SCs to submit updated cost information. Per market participant request the ISO will make available staff and a testing environment to identify potential enhancements. The ISO will partner with stakeholders to ensure proposed enhancements are defined and prioritized through existing ISO processes.

4. Managing gas burn limitations

Gas pipeline operators are responsible for managing gas system reliability. They monitor planned and expected demand for gas against gas nominations to keep the pipeline pressure balanced. If there are imbalances between nominations and demand, the pipeline may notify gas electric generators and specify what type of action they should take to resolve the imbalance. They may impose limits on gas generators' ability to inject or withdraw gas outside of their timely nominations to ensure gas system reliability.

[33] See details, see BPM for Market Instruments Attachment O.3 After-Market Cost Recovery Process
[34] Pre-market cost adjustment requests are an important pre-requisite for the ISO's after-market cost recovery process, and data on when requests have been accepted ex ante or at the threshold is valuable for continued assessment of ISO processes.

The ISO held a public workshop on August 13, 2025[35] to discuss expected market participant behavior and gas-electric coordination efforts that occur under normal conditions and during conditions that threaten gas and electric system reliability. During this workshop, the ISO emphasized that electric market policy should not negatively impact gas system reliability. Therefore, resources cannot update their reference levels to reflect or recover penalties associated with gas pipeline limitations. If a resource faces fuel supply concerns, they should reflect this in the market by submitting an outage card.

Gas resources are responsible for appropriately responding to gas pipeline communications to support gas system reliability, and for reflecting those actions in the electric market to support electric market efficiency. The ISO expects gas resources to reflect the cost of managing gas burn limitations through their bids and reference levels. Resources may need to adjust their reference levels to reflect the prevailing, or expected, cost of securing additional nominations or alternative sources of fuel to avoid withdrawing gas beyond what the pipeline specifies. Proposed enhancements to the RLCR process—that the ISO and stakeholders developed as part of this stakeholder process—support additional flexibility where the cost of managing gas burn limitations frequently exceeds default reference levels.

A gas system limitation that threatens both gas and electric system reliability requires gas-electric coordination. The reliability function of a BA is responsible for coordinating with gas pipeline operators to develop plans for mitigating these types of situations. The ISO, in its role as a regional market operator, can coordinate with any BA and gas pipeline operator to ensure the market reflects emergency operating procedures through bids or outages within established market timelines.

During the public stakeholder workshop, the ISO discussed how a gas nomogram constraint allows the market to reflect anticipated gas system limitations. Currently, the ISO has authority to implement a gas nomogram constraint for Southern California Gas Company (SoCalGas) and San Diego Gas & Electric (SDG&E).[36] However, while the ISO can coordinate with any BA and gas pipeline to determine the need for market operator intervention, the ISO does not have similar authority to enforce a gas nomogram constraint when the need arises. Stakeholders support making this tool available should a BA and gas pipeline's emergency response plan require this type of electric market intervention.

4.1. Proposal for use of the gas nomogram constraint

As it does today, the ISO market operator will coordinate with gas pipelines and BAs to support reliability when both gas and electric system reliability are threatened. Prior to establishing a gas-electric coordination protocol, the ISO market operator collaborates with a BA and gas pipeline to determine if gas-electric operating procedure involving the ISO market operator is appropriate. The ISO

[35] Gas resource management technical workshop (August 13, 2025). https://stakeholdercenter.caiso.com/InitiativeDocuments/Presentation-Gas-Resource-Management-Aug-13-2025.pdf

[36] ISO Tariff section 27.11 Natural Gas Constraint

will continue to assess the need for a new gas constraint nomogram with BAs and gas pipeline operator as part of it's reliability responsibilities. The ISO market operator and gas pipeline in consultation with the relevant BA may identify the need for a new gas nomogram constraint and establish gas-electric coordination protocol for implementing the constraint in the BA's emergency operating procedure for gas-electric reliability.

In the Final Proposal the ISO seeks authority to file with FERC for tariff authority to activate a gas nomogram constraint where new operating procedures for gas system reliability are consistent with the FERC approved gas nomogram constraint in the SoCalGas and SDG&E gas regions (described in Section 4.1.2). The ISO is not otherwise proposing any changes to existing market design or provisions.

4.1.1. Regulatory considerations

In 2017, the ISO proposed to make permanent certain mitigation measures to manage physical gas constraints. As part of that proposal, the ISO sought tariff authority to implement a gas nomogram constraint within the ISO BA and WEIM BAs as a market tool, but not explicitly for reliability. The proposal gave each BA deference and discretion to develop a gas nomogram constraint without specifying the procedure for informing the constraint. For a new constraint applying to the ISO BA, the ISO proposed to give market participants opportunity for review through a stakeholder process.

FERC's order rejected this proposal and cited a number of concerns with using the gas nomogram constraint as a market tool.[37] For example, FERC raised a concern that the tool would be used for situations where responsible bidding and contracting for natural gas supplies would be appropriate. FERC also noted that the procedure relies on extraordinary intervention which is only appropriate in certain exceptional circumstances. FERC did not specify the precise procedural expectations for a successful market policy but instead identified gaps in the ISO's proposed market rule.

The ISO discussed the following questions with stakeholders during the public technical workshop and recognizes it will need to address them in connection with any proposal to implement additional gas constraint nomograms:

How would a market rule prevent WEIM or EDAM Entities from having too much discretion over the development and enforcement of a constraint or from using a constraint to influence market operations in concert with affiliates to their advantage?

- Would a concern arise with marketing function employees of WEIM or EDAM Entities having access to non-public information about transmission systems; if so, how?
- Do these same concerns exist for the ISO Balancing Authority Area?
- If the market operator rather than the WEIM or EDAM Entity developed a maximum gas constraint with the relevant gas company would this address this question?

How would a market rule ensure that a gas constraint only reflects physical limitations?

[37] *Cal. Indep. Sys. Operator Corp.,* 161 FERC ¶ 61,232 (2017). Microsoft Word - 20171128-3054(32550206) (caiso.com)

- How would the ISO identify a physical constraint on gas pipelines?
- If a public stakeholder process cannot ensure that constraints would only be used for physical limitations, what process is necessary for the market operator to coordinate enforcement of the constraint?

Would enforcement of a constraint mitigate gas supply limitations or adverse electricity market outcomes?

- If a market constraint applies to WEIM participating resources how would it mitigate overall gas supply limitations?
- Would enforcing the constraint avoid the risk of electricity market impacts or frequent manual interventions?

In 2019, the FERC approved the ISO's permanent implementation of measures supporting the ISO's gas nomogram constraint procedure for SoCalGas and SDG&E as a tool to support reliability.[38]

4.1.2. FERC approved application of the gas nomogram constraint for reliability

The ISO market operator uses a gas constraint nomogram as a reliability tool, under a narrow set of conditions. The gas nomogram constraint defined in the emergency operating procedure for managing gas pipeline system reliability with the ISO BA is only used when the electric grid faces a reliability threat. The established operating procedure stipulates the gas nomogram is only available for use in coordination with a gas pipeline entity for which authority and implementation details have been established.

The ISO proposes to coordinate as needed to enforce a new gas nomogram constraint for other gas pipelines under similarly narrow conditions: for reliability purposes, and in a manner consistent with the existing procedure for implementing the gas constraint for SoCalGas and SDG&E. This will require the gas pipeline to establish a relationship with the ISO and relevant BAs, identify conditions that trigger gas system limitation procedures, describe communication and escalation protocols, and show effective collaboration using established coordination tools and procedures.

The gas pipeline defines what qualifies as a gas system reliability event within their tariff. A gas nomogram comes into play when a gas system reliability issue cannot be managed within the energy markets by other standard actions. These events usually impact multiple generating resources and could be too disruptive to handle through bids, manual gas entity interventions, or exceptional dispatch. In these conditions, regular bidding and contracting cannot resolve the underlying operational restriction because the limitation affects deliverability, not price. Without a nomogram, the market could clear schedules that exceed the gas system's deliverability capability, risking curtailments or system imbalance events.

[38] *Cal. Indep. Sys. Operator Corp* , 169 FERC ¶ 61,253, 2019.

Once the ISO, applicable BA, and gas pipeline determine a gas nomogram constraint is needed and have obtained required authorizations to implement the nomogram, the ISO defines the steps that each of the three entities must take to communicate the gas system limitation's expected impact to market participating resources within the relevant market timelines. These steps are described in the BA's emergency operating procedure for gas-electric coordination.

The gas pipeline notifies the ISO to initiate the protocol for activating a constraint; the ISO maintains a nomogram for a zone(s) defined by the gas pipeline and the ISO and BA identify critical reliability units in the impacted zone(s). Because a gas pipeline limitation may impact all resources in an effected area—including both market participating and non-market participating generation—the ISO and relevant BA(s) coordinate with the gas pipeline to identify the resources within that zone(s) that are participating in the market and/or across different BAs. This helps the gas pipeline operator assess how a limitation should be applied, consistently or pro-rata, to all resources in the impacted zone(s). The gas nomogram serves as the tool in the electric market to manage the subset of market participating resources subject to a limitation within the zone(s). The gas pipeline defines the limit and how the limit should be shaped for the duration of the event. Communication within operational timelines is key; the ISO may find that a gas nomogram constraint is not an appropriate response if communications cannot be done within operational timelines.

The gas limitation represents a physical constraint on the fuel delivery system, not a market or economic limitation. However, a gas nomogram constraint has market implications. Constraint enforcement can impact virtual bidding and market power mitigation. When a constraint is enforced and binding, the constraint impacts the congestion component of resource-specific LMPs in the gas constrained area.[39] Due to the potential for market impacts, the ISO enforces the constraint when it would more effectively manage market dispatch than manual exceptional dispatches the BA would otherwise need to use. Enforcing the constraint allows operators to maximize gas usage while managing transmission constraints on a five-minute basis.

In practice, the gas nomogram constraint used in connection with SoCalGas and SDG&E's system has not had a significant impact on market outcomes. The ISO monitors these impacts and publishes reports publicly when a gas constraint nomogram is enforced. The nomogram constraint is rarely enforced and, of the intervals in which it is enforced, rarely binds.

Only enforcing a gas nomogram constraint as a reliability tool removes the opportunity for WEIM entities, including the marketing function of EIM entities, to influence market outcomes. The gas pipeline identifies the necessary conditions in their tariff, the process for which may involve a stakeholder process as well as regulatory oversight.

[39] Tariff section 27.11. codifies the intention that the price impact of an active and binding constraint is limited to the marginal cost of congestion component of LMPs of only the gas resources affected by the gas system limitation. The ISO discussed how the formulation limits distortions to market outcomes stakeholders during the August 13, 2025 technical workshop.

Communications with the gas pipeline and balancing authority occur solely through the ISO's designated operations and reliability staff, using formal, logged communication channels. Any information exchange related to gas system constraints will be limited to system reliability and operational needs, not commercial interests or bidding strategies. The process is documented through written records of communication (SLIC logs) and decision points to demonstrate compliance with FERC's transparency and independence requirements.

4.1.3. Conditions and guidelines for considering new gas nomogram constraint procedure

Prior to the ISO's seeking FERC approval, a gas pipeline must coordinate with the ISO and relevant BA(s) to determine the need for a gas nomogram constraint, and collaborate in the development of gas-electric coordination operating procedure for reliability. The conditions described below reflect the same process for the ISO's established reliability procedure with the ISO BA, OP 4120.[40] This gas-electric coordination process serves as a necessary pre-requisite for the ISO to consider and request authority to implement a new gas nomogram procedure for a gas pipeline's service area. Meeting these conditions will ensure the requested procedure is a reasonable and feasible approach, that the necessary regulatory requirements are met, and a legal framework is in place to facilitate coordination. The ISO will document this process in further detail in the BPMs and/or operating procedure.

This requirement addresses in part prior FERC guidance by narrowly defining the potential use of a new gas nomogram constraint as a reliability tool consistent with the FERC approved application of a gas constraint nomogram on the SoCalGas and SDG&E system.

1. Establish a relationship between the gas pipeline operator, BA, and ISO

The gas pipeline and BA establish communications necessary to maintain both gas and electric system reliability and protocols for mitigating emergencies that adhere to NERC standards.[41] To meet these standards, the gas pipeline must have an established relationship with the BA, and the BA needs to have communication protocol established with their reliability coordinator and adjacent BAs.

The ISO expects the BA to share the controls it has in place for compliance with the Commission's Standards of Conduct governing communications with its marketing function. The ISO would share this information, as well as the BA's role in a new nomogram procedure, in its filings to FERC.

The gas entity and BA must coordinate with the ISO to ensure proper confidentiality agreements[42] are in place to facilitate information sharing.

[40] OP 4120 is one of the procedural documents that details emergency operating procedures specific to the ISO's BA. Should the ISO establish operating procedure for gas system limitations in coordination with a different BA, those steps will be recorded in an appropriate operating procedure series.
[41] NERC standard for Emergency Preparedness and Operations (EOP-011) and for Communications (COM-003)
[42] This may require tariff revisions) to extend the ability to disclose confidential information with gas pipeline operators to maintain reliable operation of the applicable BAA.

2. Show that a gas system limitation can impact electric system reliability

The purpose of the ISO's gas system limitation response procedure is to ensure both gas and electric reliability to the extent possible. The gas pipeline coordinates with the ISO and BA to define a specific need for an operating procedure that's different from what's expected under normal system conditions.

To identify the natural gas pipeline conditions which would require a pipeline limitation with impacts to electric system reliability, a gas pipeline might take the following steps:

- Identify an existing or expected gas system reliability concern by, for example,
    - Performing studies of gas system conditions, or
    - Responding to regulatory requirements specifying criteria relating to gas operation reliability

- Review existing gas system limitation procedures in response to the conditions specified above with the BA/ISO to determine that conditions cannot be resolved through limitations implemented with individual entities and/or economic redispatch. The gas entity may consider:
    - how gas customer groups are prioritized under gas system limitation procedures, and at what point limitations are applicable to gas generators,
    - if and how gas pipeline zone(s) are defined, how they're used and the intended outcomes, or
    - how resources identified by the ISO and BA are distributed within the impacted zone(s), and determine a gas system limitation approach to ensure all impacted resources are equitably treated.

The BA is then responsible for coordinating with the ISO to record how the gas entity would notify the BA of the issue to determine if impacted units may be needed for local reliability, and what steps they would take to meet reliability requirements under these conditions prior to market operator intervention.

3. Determine that a gas nomogram constraint is a needed and reasonable approach to maintaining reliability in conditions identified above

The ISO activates a gas nomogram constraint to avoid triggering a gas system reliability event that might otherwise require manual intervention by the gas pipeline, as well as manual dispatches from the BA or ISO market operator to ensure electric system reliability.

The gas pipeline, BA, and ISO should show that a limitation cannot be reflected in the market, or managed efficiently manually. For example, they may show that:

- Individual generators cannot reflect the fuel limitations through supply offers, either due to timing concerns or because the limitation cannot be managed at the plant level,

- Given potential gas system limitations, the BA cannot manage BA reliability through out of market actions, outages, or exceptional dispatches[43] and still reasonably meet BAA reliability requirements, or
- The gas entity is unable to efficiently manage the necessary gas system limitations without coordination with a BA, multiple BAs, and/or the ISO.

The ISO will review feedback from the gas entity and BA to confirm that a gas constraint nomogram is a reasonable approach.

The ISO and gas entity must coordinate to ensure ISO market operator actions do not conflict with the gas entity's tariff. If the gas entity must update their tariff to ensure the ISO can take action under the ISO's existing authority, the gas entity should follow any applicable regulatory authority procedure to do so.

4. Confirm that procedure under consideration is consistent with established coordination procedure

Consistency with existing procedures is necessary to ensure the approach is feasible. Gas pipelines can use the ISO's operating procedure 4120[44] as a reference as it describes the coordination between the ISO Balancing Authority and applicable gas entity, and steps to maintain both gas and electric system reliability during a gas system limitation. The ISO proposes to consider implementing procedures that mirror these steps.

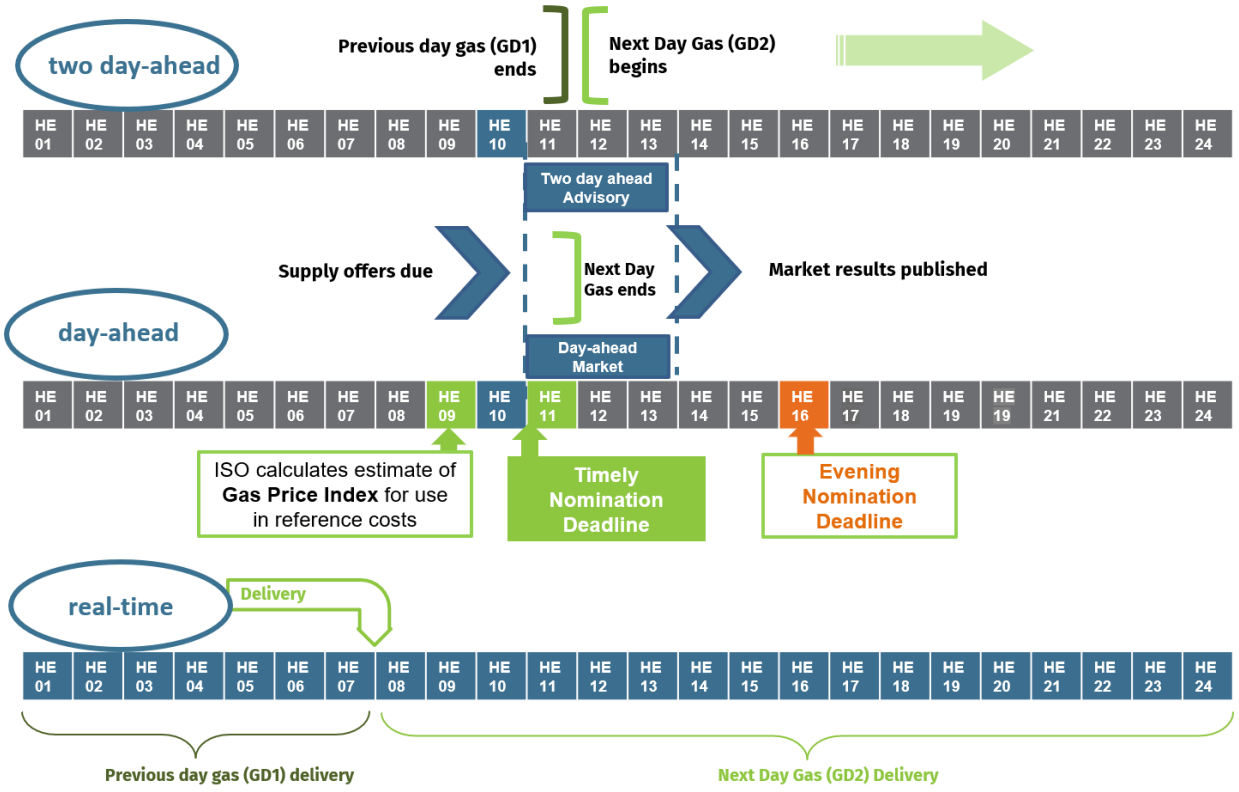
5. Informing Fuel Procurement

Market participants need good information to inform fuel procurement in the timely nomination cycles and avoid relying too heavily on intra-day gas. New EDAM participants will have less visibility into their potential commitments than WEIM-only market participants have today when they are making fuel procurement decisions during the timely gas nomination cycle. EDAM market participants' schedules will be a function of a regional market optimization, rather than a BA-specific next day operating plan.

The Timely nomination cycles closes at 11AM PST prior to flow the following day. The majority of the next day gas purchased is done through the Timely nomination cycle, making it the most liquid market for scheduling coordinators to procure fuel. The timing of the ISO day-ahead market -- opening at 10 AM and publishing at 1 PM PST -- does not provide market participants a fixed energy schedule to inform fuel purchases before the close of the Timely nomination cycle.

[43] The BA is responsible for out of market actions within the BA but the ISO may be involved insofar as managing the limitation involves exceptional dispatches across the regional footprint.
[44] Operating Procedure 4120, "Gas Transmission Pipeline System Limitations or Outages". Link to version 8.0, effective date February 05, 2025: Gas Transmission Pipeline System Limitations or Outages

Figure 3 Timing of two-day ahead and day-ahead markets relative to gas market timelines



With EDAM go-live, the ISO will begin publishing advisory results from the D+X market process. The D+X refers to the advisory look-ahead markets that the ISO runs after the day-ahead market is complete. This will include a D+2 and advisory results beyond D+2 . The ISO will publish D+2 advisory results in time to offer value for fuel procurement during the Timely nomination cycle. While advisory results beyond D+2 will be available through the ISO's planned processes, forecast uncertainty, topology changes due to outages may serve to limit the accuracy of the information provided.

Previous GRM proposals, included a preliminary assessment of how well the D+2 might predict the next day's day-ahead results for gas resources, discussed opportunities to improve the accuracy of the D+X, and discussed what information from the D+X would be useful to support gas procurement during the Timely gas cycle. Stakeholder feedback indicates broad support for these efforts and includes additional recommendations. The ISO incorporated these recommendations into the sections below. These enhancements to not require action by the Board of Governors or the WEM Governing Body because they are not a policy change and will be reflected in the BPMs.

5.1. D+2 Assessment

The ISO performed a preliminary assessment of how well the D+2 predicts day-ahead energy schedules for gas resources. The purpose of this assessment was to build market participant confidence in using advisory market results as fuel procurement targets.

The ISO looked at how gas burn changed from the D+2 to DA as an average over each month, as well as the variance within each month, for energy schedules and RUC awards. The average indicates a historic trend: on average and in aggregate for the ISO BA, the D+2 has tended to over-estimate the next day's DAM gas burn by ~5% but the DAM tends to under-estimate the next day's RT market.

The ISO recognizes a historic analysis has limited inferential value. This analysis only looks at the ISO BA but ISO expects trends may differ from BA to BA due to differences in market participation, like advisory bidding behavior. This analysis considers the D+2 and DAM as they are run today but planned and proposed changes will impact outcomes. The ISO is introducing imbalance reserves with EDAM go-live which should impact the magnitude of differences between D+2 and DA RUC. The ISO is also making improvements to the D+2 to better align results with the D+1 and reduce differences between D+2 and DA energy.

The ISO supports a more comprehensive analysis once new, relevant data becomes available. The ISO and stakeholders have identified additional metrics to continue to assess the accuracy of advisory results:

- Evaluate differences in gas burn between D+2 and DA at the BA level and participant level.
- MWh hour schedules instead of gas burn
- To identify further enhancements, assess the correlation between D+2 accuracy and forecasts, bid set, outage information

5.2. D+X improvements

To better align D+2 inputs with the next day's day-ahead market (D+1), the ISO proposes using D+1 bids if they've been submitted in time to run the D+2. As a default the ISO proposes to use bids for the DAM run on the same day as the D+2, i.e. same-day bids or DA bids, where D+1 bids are unavailable. The ISO day-ahead market operator will retain the ability to utilize a different bid set should they determine it likely to provide more accurate results.

Stakeholders generally support this proposal and recommend analysis on the bid set to understand the availability and use of D+1 bids, and how this change affects D+2 accuracy. The ISO is looking forward to assessing and identifying additional improvements to the D+X as new data becomes available following EDAM go-live.

5.3. Reporting information from the D+X

The ISO proposes three changes to current reporting practice: 1) publish more granular advisory market schedules from the D+2, 2) provide descriptive statistics about D+2 inputs along with the D+2 results, and 3) publish advisory results beyond D+2

1) The ISO proposes to publish more granular advisory results from the D+2. The ISO proposes to publish results from the D+2 so that advisory energy schedules are shown separately from RUC commitment awards.

Today, the ISO publishes 48 hour ahead RUC advisory results, which are a combination of energy and RUC awards. The ISO understands that the combined result may have limited value for WEIM/EDAM entities.

2) The ISO proposes publishing descriptive statistics to indicate the accuracy of market results.

The ISO is planning to publish the BA-level differences, and asked stakeholders if other descriptive statistics would support decision making.

3) The ISO proposes to publish RUC advisory results beyond D+2 .

Stakeholders support publishing advisory results beyond D+2 to inform fuel procurement for the first gas flow day in RT. This additional information is expected to be particularly useful for Mondays and holidays where limited next day gas trading occurs.

6. Stakeholder Engagement and Western Energy Markets (WEM) Governing Body Role

Stakeholder input is critical for developing market design policy. The schedule proposed below allows opportunity to for stakeholder involvement and feedback. This initiative will require briefing to CAISO Board of Governors to support its advisory role and approval from the WEM Governing Body.

6.1. Governing Body Classification

This initiative will adjust how gas resources across the entire market footprint represent their costs. As explained below, CAISO staff expects that tariff changes resulting from this initiative will be subject to the primary authority of the WEM Governing Body.

The WEM Governing Body has primary authority over any

> proposal to change or establish a tariff rule applicable to the WEIM/EDAM Entity balancing authority areas, WEIM/EDAM Entities, or other market participants within the WEIM/EDAM Entity balancing authority areas, in their capacity as participants in WEIM/EDAM… The scope of this primary authority excludes, without limitation, any other proposals to change or establish tariff rule(s) applicable only to the ISO balancing authority area or to the CAISO-controlled grid.

Charter for WEIM and EDAM Governance § 2.2.1. The proposed tariff changes would be "applicable to WEIM/EDAM Entity balancing authority areas, WEIM/EDAM Entities, or other market participants within WEIM/EDAM Entity balancing authority areas, in their capacity as participants in WEIM/EDAM." They would not be limited to the ISO balancing authority area or to the CAISO-controlled grid. Accordingly, the proposed changes fall within the scope of the WEM Governing Body's primary authority.

Stakeholders are encouraged to submit a response in their written comments to the proposed classification of as described above, particularly if they have concerns or questions.

6.2. Next Steps

The ISO will seek WEM Governing Body approval for the decisional items in this final proposal. As identified in its 2026 calendar the ISO is planning additional work relating to commitment cost bidding flexibility.

Appendix A: Examples of the RLCR process and after-the-fact cost recovery process for expected costs

These examples describe process today for pre-market cost adjustments through the RLCR process and after-the-fact cost recovery (ATFCR), and consider opportunities and outcomes when resources request cost adjustments for expected costs.

Resources can request cost adjustments to reflect expected costs through either the automated or manual RLCR processes.

- Resources can request costs above the automated threshold through the automated process. If they do, they'll be capped at the threshold and subject to audit, but also eligible for ATFCR for whatever was not validated pre-market.
- Resources can request costs through the manual process. Whatever costs are requested but not validated pre-market are eligible for cost recovery through the ATFCR process.

Example 1: This example considers the difference in potential outcomes if a resource requests costs above the automated RLCR threshold, given what documentation they have.

- The default fuel cost is $11
- The reasonableness threshold will validate cost adjustment requests up to $14
- The resource expects real-time fuel costs will be $16

What supporting information do I have?	*Process*	*Requested amount*	*What outcome could I expect in each process?*	*Eligible for ATFCR*
Scenario 1: I have documentation that shows I tried to purchase additional fuel at $15 during the next day gas day but could not.	Automated	$16	Automated process will cap request at $14	$2
	Manual	$16	**Manual can approve costs up to $15**	$1
Scenario 2: I purchased most of my fuel at $13 during the next day gas day, but I believe that I will need more fuel to support DA commitments.	Automated	$16	**Automated process will cap at $14**	$2
	Manual	$16	Manual can approve costs up to $13	$3

In scenario 1 above, the resource has specific cost documentation and therefore realizes better outcomes in the manual process than the automated process for expected costs. Using the manual process, they still do not get their full ask approved pre-market, but this outcome ($15) still covers more in the market than if they had requested an automated adjustment and been capped at a lower value ($14).

In Scenario 2 above, the resource does not have documentation to support costs above $13. If they request $16 through the automated process, it will cap them at $14, and $2 will be eligible for ATFCR. The resource would be cleared in the market based on the threshold instead of their requested costs. In this scenario the resource does not show meaningful evidence to support the cost expectation. Therefore, the limitation imposed by the cap serves its purpose by offering more flexibility than the manual process to reflect expected costs but still protecting against reflecting potentially inflating costs in the market.

Both scenarios offer equal opportunity for cost recovery. Requested offers through either process are eligible for ATRCR up to the difference between what was validated pre-market and what was requested. In both scenarios, they are eligible to fully recover their requested $16. The scenarios differ by how much of that $16 can be recovered through the market.

Eligibility for cost recovery does not guarantee cost recovery. To recover the full amount a resource is eligible for, they must go through the after-the-fact cost recovery process to show actual costs incurred.

Appendix B: Examples GPI adjustment application scenario options

The examples in this section address some of the problem statements stakeholders identified and the information the ISO would look for to confirm that those conditions are applicable and preclude a resource from using existing tools to manage their costs. Each scenario includes the basic information and documentation requirements the ISO will require to validate those conditions and customize the adjustment. The ISO will work with stakeholders to provide clear expectations for data and documentation submittal, and standardize these requirements, in the BPMs.

1. Volatility relative to a single primary gas hub

Resources that primarily source gas from a single fuel hub may face more volatility at hubs where trading is systemically illiquid, and/or from which transportation is constrained. Resources may rely on same-day gas frequently or for a large volume of purchases, but the ISO does not always account for same-day gas price volatility in reference levels.[45]

SCs should choose this option if they need more flexibility to reflect volatility between next-day and same-day gas prices for one of the following reasons:

- The resource has a reasonable expectation of not receiving a day-ahead award and is typically reserved to meet incremental
- The resource's hub is illiquid such that the hub inconsistently posts same-day indices

Data requirements: max purchase price per trade-day, volumetric share of gas purchased next-day versus same-day.

Documentation requirements: Reference level change request data or supporting documentation relating to the procurement of fuel. Documentation is expected to meet existing standards as defined by the ISO Market Instruments BPM Attachment O.

2. Multiple fuel hubs

Some resources rely on multiple fuel hubs consistently and may switch fuel hubs more frequently than they can anticipate by updating their active fuel region in the master file. This option, if supported, offers the solution recommended by stakeholders to reflect multiple hub indices a resource's reference levels.

Multiple hubs will allow resources to request a cost adjustment based on any of the hubs referenced.[46]

Data requirements: identify hubs from which the resource receives fuel supply delivery and volumetric share of purchases, trade-days on which the resource experienced limitations at the active fuel region in the master file

Documentation requirements: Reference level change request data, supporting documentation relating to the procurement of fuel, and documentation relating to pipeline constraint limitations driving volatility. Documentation is expected to meet existing standards as defined by the ISO Market Instruments BPM Attachment O.

[45] The ISO calculates the real-time reasonableness threshold the evening before the real-time trade day using settled next day gas indices. The ISO will update the real-time reasonableness threshold in real-time when the ISO observes same day gas is trading greater than 110% of the next day gas index.
[46] the ISO will not consider the highest priced hub unless it accounts for more than 10% of the volumetric fuel procurement for the resources. This is consistent with the RLCR process as it is not intended to ensure 100% of fuel cost recovery ex ante; some level of after the fact cost recovery is expected for outlier events.

3. Seasonally dependent volatility

Some resources can anticipate that in certain seasons, or during certain months, their fuel supply arrangements will change due to regularly occurring seasonal events,[47] for example, competition from residential gas customers during winter months can increase volatility.

The ISO will evaluate their requests from a full year and if they pass the benchmark, the ISO will evaluate data and documentation specific to a resource's conditions to determine the appropriate multiplier. The ISO will not consider a history of less than one year because this policy is intended to address chronic differences in fuel costs. The ISO will consider the annual distribution of requests as part of the fuel cost adjustment determination for specific resources. Should the ISO observe cost adjustments primarily occur in a single month or season, the ISO may move forward with setting a multiplier for only that month or season.

Data requirements: max purchase price per trade-day, source and/fuel type

Documentation requirements: Reference level change request data, supporting documentation relating to the procurement of fuel, and documentation relating to pipeline constraint limitations driving volatility. Documentation is expected to meet existing standards as defined by the ISO Market Instruments BPM Attachment O.

4. Change in circumstances within the past year

Some changing circumstances on the gas system may drive the need for an adjustment on a going forward basis, but may not necessarily be supported retroactively by data. In such cases the ISO will offer an adjustment with appropriate documentation. An example may be a pipeline outage with a longer expected duration wherein the market participating has not yet used the reference level change question process to capture the volatility being caused by the outage.

Data requirements: max purchase price per trade-day, specify cause of change in circumstances

Documentation requirements: Supporting documentation relating to the procurement of fuel, alternative fuel supply arrangements, and documentation relating to pipeline constraints and outages. Documentation is expected to meet existing standards as defined by the ISO Market Instruments BPM Attachment O.

[47] This is not intended to include exceptional circumstances related to a specific season, like winter storm or heat events.

Attachment E

WEM Governing Memo & Vote of 2026 Variable Operations and Maintenance Cost

Tariff Amendment – Variable Operations and Maintenance Adders, Variable Operating Cost for Storage Resources, and After the Fact Cost Recovery for Natural Gas Resources

California Independent System Operator Corporation

November 18, 2026

Memorandum

To: Western Energy Markets Governing Body

From: Anna McKenna, Vice President Market Design and Analysis

Date: October 13, 2026

Re: **Decision on 2026 variable operations and maintenance cost review**

This memorandum requires action by the Western Energy Markets Governing Body (primary authority) and the ISO Board of Governors (consent agenda).

EXECUTIVE SUMMARY

Management seeks approval of the final proposal for the 2026 variable operations and maintenance cost triennial review initiative. The proposal updates default variable operations and maintenance cost adders to reflect inflation since 2023 and establishes a default variable operations cost for energy storage resources.

Variable operations and maintenance cost adders allow generating resources to reflect their variable operations and maintenance costs in default energy bids and default commitment costs. For storage resources, variable operations costs serve a similar purpose but apply only to default energy bids.

Management proposes a 9.84 percent inflation increase to the default variable operations and maintenance adders based on Consumer Price Index data. The review assessed inflation, negotiation activity, and industry-wide cost studies and determined that inflation since the previous review warrants an update. The proposed approach is consistent with previous review cycles and stakeholder practices.

Management also proposes a new default variable operations cost of $14.74/MWh for storage resources. Currently, market participants must negotiate a variable operations cost with the ISO. With more than 17,000 MW of storage capacity participating in ISO markets and over 60 negotiated cost agreements currently in place, establishing a default value would reduce administrative burdens and streamline market participation. The proposed default value is based on the median of battery manufacturer long-term service agreement costs, which best reflects actual storage operating costs.

Management recommends approval of the proposal, which received general stakeholder support and has no remaining unresolved stakeholder requests or questions. The proposal ensures current market conditions are reflected through

updated default variable operations and maintenance cost adders and streamlines the process of incorporating these costs for energy storage resources through a new default variable operations cost.

WEM Governing Body motion:

> ***Moved, that the WEM Governing Body approves the revision to the default variable operations and maintenance cost adders and establishment of a default variable operations cost for storage resources as described in the memorandum dated October 13, 2026, and requests that Management place this initiative on the ISO Board of Governors' consent agenda; and***
>
> ***Moved, that the WEM Governing Body authorizes Management to make all necessary and appropriate filings with the Federal Energy Regulatory Commission to implement the change proposed in this memorandum, including any filings that implement the overarching initiative policy but contain discrete revisions to incorporate Commission guidance in any initial ruling on the proposed tariff amendment.***

BACKGROUND

Market participants submit information to reflect their resources' operational capabilities and costs in the ISO's markets. These submissions include resources' variable operations and maintenance costs, and for energy storage resources, variable operations costs. The ISO includes these costs in its default energy bids for market power mitigation and default commitment costs. The ISO's markets offer default variable operations and maintenance cost adders for market participants to use in lieu of negotiating values with the ISO. However, a default variable operations cost has not previously been established for energy storage resources because it is a relatively new technology, requiring market participants to negotiate values individually with the ISO.

Variable operations and maintenance cost adders and variable operations costs are intended to reflect resource operating costs when the market triggers market power mitigation measures. Variable operations and maintenance cost adders are used in the ISO's default energy bids for most generating resources. They are also incorporated into most generating resources' default commitment costs which establish caps on minimum load, start-up, and transition cost bids used in resource commitment decisions and bid cost recovery settlements. Energy storage resources only use variable operations cost as part of their default energy bids because they do not have commitment costs.

The default variable operations and maintenance cost adders vary by resource fuel and technology type (*e.g.* natural gas combined cycle gas turbine, hydroelectric, geothermal,

etc.). The ISO reviews the default adders every three years in collaboration with stakeholders. The previous review, completed in 2023, updated the default variable operations and maintenance cost adders for inflation using 2023 as the reference year and became effective December 1, 2023.

However, if a resource determines that the default variable operations and maintenance cost adders do not reflect its costs, it may negotiate a resource-specific adder with the ISO at any time.

PROPOSAL

The final proposal includes two components: updating the default variable operations and maintenance cost adders to reflect inflation and establishing a default variable operations cost for energy storage resources.

1. Updating default variable operations and maintenance cost adders

Management proposes a 9.84 percent inflation adjustment to the default variable operations and maintenance cost adders based on the U.S. Bureau of Labor Statistics Consumer Price Index for All Urban Consumers from June 2023 through May 2026.

As part of this triennial review, Management evaluated inflation, negotiation activity, and industry-wide cost studies. The review found that negotiation activity remains within historical norms and that the existing technology categories continue to appropriately represent resources participating in ISO markets. Accordingly, Management determined that an inflation-based adjustment is the most appropriate update at this time and that broader modifications to the framework are not warranted.

Use of the Consumer Price Index for the inflation adjustment is consistent with prior review cycles and market participant practices for adjusting their negotiated values. If the updated default adders are not sufficient, market participants have the option to negotiate a value with the ISO.

Going forward, the ISO proposes to undertake a triennial review of these values in consultation with stakeholders and publish revised values in the Business Practice Manual rather than state them directly in the tariff.

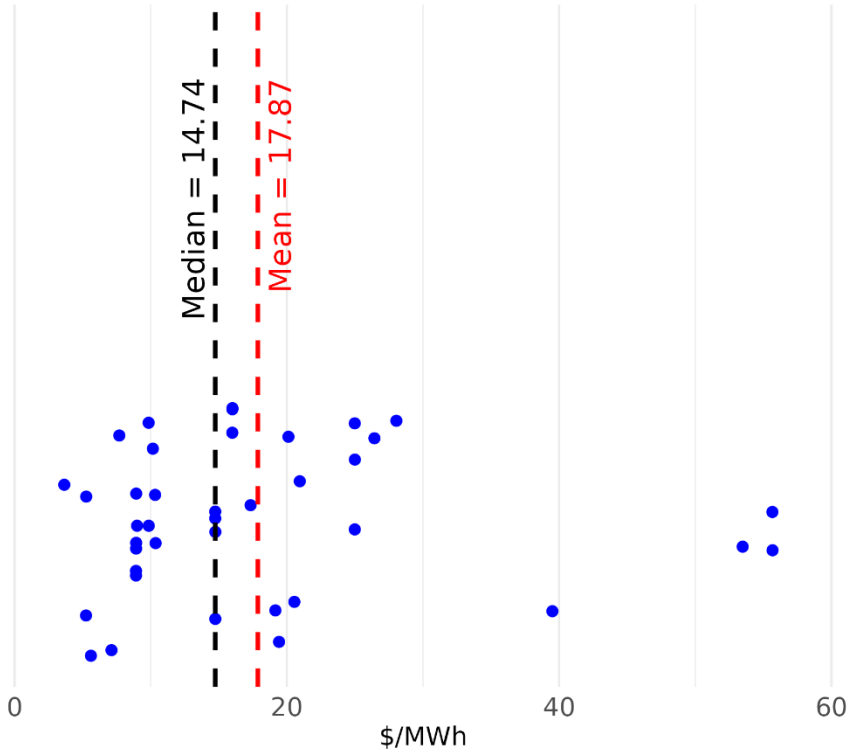
2. Establishing a default variable operations cost for storage resources

Management proposes establishing a default variable operations cost for energy storage resources of $14.74/MWh. This value is based on a thorough review of values documented in supporting long-term service agreements and original equipment manufacturers from negotiated costs approved by the ISO over the past five years.

The proposed value of $14.74/MWh is the median of long-term service agreements-supported negotiated costs and is illustrated in Figure 1. Negotiations supported by long-term service agreements provide the most transparent and reliable representation

of actual storage operating costs because they are derived from manufacturer maintenance agreements and are supported by detailed cost information. A median value is less sensitive to outliers than the mean and therefore provides a more representative measure of typical costs.

Figure 1: Scatter plot of negotiated costs supported by long-term service agreements



Management considered several alternatives including using all negotiated values regardless of supporting documentation, establishing manufacturer-specific default values, or maintaining the current approach of requiring individual negotiations. These options are not recommended because they either rely on less transparent cost data, lack sufficient statistical basis, or may continue to impose unnecessary administrative burdens on market participants and the ISO.

The proposed value provides a balanced and data-driven approach that reflects reasonably representative storage operating costs while streamlining the cost-approval process. The ISO presented this methodology through the stakeholder process where stakeholders generally supported the proposed value and provided feedback on the supporting dataset of negotiated costs, the statistical methodology, and treatment of inflation.

Going forward, Management proposes to undertake a triennial review of these values in consultation with stakeholders and publish revised values in the Business Practice Manual rather than state them directly in the tariff.

STAKEHOLDER FEEDBACK

The ISO published an issue paper on May 29 and held a stakeholder meeting on June 4, followed by a straw proposal on July 7 and a stakeholder meeting on July 9. Stakeholder comments on both documents informed the final proposal and draft tariff language published on August 6. The ISO held a stakeholder meeting on August 20, and no comments were submitted on the final proposal or draft tariff language.

Two WEIM entities commented on the issue paper, while two storage stakeholders commented on the straw proposal, one of whom also commented on the issue paper. The comments supported both the proposed update to default variable operations and maintenance cost adders and the establishment of a new default variable operations cost for storage resources. Comments focused on the transparency of supporting data, treatment of inflation in future review cycles, and methodologies used to calculate the proposed values. Specifically, stakeholders requested further information on the relationship between default and negotiated values, the application of inflation adjustments, and the statistical basis for the proposed default value. Management addressed these comments in the straw proposal and final proposal by clarifying the use of negotiated values, the application of inflation adjustments, and the rationale for using the median as the basis for the proposed default value. There were no outstanding stakeholder requests or questions remaining at the conclusion of the stakeholder process.

After evaluating all stakeholder feedback, Management determined that substantive changes to the proposal were not necessary. Realized inflation, rather than a forward-looking indicator, remains the most objective basis for updating the adders given the uncertainty of future inflation rates. For storage resources, Management determined that the median of long-term service agreement-supported negotiated values is the most appropriate basis for establishing a default value as it provides a transparent and representative measure of actual operating costs while minimizing the influence of outliers.

CONCLUSION

Management recommends increasing the existing default variable operations and maintenance cost adders by 9.84 percent to reflect current market conditions driven by inflation since the 2023 review.

Management also recommends establishing a new default variable operations cost for energy storage resources of $14.74/MWh based on the median of long-term service agreement-supported negotiated values. The proposed value reasonably reflects storage operating costs, provides a transparent and data-driven default, and reduces the administrative burden associated with individual cost negotiations.

Finally, Management proposes to publish future updates to these cost adders in the Business Practice Manual following stakeholder consultation and consideration of the factors identified in the tariff, rather than state the values directly in the tariff.

WESTERN ENERGY MARKETS | California ISO

WEM Governing Body October 20, 2026 Decision on Variable Operations and Maintenance Cost Review

General Session

Motion

Moved, that the WEM Governing Body approves the revision to the default variable operations and maintenance cost adders and establishment of a default variable operations cost for storage resources as described in the memorandum dated October 13, 2026, and requests that Management place this initiative on the ISO Board of Governors' consent agenda; and

Moved, that the WEM Governing Body authorizes Management to make all necessary and appropriate filings with the Federal Energy Regulatory Commission to implement the change proposed in this memorandum, including any filings that implement the overarching initiative policy but contain discrete revisions to incorporate Commission guidance in any initial ruling on the proposed tariff amendment.

Moved: Member Decker Second: Member Kondziolka

WEM Governing Body Action:	Vote Count: 3-0
Campbell Y Decker Y Kondziolka Y	

Attachment F

CAISO Board of Gov Memo & Vote of 2026 Variable Operations and Maintenance Cost

Tariff Amendment – Variable Operations and Maintenance Adders, Variable Operating Cost for Storage Resources, and After the Fact Cost Recovery for Natural Gas Resources

California Independent System Operator Corporation

November 18, 2026

Memorandum

To: ISO Board of Governors

From: Roger Collanton, Vice President, General Counsel, and Corporate Secretary

Date: October 22, 2026

Re: **Decision on consent agenda**

This memorandum requires ISO Board of Governors action.

The October 28, 2026, Board of Governors general session consent agenda will consist of the following two items:

1. Variable operations and maintenance cost review – Governing Body Primary Authority (Attachment 1 – Governing Body memorandum and motion)

2. Board of Governors August 27, 2026, general session minutes (Attachment 2: draft minutes [not publicly posted]. Final minutes to be posted upon Board decision on consent agenda).

As to item 1 above, pursuant to the ISO bylaws and the Charter for WEIM and EDAM Governance, the WEM Governing Body has primary authority, as delegated by the ISO Board of Governors, over changes to market rules that are applicable to EDAM or WEIM, or that change or establish the formation of a locational marginal price. The Charter specifies that such market rules changes first go to the WEM Governing Body for approval, and then to the Board for approval via consent agenda. In its general session meeting on October 20, 2026, the WEM Governing Body approved Management's proposal on variable operations maintenance review.

Management proposes the following motion:

> ***Moved, that the ISO Board of Governors approves the October 28, 2026, consent agenda, as described in the memorandum dated October 22, 2026.***

ISO Board of Governors **October 28, 2026** **Decision on consent agenda**

General Session

Motion

Moved, that the ISO Board of Governors approves the October 28, 2026, consent agenda, as described in the memorandum dated October 22, 2026.

Moved: Governor Reynolds Second: Governor Borenstein

Board Action:	Vote Count: **5-0**
Borenstein	Y
Eto	Y
Leslie	Y
Reynolds	Y
Schori	Y

Attachment G

WEM Governing Body Memo & Vote for Gas Resource Management Initiative

Tariff Amendment – Variable Operations and Maintenance Adders, Variable Operating Cost for Storage Resources, and After the Fact Cost Recovery for Natural Gas Resources

California Independent System Operator Corporation

November 18, 2026

California ISO | WESTERN ENERGY MARKETS

Memorandum

To: Western Energy Markets Governing Body
ISO Board of Governors

From: Anna McKenna, Vice President, Market Design and Analysis

Date: December 10, 2025

Re: **Decision on gas resource management proposal**

This memorandum requires action by the Western Energy Markets Governing Body (primary authority) and the ISO Board of Governors (consent agenda).

EXECUTIVE SUMMARY

Management proposes enhancements to policies and processes that support efficient use of gas generation resources and ensure fair compensation for their participation across the Western market footprint. These policy enhancements will: 1) provide gas resources in the day-ahead and real-time markets with adequate opportunities to reflect and recover their fuel costs, and 2) extend access to existing procedures that safeguard gas and electric system reliability. Management is also pursuing process improvements to better align gas supply procurement practices with market needs.

Gas resources face unique challenges in managing uncertainty across independent but linked gas and electric markets. Typically, gas resources procure fuel through contracts and transactions in the gas market before they know how much fuel they will need to support their electricity market commitments. They can manage this uncertainty by reflecting the expected cost of resolving differences between procured and required gas volumes in their energy bids. However, when gas prices are volatile or the gas system experiences constraints, energy offers from gas resources can quickly become obsolete if those bids do not adequately account for price uncertainty.

The ISO uses reference levels — proxy but verifiable cost estimates — to ensure efficient scheduling and mitigate market power. These tools provide flexibility and allow cost verification, but they may not fully address variability in gas systems across the Western footprint.

In the Western Energy Imbalance Market (WEIM), participants manage their fuel cost procurement risk by submitting hourly base schedules and only bid for real-time dispatch based on the availability and cost of gas imbalances. Under the Extended Day-Ahead Market (EDAM), base scheduling is not available, and resources rely instead on market offers for day-ahead commitments. This increases the need for accurate cost reflection in

bids, as reference levels and cost-based offers must capture fuel costs precisely to balance reliability and economic efficiency.

Therefore, Management proposes the following policy enhancements:

1. **Expand opportunities to verify unique cost conditions:** Broaden opportunities for gas resources to customize cost inputs, access cost adjustment mechanisms, and recover costs – particularly in response to unique supply arrangements and gas price volatility.

2. **Ensure equitable access to reliability tools:** Guarantee that all gas systems, regardless of location within the Western footprint, have equitable access to market operator procedures that support gas and electric system reliability.

Management will also pursue process changes within its existing tariff authority that would improve certainty for fuel procurement by enhancing advisory market runs. These changes will generate more precise and actionable advisory schedules, helping gas resources better align fuel procurement with expected market conditions.

Moved, that the Western Energy Markets Governing Body approves the gas resource management final proposal as described in the memorandum dated December 10, 2025, and requests that Management place this initiative on the ISO Board of Governors' consent agenda; and

Moved, that the Western Energy Markets Governing Body authorizes Management to make all necessary and appropriate filings with the Federal Energy Regulatory Commission to implement the changes proposed in this memorandum, including any filings to incorporate Commission guidance in any initial ruling on the proposed tariff amendment.

BACKGROUND

Resources participating in energy markets must be ready to deliver. For gas-fired generators, this means securing sufficient fuel and reserving (or "nominating") pipeline capacity from trading hubs to the plant.

This process begins with "next-day" gas trading, which offers the best opportunity to secure deliverable gas at cost-efficient prices, but concludes before the ISO's day-ahead market publishes results. "Same-day" gas purchases are possible, but often come with cost premiums, limited liquidity, or deliverability constraints. Gas resource energy offers may reflect both procured fuel and the anticipated costs of procuring additional supply.

Managing uncertainty in next-day fuel procurement

Gas pipeline operators maintain gas system reliability by balancing scheduled pipeline capacity with actual gas demand. For resources within the existing day-ahead market footprint, the ISO, as the Market Operator, supports this process by sharing forecasted gas burn with gas pipeline operators prior to the next day. If gas nominations deviate from expected demand, pipeline operators may issue notifications to their customers to help resolve imbalances.

Gas generators may experience a mismatch between nominated fuel and the actual fuel needed to meet electric market schedules. They can address these imbalances by 1) revising nominations or securing transportation on different pipelines – an option that carries financial and operational risks, or 2) using "imbalance capacity" services to take more gas or less gas from the pipeline than planned. Availability of imbalance capacity service largely depends on whether the gas system has physical gas storage infrastructure.

Gas resources in the newly expanded day-ahead market may face greater uncertainty than they do submitting base schedules ahead of and in alignment with gas nominations. In the WEIM, participants procure fuel knowing what they need to support the base schedule. With the launch of the EDAM, the market will determine unit commitment and energy schedules in the day-ahead timeframe for a broader set of market participants. Resources will receive energy market awards that may require a different amount of gas than could have been reasonably anticipated during the next-day gas procurement and nomination process.

Resources within the ISO balancing authority area benefit from significant gas storage infrastructure on pipelines, which provides those resources more flexibility. In contrast, resources in the broader Western market region may have more limited gas storage. Without the flexibility to manage imbalances, these resources must rely more heavily on same-day gas procurement, exposing them to higher costs and operational risks.

Managing cost uncertainty in bids

Resources bidding into the market submit bids for both energy and commitment costs, which include start-up, minimum load, and transition costs for multi-stage generating units. In each case, these bids reflect the price at which the resource is willing to be dispatched.

The market's automated market power mitigation relies on pre-defined estimates of a resource's verifiable operating costs. These costs, called reference levels, include default energy bids and the proxy cost used to cap commitment cost bids. The Market Operator calculates reference levels for each gas resource using a formula that accounts for fuel costs, gas pipeline transportation costs, and other cost information that reflects the resource's unique characteristics.

The Market Operator calculates the fuel cost in reference levels using the gas price index at the gas trading hub selected by the resource. The index price does not

represent a resource's specific procurement costs but serves as a reasonable proxy. A default multiplier is used to allow gas resources the flexibility to account for a range of potential costs. The multiplier serves as a safe harbor because resources can use this headroom to account for cost variation without requesting a cost adjustment or demonstrating actual costs. Today, the default multipliers are 110 percent for default energy bids and 125 percent for commitment costs.

Resources can also provide updated fuel cost information when gas price volatility pushes costs beyond the range of costs covered by the default multipliers. The reference level change request process allows resources to update their reference levels through two options: 1) an automated request for instant validation when costs fall within a pre-defined range without prior documentation, subject to after-the-fact auditing, or 2) a manual request that Market Operator staff review which has no upper limit on validated costs but requires supporting documentation of fuel costs in advance of the market run.

The automated process approves costs that are less than or equal to a modified version of the resource's reference level, called the reasonableness threshold. The Market Operator calculates the reasonableness threshold with fuel costs that are scaled to reflect additional fuel volatility. The fuel volatility scalar is currently set at 125 percent of the gas price index used in the reference levels on days when there is no published gas price index and 110 percent on other days.

Resources have an incentive to update their reference levels to ensure their costs can be recovered from the market, which also supports market efficiency. The reference level change request process unlocks eligibility to seek cost recovery through the after-the-fact cost recovery process, a safety net for unrecovered actual costs. Together, the default reference level calculations, the reference level change request process, and after-the-fact cost recovery give market participants multiple avenues to reflect reasonable cost assumptions and to recover actual costs incurred.

As the regional market expands, the wider variety of gas market infrastructure and fuel supply arrangements over the regional footprint needs consideration. Stakeholders provided evidence that unique gas market drivers and constraints can drive fuel cost volatility even under normal conditions, not just in exceptional circumstances. Limited liquidity and physical system limitations can create greater fuel cost variation than current mechanisms were designed to handle.

Base schedules used in the WEIM minimize a resource's exposure to financial risk from fuel cost uncertainty because they allow a participant to directly control how its resource is scheduled, instead of bidding economically and allowing the market to schedule the resource.

In contrast, participating in the EDAM allows resources to participate economically in the day-ahead market, and optimized day-ahead market schedules are a key benefit of the EDAM. The EDAM will consider resources' offers to determine feasible and economic day-ahead commitments and schedules, which heightens the need to ensure that resources can reliably reflect their costs in the market. When resources are limited to their reference levels,

it is critical that fuel costs used in reference levels are as accurate as possible to ensure economic and efficient market solutions that support reliable operations.

Managing reliability risks due to gas system limitations

In response to the 2015 Aliso Canyon gas storage facility leak, the Market Operator developed a "gas nomogram constraint," a reliability tool that reflects gas system limitations in electricity market operations. A nomogram is a specialized constraint in the market software that defines a linear relationship between power system variables. The "constraint" caps the combined gas use of a group of gas resources to align with pipeline limits and dynamically adjusts as system conditions change. This dynamic market instrument can more efficiently manage a gas system limitation than manual intervention.

To effectuate use of this tool, the Market Operator coordinated with the gas pipelines serving the southern region of the ISO's balancing area and agreed on the need for market intervention and the circumstances that would trigger that intervention. The critical component of this policy is the communication protocol that describes the steps that the balancing authority, the Market Operator, and gas pipeline each must take to activate a constraint in the market. The Market Operator will only activate a gas nomogram constraint in coordination with the gas pipeline operator.

Currently, the Market Operator only has authority to activate a gas nomogram constraint on the Southern California Edison and San Diego Gas & Electric Company gas pipeline systems.

PROPOSAL

The robust stakeholder process produced a set of five proposed changes collectively designed to provide gas resources in the energy markets with greater flexibility in reflecting their expected fuel costs in the market and recovering actual fuel costs, greater information to better prepare for operational day fuel burns, and market tools to coordinate gas fuel burn with the gas pipeline operators.

1. Customized fuel price volatility accounting in reference levels

Gas resource reference levels use a standard formula that accounts for the operating costs common to most gas resources but includes resource-specific information such as a resource's chosen fuel price index. A safe harbor provision gives all resources the same amount of flexibility to account for additional costs not captured by this formula. No single uniform change to this formula can equitably accommodate the diversity of supply arrangements that exist across the region.

Resources can use the existing reference level change request process to adjust their fuel costs on any given day to deal with exceptional circumstances. However, as raised by the stakeholder working group preceding this proposal, resources may need to submit multiple temporary requests, creating an unnecessary burden. The working group prioritized

changes that reduce reliance on these temporary adjustments and instead account for systematic drivers of higher cost volatility.

Consistent with this request, Management proposes a customizable multiplier on the gas price index to account for the fact that some gas resources face more gas price volatility than others. The proposed multiplier will cover volatility tied to a resource's specific circumstances and will apply on a going-forward basis. Applying this multiplier directly to the gas price ensures that reference levels and the reasonableness threshold all reflect a resource's adjusted gas price volatility.

To request such a customized multiplier, a resource owner must demonstrate the need by showing that its actual costs exceeded reference level calculations over the last year. The Market Operator will verify how frequently a resource's costs have historically fallen outside the default range. If this frequency meets a "minimum threshold requirement," which reflects the frequency with which other resources in more stable conditions require cost adjustments, the Market Operator will conduct a comprehensive analysis to customize the resource's gas price index.

The minimum threshold requirement is meant to distinguish between: 1) a reasonable level of reliance on the daily reference level change request process for capturing more volatile fuel costs during unexpected events, and 2) systematic conditions that mean resources are forced to more frequently use daily requests to reflect their actual fuel costs. Resources in more stable fuel cost regions, aside from pipeline outages and winter storms, can generally rely on the safe harbor to accommodate cost variation. This proposal recognizes that some resources experience more volatility than others, reduces administrative burden on market participants, and ensures all gas resources have the same amount of flexibility regardless of their supply conditions.

2. Additional flexibility to reflect expected costs when conditions change

Management proposes giving gas resources more flexibility to reflect gas price volatility in certain conditions when the Market Operator can reasonably anticipate a significant change in gas demand from one day to the next. This is different from the element of the proposal described above, which accounts for a wider range of potential costs by default. This element of the proposal targets the range of costs within which the Market Operator will automatically validate reference level change requests. Specifically, Management proposes to temporarily adjust the reasonableness threshold used to validate automated adjustments to reference levels. This adjustment will give gas resources more flexibility to dynamically update their costs.

This proposal directly addresses stakeholders' recommendation to expand flexibility to manage circumstances in which "everyone moving in the same direction" drives price changes. Management proposes targeting temporary adjustments to reasonableness thresholds when the Market Operator observes market conditions that will increase fuel demand:

- **Day-ahead market adjustment**: Management proposes increasing the day-ahead reasonableness threshold when, prior to running the day-ahead market, the Market Operator observes a significant change in variable energy and demand forecasts. Because these demand forecasts are a key driver of market results, the Market Operator can use forecast changes to indicate when aggregate day-ahead gas burn may be higher than the gas burn that was forecasted two days ahead. In this case, gas resources that used two-day-ahead advisory results to inform fuel purchases will have to secure additional fuel to meet their day-ahead market commitments. This change will support efficient day-ahead unit commitment and associated next-day gas procurement.

- **Real-time market adjustment**: Management proposes increasing the real-time reasonableness threshold when gas burn, determined by the binding day-ahead market run, significantly exceeds the two-day-ahead advisory. This change supports efficient incremental real-time dispatch and associated incremental gas procurement.

The actual adjustment values to the day-ahead and real-time reasonableness thresholds will be based on market data, which the ISO will vet with stakeholders and memorialize in the business practice manuals. This proposal will strengthen market participants' confidence in using two-day-ahead advisory information, discussed further below, by ensuring that any situations in which such information may lead to higher costs are balanced with added flexibility.

3. After-the-fact cost recovery for physical supply disruptions

Currently, the Market Operator requires resources to have submitted a reference level change request for costs to be eligible for after-the-fact cost recovery on a given day. This prerequisite is an important safeguard against resources submitting bids below cost to get a market award, then later requesting cost recovery for higher costs.

However, physical supply disruptions may occur after the deadline for submitting reference level change requests has passed. To address this gap, Management proposes allowing resources to seek after-the-fact cost recovery if they can demonstrate that a physical gas disruption occurred, even if they did not submit a reference level change request in advance.

4. Expanding access to gas nomogram constraints as a reliability tool

Management proposes using existing gas-electric coordination processes to identify and assess a new gas nomogram constraint procedure for a gas pipeline's service area. Management is seeking authority to file revisions to its tariff to implement a gas nomogram constraint after determining, in coordination with the affected electric balancing authority whose gas service area is impacted and the affected gas pipeline operator, that the constraint will serve as an appropriate tool to mitigate reliability risks.

In such cases, the Market Operator would be authorized to file with the FERC tariff language that enables the activation of the gas nomogram constraint.

The tariff filing would assign clear roles and responsibilities for balancing areas and gas pipeline operators and specify criteria that would need to be met to adhere to prior FERC guidance. These criteria include: 1) establishing a relationship between the balancing area, gas pipeline operator, and the Market Operator; 2) showing that a specific gas system limitation can impact electric reliability; 3) showing that the gas nomogram constraint is needed and reasonable in these circumstances; and 4) confirming consistency with established procedures. The Market Operator will provide the nomogram constraint as a reliability tool for a balancing authority, as the NERC-defined reliability authority, to maintain reliable operations.

Management is not proposing any changes to the existing gas-electric coordination process other than extending consideration to the broader region to use the current gas nomogram constraint.

5. Improve multi-day-ahead advisory information to address day-ahead fuel procurement uncertainty

Management plans to leverage existing processes that produce advisory market results two days ahead of the operating day to provide more information to gas resources regarding expected fuel needs. Two-day-ahead advisory information is based on forecasts and other inputs available two days ahead of the operating day. The Market Operator shares the gas burn forecast from the two-day-ahead market run with gas pipeline operators to support reliability.

Once EDAM is operational, the two-day-ahead market run will also serve as a source of additional information for market participants. This market run is configured today to support system reliability needs but may not offer valuable resource-level information. Market participant input is critical for identifying improvements to the market process.

Management has identified three improvements to advisory market runs in order to enhance their usefulness for informing gas procurement in EDAM. These improvements are not a decisional item because they are within existing tariff authority, but Management shares this element of the policy work as important context. The three areas of improvement are:

1. Increase accuracy of two-day-ahead advisory results by using updated bids for the relevant market day, if available.
2. Increase transparency by publishing energy schedules separately from reliability-related unit commitments.
3. Extend advisory information beyond two days ahead to support fuel planning over weekends and holidays.

These process enhancements are expected to improve the quality and usefulness of the two-day-ahead information, offering gas resource owners a valuable data point to better anticipate gas needs before receiving their day-ahead market results. Management will re-evaluate the accuracy of the two-day-ahead market run once planned changes are implemented and data becomes available for regional market participants.

POSITIONS OF THE PARTIES

The Gas Resource Management effort was initiated in response to concerns raised by the Regional Issues Forum regarding misalignment between gas and electric market timelines. The stakeholder working group identified three key areas for policy development: accommodating fuel cost volatility, managing gas system limitations, and informing fuel procurement. Stakeholders delivered a set of recommendations for policy development in each of these areas, which were refined for Management's proposal.

1. Accommodating fuel cost volatility

Stakeholders discussed how regional differences in gas storage capacity and market conditions across the West make it more difficult for some participants to reflect expected fuel costs in their reference levels. Stakeholders proposed two approaches for addressing volatility unique to a resource's supply conditions. Management's proposal for a customized reference level adjustment combines the stakeholder endorsed design elements from each. Notably, Management's proposed enhancements continue to rely on market participants managing gas costs through supply offers rather than, as some stakeholders suggested, developing new tools to manage gas usage via constraints in the market.

While stakeholders support the overall process proposed for customizing fuel volatility covered in reference levels, some raised concerns about certain design details. The Department of Market Monitoring (DMM) cautioned that frequent cost adjustment requests could be subject to gaming. Management agrees and highlights that the audit process is an important feature of this proposal. NV Energy recommended reconsidering the one-year restriction on re-requesting adjustments, citing seasonal variability. Management revised the proposal to allow market participants to request adjustments after four months so that the process can consider the most recent, seasonal information in forward-looking adjustments.

Stakeholders broadly supported targeted enhancements to increase bidding flexibility in exceptional circumstances, such as extreme weather conditions that drive additional commitments compared to those anticipated the day before. Stakeholders appreciated the design element of Management's proposal that provides for additional flexibility when conditions change and requested more detail on how the triggers for more flexibility will be defined. Management plans to determine how to measure forecast changes that show strong predictive values for changes in two-day-ahead advisory results to day-ahead fuel requirements once EDAM operational data is available to analyze.

Management will evaluate how changes in demand and variable renewable energy forecasts that inform the two-day-ahead to the day-ahead market runs relate to changes in fuel requirements. NV Energy recommends analyzing forecasts at both the market footprint level and at the balancing authority area level. Management plans to incorporate both considerations into the assessment. Pacific Gas & Electric raised concerns about potential gaming if the two-day-ahead advisory results are used as a basis for the real-time cost adjustments. Management will monitor whether market participants routinely modify their bids to create large real-time market payouts.

2. Managing gas system limitations

Stakeholders broadly recommended that the Market Operator develop market-based tools to manage gas system limitations and sought clarity on expected actions during gas system limitations the gas nomogram constraint tool. During a technical workshop stakeholders reviewed the tool, provided feedback on potential gaps in existing practices, and identified potential barriers to developing market-based tools. They appreciated the workshop and supported the focused scope of Management's proposal for gas nomogram constraints.

3. Informing fuel procurement

Stakeholders recommended improving information that the Market Operator makes available to inform fuel procurement. They requested that the Market Operator assess the potential accuracy of advisory information, and recommended enhancements to improve market participants' confidence in using forward market data to inform gas procurement. Stakeholders broadly support Management's proposed changes and identified specific metrics to evaluate the two-day-ahead advisory tool and guide future improvements.

4. Commitment cost bidding flexibility

Stakeholders recommended more flexibility for commitment cost bidding. Today, commitment cost bids are capped at the reference level based on the product of the reference level commitment costs and the commitment cost multiplier. In 2018, the ISO Board of Governors approved an alternative dynamic market power mitigation policy in the Commitment Cost and Default Energy Bid Enhancements initiative. This policy, not yet implemented, would allow more commitment cost bidding flexibility by allowing commitment cost offers up to 300 percent of the Market Operator calculated commitment cost when commitment cost mitigation is determined to be unnecessary. Management will pursue implementation of this policy.

However, when bids are subject to mitigation, reference levels should reflect accurate fuel costs to the extent possible. Therefore, Management considers the proposals herein necessary and complementary enhancements to ensure efficient market outcomes. Stakeholders broadly recommended that enhancements apply to reference levels for both reference-level bid components, not just commitment costs.

CONCLUSION

Management recommends that the WEM Governing Body approve, under its primary authority, and that the ISO Board of Governors approve on its consent agenda, the proposed changes described in this memo. Providing more flexibility for gas resources to reflect and recover costs — and ensuring equitable access to reliability tools to manage gas pipeline constraints if needed — will strengthen the ability for gas resources and their balancing areas to participate in the Western Energy Imbalance Market and Extended Day Ahead Market.

WEM Governing Body **December 16, 2025** **Decision on gas resource management proposal**
General Session

Motion

Moved, that the Western Energy Markets Governing Body approves the gas resource management final proposal as described in the memorandum dated December 10, 2025, and requests that Management place this initiative on the ISO Board of Governors' consent agenda; and

Moved, that the Western Energy Markets Governing Body authorizes Management to make all necessary and appropriate filings with the Federal Energy Regulatory Commission to implement the changes proposed in this memorandum, including any filings to incorporate Commission guidance in any initial ruling on the proposed tariff amendment.

Moved: Member Kondziolka **Second:** Member Decker

WEM Governing Body Action: Passed	Vote Count: 5-0
Wagner	X
Campbell	X
Decker	X
Kondziolka	X
Smith	X

Attachment H

CAISO Board of Governors Memo & Vote for Gas Resource Management Initiative

Tariff Amendment – Variable Operations and Maintenance Adders, Variable Operating Cost for Storage Resources, and After the Fact Cost Recovery for Natural Gas Resources

California Independent System Operator Corporation

November 18, 2026

Memorandum

To: ISO Board of Governors

From: Roger Collanton, Vice President, General Counsel, and Corporate Secretary

Date: December 10, 2025

Re: **Decision on consent agenda**

This memorandum requires ISO Board of Governors action.

Pursuant to the ISO bylaws and the Charter for WEIM and EDAM Governance, the WEM Governing Body has primary authority, as delegated by the ISO Board of Governors, over changes to market rules that are applicable to EDAM or WEIM, or that change or establish the formation of a locational marginal price. The Charter specifies that such market rule changes first go to the WEM Governing Body for approval, and then to the Board for approval via consent agenda.

In its general session meeting on December 16, 2025, the WEM Governing Body will consider Management's gas resource management proposal that: 1) provides gas resources in the day-ahead and real-time markets with additional opportunities to reflect and recover their fuel costs, and 2) extends access to existing procedures that safeguard gas and electric system reliability

First, Management proposes to adjust its fuel cost estimates for resources whose default reference level calculations do not capture regular volatility to which the resource is exposed. Second, Management proposes to provide additional flexibility when its advisory market information may differ significantly from market results due to forecast or materialized uncertainty. Third, Management proposes to allow for after-the-fact fuel cost recovery in select circumstances during which no previous cost adjustment was requested. Finally, Management's proposal requests authority to make a filing with the Federal Energy Regulatory Commission for usage of a gas nomogram constraint anywhere within an ISO-operated market footprint.

If the WEM Governing Body approves the decision on the gas resource management proposal, this will be the sole item on the consent agenda.

Management proposes the following motion:

> ***Moved, that the ISO Board of Governors approves the December 18, 2025, consent agenda, as described in the memorandum dated December 10, 2025.***

Management's memorandum to the WEM Governing Body and ISO Board of Governors detailing the proposal is included as Attachment 1. The WEM Governing Body's corresponding motion on the proposal will be provided on December 16, 2025.

Board of Governors **December 18, 2025** **Decision on consent agenda**

General Session

Motion

Moved, that the ISO Board of Governors approves the December 18, 2025, consent agenda, as described in the memorandum dated December 10, 2025.

Moved: **Second:**

Board Action:	Vote Count:
Borenstein Eto Galiteva Leslie Schori	