Opinion on Gas Resource Management

by

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Draft of Dec. 5, 2025

I. Introduction

The Market Surveillance Committee (MSC) of the California Independent System Operator (CAISO) has been asked to comment on the CAISO's proposal for Gas Resource Management (GRM).[2]

The challenges involved in coordinating of gas and electricity markets have been a major concern for the CAISO throughout its existence.[3] The general issue of how to reflect gas prices and supply availability in resource offers during periods of gas price volatility, including commitment costs and energy, for purposes of market power mitigation, has been a continuing concern. The problem is that if gas resource offer prices are capped by CAISO-calculated default energy bids and commitment cost caps (more generally referred to below as "reference levels"), lags in updating these offer caps to reflect current gas market prices, can result in inefficient scheduling of resources when caps for commitment costs and energy offers are based on materially incorrect gas price estimates.[4] This inefficient scheduling raises the cost of

[1] The participation of Dr. Bushnell, Dr. Harvey, and Dr. Hobbs in this Opinion were as paid consultants for the California ISO. All opinions expressed and implied in this document are solely those of the authors and do not represent or reflect the views of their employers.

[2] CAISO, "Gas Resource Management, Draft Final Proposal," Sept. 17, 2025, stakeholdercenter.caiso.com/InitiativeDocuments/Draft-Final-Proposal-Gas-Resource-Management-Sep-17-2025.pdf, and CAISO, "Gas Resource Management, Final Proposal," Nov. 14, 2025, stakeholdercenter.caiso.com/InitiativeDocuments/Gas-Resource-Management-Final-Proposal-Nov-14-2025.pdf. All materials, including stakeholder comments, for the GRM Initiative can be found at stakeholdercenter.caiso.com/StakeholderInitiatives/Gas-resource-management-working-group.

[3] E.g., CAISO, "Aliso Canyon Gas-Electric Coordination, Revised Draft Final Proposal", May 4, 2016, www.caiso.com/Documents/RevisedDraftFinalProposal_AlisoCanyonGas_ElectricCoordination.pdf.

[4] Day-ahead gas market indices form the basis for default energy bids for energy offers for gas resources. On the other hand, in the first few years of the MRTU market, commitment costs were limited by the registered cost option, whose levels were updated only monthly. As a result, commitment costs, including start-up and Pmin costs, could be greatly understated during times of gas price volatility. When commitment cost limits lagged increases in gas prices, this sometimes resulted in the market software committing more generating units than is optimal. At the same time default energy bids based on higher, more up-to-date gas prices sometimes discouraged incremental dispatch, resulting in running those same units at inefficient minimum run levels. See CAISO, "Commitment Costs and Default Energy Bid Enhancements, Second Revised Draft Proposal," March 2, 2018,

meeting load, can result in cost shifts across market participants and can have adverse reliability impacts when gas cannot be procured to cover CAISO schedules.

While the CAISO has implemented important changes over the years to better reflect current gas market prices in the calculation of reference levels (default energy bids and commitment cost caps), there are continuing issues, particularly in regions outside California with different gas supply infrastructure. Moreover, the imminent go-live of EDAM, and the hoped for growth of the EDAM footprint over the next few years, will potentially contribute to increased gas price variability for EDAM participants, particularly when purchasing gas outside the morning gas market.

Issues of natural gas and electricity system coordination have been a major focus of MSC discussions at its public meetings over the years,[5] as well as several Opinions. In particular, the MSC has issued Opinions concerning the proposed revisions of commitment cost and default energy bid rules, focusing on anticipated effects of proposals on incentives to make resources available to the market and for cost-based offers, and the resulting impacts on system costs, reliability, and prices.[6] Most recently, the MSC held a public meeting on Sept. 19, 2025 on the CAISO GRM initiative that is the subject of this Opinion, with presentations by CAISO staff and an MSC member.[7]

As described in the Final Proposal (FP), this initiative is an effort to respond to the ongoing challenges of coordinating the West's gas and electric systems, which differ in gas storage and operating practices across the West. These challenges have become more important to manage for the CAISO's market designs because of the expansion of the Western Energy Imbalance Market. The launch of the Extended Day-Ahead Market will create additional challenges due to the timing of EDAM schedules being posted after the morning gas market for timely nominations, and the expanded participation of resources in EDAM relative to the Western EIM.

The challenges raised by these changes in the Western markets raise concerns about whether the expectations that the draft FP refers to as forming the basis for the CAISO's present management

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stakeholdercenter.caiso.com/InitiativeDocuments/SecondRevisedDraftFinalProposal-CommitmentCosts-DefaultEnergyBidEnhancements.pdf. In our Opinion on CCDEBE, we make the general point "that bids must be able to fully reflect all the costs faced by resources so that suppliers can be assured that their costs will be covered; to do otherwise provides incentives to offer inflexibly ("self-schedule") or to not offer at all, which reduces the ability of the operator to reach a reliable and economic market solution and increases consumer costs" (J. Bushnell, S. Harvey, and B.F. Hobbs, "Opinion on Commitment Costs and Default Energy Bid Enhancements (CCDEBE)," Market Surveillance Committee of the California ISO, March 5, 2018, www.caiso.com/documents/mscfinalopinion-commitmentcost_defaultenergybidenhancements-mar5_2018.pdf, p. 4).

[5] E.g., CAISO MSC Public Meeting, Sept. 19, 2016, where measures to mitigate the impact of the Aliso Canyon outage were discussed (www.caiso.com/documents/briefingonalisocanyonmitigationmeasures-sept19_2016.pdf).

[6] See especially J. Bushnell, S. Harvey, and B.F. Hobbs, "Opinion on Commitment Costs and Default Energy Bid Enhancements (CCDEBE)," op. cit.. Table 1 in that Opinion lists 12 previous Opinions addressing commitment costs and their mitigation.

[7] Sylvie Spewak, "Gas Resource Management," www.caiso.com/documents/presentation-gas-resource-management-sep-19-2025.pdf and Dr. Scott Harvey, "Gas Market Discussion," www.caiso.com/documents/presentation-gas-market-sep-19-2025.pdf

of gas resource participation are applicable for all market participants in the West.[8] The challenges concern how to meet the following four goals:

1. To enable EDAM participants to better reflect the cost of purchasing gas in their EDAM offer prices, potentially reducing the level of gas purchases in the afternoon market required to cover EDAM generation schedules, and better aligning EDAM prices with generating costs,
2. To enable EDAM participants to qualify for after-the-fact cost recovery in some additional situations when gas costs are not reflected in offer prices, and
3. To enable EDAM participants to better anticipate EDAM schedules in purchasing gas in the morning gas market, reducing the amount of gas that must be purchased and scheduled in the afternoon.
4. To ensure that market rule changes to address the above three challenges should not enable the exercise of material locational market power.

If not effectively addressed, the challenges of meeting those goals could materially reduce the benefits from EDAM participation and potentially undermine the continued ability of the Western EIM to deliver market and reliability benefits across the west. We discuss these challenges in more detail within Section II of this Opinion, below.

In response to these challenges, the Final Proposal includes four groups of enhancements, three of which we discuss in this opinion:

1. Changes to the calculation of reference levels (default energy bids, commitment cost caps) for resources with atypically high levels of gas cost variability relative to the standard default energy bid calculation, providing these gas-fired generators with more ability to reflect gas costs in their EDAM offer prices.[9]
2. Additional rules to enable after the fact recovery of gas costs during supply disruptions.
3. Changes to advisory market runs prior to the IFM to improve fuel procurement forecasts available within gas nomination timelines, especially in the D+2 timeframe.
4. Inclusion of additional options for gas burn limitations to manage gas system constraints that impact a resource's costs and availability.

The first three groups of enhancements represent changes to the existing tools that the CAISO has to accomplish the four goals stated above. These changes include: improvements to the reference level change request process, improvements to the after-the-fact cost adjustment process, and provision of multi-day ahead advisory IFM schedule information. We discuss these changes in Sections III and IV below.

Regarding the fourth group of enhancements, we support the potential development of tools for managing gas burn limitations outside the CAISO balancing area. Such tools could be useful if

[8] CAISO, "Final Proposal," op. cit., pp. 5.

[9] The CAISO also states that it supports improvements to its software systems to improve the ability of market participants to submit automated reference level changes in a timely manner ,but does not identify any specific changes that it intends to make (CAISO, "Final Proposal," Section 3.6, p. 25).

another outage situation or bottleneck like the Aliso Canyon failure arises. However, we do not have information that would allow us to assess how well the CAISO's approach, which is very general, would meet individual market participant needs across EDAM and the WEIM. Hence, we do not comment on this element of the design.

In summary, we believe that these changes should help provide some more information and flexibility to market participants, and therefore are worth pursuing as long as implementation costs are not significant. At the same time, there are ongoing concerns that will remain even after these changes are implemented. Market participants have raised concerns about the usability of the RLCR process for requesting adjustments to gas costs, noting that it is complex and tedious. There remains an inability to easily account for cost changes associated with unit fuel switching. Most significantly, the ongoing absence of any test for supplier market power in capping commitment costs means that the commitment costs of all gas units will continue to be mitigated in every dispatch interval in real-time and every hour in the day-ahead market, This lack of a test means that units lacking market power will be subject to potentially inefficient mitigation, while the flexibility offered in this proposal may provide units that truly possess market power with overly generous offer bounds. We believe that the development of a workable test for market power in commitment cost is long overdue and should be a high priority going forward.

II. EDAM Challenges

A core element of the EDAM design, which is key to realizing potential EDAM cost savings, is full participation of resources in the EDAM market; that is, balancing area operators, and other EDAM market participants, can be scheduled in EDAM to meet the load of other load serving entities. This increased scheduling of EDAM participant resources increases the potential for large amounts of gas-fired generation to be scheduled in EDAM to support exports that might not have been anticipated by the EDAM participant when they bought gas in the morning gas market. As a result, while EDAM balancing areas and other market participants will remain able to manage their own load or contractual obligations, they will have less information about how they might be scheduled in EDAM to meet load elsewhere within the EDAM footprint, The larger the EDAM footprint becomes, the more likely that a participant's EDAM schedule would include significant and unpredictable export schedules that the resource operator would not be able to predict at the time of the morning gas market. Because the schedules in EDAM, including the portion supporting exports, would not be posted until after the timely gas market and pipeline scheduling cycle, there is a potential for EDAM schedules to shift additional gas purchases into the afternoon or evening gas market and nomination cycles.

Such a shift in the timing of gas purchases could, on some operating days, have the effect of shifting the gas purchases needed to cover EDAM schedules into a less liquid afternoon gas market from the more liquid morning (day ahead) cycle. This could raise gas purchase costs and perhaps increase gas scheduling uncertainty. The main tool EDAM market participants have for managing this uncertainty is their EDAM offer prices. Offer prices from gas units can be used to limit EDAM participant's exposure to EDAM generation schedules that would require large gas purchases in the afternoon gas market, gas purchases that might be very costly or perhaps not

even feasible. However, as we discuss below, capping of commitment costs can limit the ability of EDAM participants to use offer prices to limit their gas market exposure. Furthermore, the application of market power mitigation in the energy market can also result in EDAM scheduling the operation of more gas-fired generation than was anticipated in morning gas market purchases. This will normally not be an impact of mitigation applied to incremental energy bids, as that mitigation would be applied when the balancing area is import constrained or located within an import constrained region, and gas purchases would often be those needed to meet balancing area load. However, the capping of commitment costs when there is no transmission congestion or potential for the exercise of market power in the energy market has a greater potential to result in EDAM schedules supporting balancing area exports.

All these factors combine to raise the value of timely and accurate information about the gas purchases EDAM participants may need to make. Part of this current initiative has focused on the CAISO providing an advisory schedule two days (D+2) in advance of real-time operations, as discussed in Section IV. If the CAISO were able to develop a reliable D+2 forecast of day-ahead market schedules, this would enable EDAM balancing areas, and other EDAM market participants as well, to schedule more gas to cover their EDAM schedules in the timely morning gas market and be less dependent on gas purchases in a potentially much less liquid afternoon market.

III. Default Energy Bids and Mitigation of Commitment and Energy Offer Prices

3.1 Issues

3.1.1. Issue 1: Congestion Magnification of Export Scheduling Uncertainty. As just mentioned and as discussed in Section IV below, forecasts of D+2 schedules may not prove to be significantly helpful for informing timely gas purchases, particularly gas purchases needed to support exports scheduled in the EDAM market. If this proves to be the case, EDAM participants will need to have the ability to manage their gas price and availability risks through offer price. This means either expanding the buffer range allowed for when calculating reference levels (default energy bids, commitment cost caps) and/or limiting the scope of units that are subject to mitigation. This is the focus of the set of changes proposed by the CAISO that are discussed in this section. If the CAISO does not provide EDAM market participants sufficient offer price flexibility to manage EDAM gas risks, both for incremental energy offers and for commitment cost offers in particular, this may slow or deter participation in EDAM or result in greater than intended use of the EDAM export constraint, reducing the benefits of EDAM participation.

Given the challenges in forecasting D+2 schedules, the CAISO should anticipate that gas-fired generators scheduled to support significant exports in EDAM will purchase gas to cover EDAM export schedules in the afternoon gas market and schedule gas in the evening pipeline nomination cycle. Ideally EDAM participants could utilize their EDAM offer prices to limit their exposure to large purchases in the afternoon gas market on days when they expect limited liquidity in the afternoon gas market. However, bid mitigation may limit their ability to do so.

Absent mitigation of EDAM energy offer prices, EDAM market participants should be able to manage the quantity and price risks associated with gas price scheduling and pricing in the afternoon market associated with EDAM export schedules with their EDAM offer prices. These offer prices could be used to limit the amount of incremental gas they might need to purchase in the afternoon cycle (to cover potential EDAM export schedules) in excess of their morning gas purchases (which would be known when the EDAM participant submits its offer prices). Hence, unmanageable price and quantity risks should mostly arise in EDAM when CAISO schedules the operation of gas-fired resources to support EDAM exports based on default energy bids or commitment cost caps that are materially lower than market participant offer prices.

The replacement of market participant offer prices with default energy bids can arise as a result of transmission congestion impacting a balancing area that might create the potential for the exercise of material locational market power. Our understanding is that mitigation of energy offer prices triggered by transmission congestion is relatively rare in the Western EIM. Although we are not aware of public data on the frequency of mitigation, data compiled by the CAISO Department of Market Monitoring indicates that the Western EIM balancing areas within California as well as several BAs in the desert southwest are very infrequently import constrained relative to the CAISO. Hence there seems to be only a rare potential for the exercise of market power in those regions, and mitigation would be triggered infrequently by congestion. Other balancing areas, particularly in the desert southwest and intermountain west are also rarely import constrained relative to the CAISO. [10] Overall, the Western EIM balancing areas with the greatest reliance on gas fired generation appear to have limited exposure to offer price mitigation triggered by congestion.

It is possible that changes associated with EDAM will result in more frequent congestion but it is not apparent why that would be the case.

3.1.2 Issue 2: Effect of Commitment Cost Caps on Schedule Uncertainty. A more problematic issue for EDAM market participants will be the impact of caps on commitment cost offers, as these offer caps are now applied every day without regard to the existence of potential market power, either in the energy market or with respect to commitment costs and inflated BCR payments. The main source of gas price and availability risk for most Western EIM entities currently arises from the application of the commitment cost caps without regard to the presence of transmission congestion in the energy market. The current design for capping commitment

[10] For example, in 2024 Arizona Public Service, Nevada, Public Service Company of NM, and WAPA Lower Colorado appear to have been constrained up relative to the CAISO in less than 1% of all hours, while El Paso, SRP, Tucson and PacifiCorp East appear to have been import constrained relative to the CAISO in 5% or less of all intervals (CAISO Department of Market Monitoring; 2024 Annual Report on Market Issues and Performance, Aug. 7, 2025, estimates based on Figures 5.1 and 5.2, p. 168). In 2023 the balancing areas within the CAISO, Nevada and APS were import constrained relative to the CAISO in less than 0.5% of 15 minute market intervals, according to DMM data, while WAPA, Public Service New Mexico and Tucson were import constrained in less than 5% of 15 minute market intervals (see CAISO, Department of Market Monitoring; 2023 Annual Report on Market Issues and Performance, July 29, 2024, Table 3.6, p. 158). The 2022 data appear to be rounded to the nearest percent with LADWP, BANC, APS, Nevada and Public Service of New Mexico reported as 0% and Turlock, PacifiCorp east, Tucson and Salt River Project reported as less than 5% (CAISO Department of Market Monitoring; 2022 Annual Report on Market Issues and Performance, July 11, 2022, Table 3.3 p. 12).

costs offers makes it extremely important that the CAISO processes for adjusting reference levels (default energy bids, commitment cost caps) be accurate and workable on all days.

3.1.3 Issue 3: Reference Level Change Request (RLCR) Process. The CAISO has made a number of changes over the years to better reflect actual gas market costs in the calculation of default energy bids and commitment cost caps. An important improvement was shifting from calculating these reference levels based on the prior day gas price index to calculating them based on early gas trading for the current gas day. Such DEBs and commitment cost caps may still sometimes understate actual gas purchase costs in the morning gas market, but they are more accurate under the new design. However, basing those reference levels on prices in trading in the morning market can materially understate gas purchase costs in the afternoon gas market, in the intra-day gas market, or at locations with limited trading.

To address the potential for understated default energy bids and commitment cost caps in these circumstances, the CAISO has implemented the automated and manual RLCR processes that enable adjustments to the default energy bid calculated by the CAISO.

DMM has compiled data on the frequency of use of the automated and manual processes by CAISO and Western EIM market participants over the 2023 -2025 period. These data show low average use (over all units on all days) of the automated RLCR process by CAISO market participants, and no use by Western EIM participants over the same period.[11]

On the other hand, western EIM entities have made complaints going back several years regarding the RLCR process. These complaints have included 1) the timing requirements; 2) the complexity of the required process for submitting bids and requests (called SIBR); and 3) that the automated process requires that a separate request be submitted for each unit.

We are not market participants and have no visibility into the complexity of the bidding process, nor of the ability of gas-fired generators to use automated processes to submit the information required for RLCR requests for multiple units within the CAISO timelines. We are able to observe the number of gas-fired units or unit components operated by some Western EIM participants, which is relatively large in some cases, particularly for EIM participants in the southwest. One consequence of the large number of gas-fired units operated by some Western EIM participants is that processes that may be manageable for the CAISO balancing area's market participants might not also be workable for some Western EIM participants.

For example Arizona Public Service lists 29 combustion turbines and 7 combined cycle units in its most recent SEC 10-K filing.[12] Tucson's most recent 10-K is less clear regarding the number of standalone gas turbines vs combined cycle components, but it is clear there are at least 18 gas-fired generating units.[13] Nevada's most recent 10-K does not list individual units or components but lists 10 stations with gas-fired generation which would be a substantial number of individual

[11] CAISO Department of Market Monitoring, "Supplemental Comments on Gas Resource Management Draft Final Proposal," October 15, 2025, p. 3.

[12] fintel.io/doc/sec-pinnacle-west-capital-corp-7286-10k-2025-february-25-20144-5205, p. 50.

[13] www.sec.gov/Archives/edgar/data/100122/000010012225000004/tep-20241231.htm, p. 5.

components if there are 2 or 3 at each station.[14] Salt River Project as a public power entity does not file a 10-K but information on its resources posted by Salt River indicates that it operates more than 30 gas-fired units including combined cycle components.[15]

We have also reviewed written stakeholder comments and the CAISO presentations at the beginning of these stakeholder process and have observed that concerns with the RLCR process were an early focus of stakeholders in this process. For instance, the CAISO's March 5, 2024 Gas Resource Management Working Group 8 presentation[16] listed the following as stakeholder problem statements (PSs):

- PS6A "The automated reference level change request process is complex and does not always lead to change request approval." (slide 15)
- PS6 "The automated reference level change request process can only be submitted for one resource at a time." (slide 39)
- PS7 "Stakeholders to (sic) not have the actual gas cost information necessary to submit a manual reference level change request by the 8am deadline." (slide 39)
- PS9A "When switching fuel hubs/fuel regions in response to critical events, generators are unable to reflect accurate costs in the market in a dynamic or timely manner." (slide 40)
- PS9B "Generators that switch fuel regions regularly have trouble reflecting their costs accurately in the market." (slide 40)
- PS10 "When switching fuel types generators are unable to reflect accurate costs and operating parameters in the market in a dynamic or timely manner" (slide 40)

The CAISO reported in January 2024 that only 8 of 72 manual reference level adjustments had been approved since 2021.[17] The CAISO reported that 26 of the requests were denied because of "invalid cost basis for request." While perhaps some of these failures reflect a failure to follow instructions, this high failure rate raises the question of whether there are issues with the way the cost basis rules are applied and the workability of the requirements. Similarly, 21 of the failures were due to "(t)icket lacked necessary supporting documentation." While this might be the fault of the market participant, it might also be a result of what the CAISO requires as documentation generally being unavailable in the required timeframe, or at all.

The reference level adjustment process requires submission of change requests by 8 a.m. This differs from the requirements of similar processes in eastern ISOs and may be an important reason for limited use of reference level adjustments, since market participants may not know of the need for an adjustment until after the 8 a.m. deadline. We understand that the 8 a.m. deadline may be a result of SIBR functionality, and it would be difficult to change without material changes to the SIBR interface and functionality. We think the CAISO should view any needed changes to SIBR as a long-term goal, one that may take a few years to implement. Some of

[14] fintel.io/doc/sec-berkshire-hathaway-energy-co-71180-10k-2025-february-24-20143-3954, p. 24.

[15] www.srpnet.com/grid-water-management/grid-management/power-generation-stations

[16] stakeholdercenter.caiso.com/InitiativeDocuments/Presentation-GasResourceManagement-Mar5-2024.pdf

[17] CAISO, Gas Resource Management, Working Group 7, January 25, 2024, p. 32

these gas market issues likely will not be as large an issue for early EDAM participants such as PacifiCorp as they may be for entities joining EDAM in later years.

These workability issues will be even more important under EDAM as reference level change requests to cover the cost of purchasing gas in the afternoon cycle will necessarily be based on expectations. At the time of EDAM bid submission, there will not be information available about costs to buy gas in the afternoon cycle. The manual process will therefore probably not provide a mechanism to recover expected afternoon cycle gas costs in offer prices. This will require that EDAM participants submit unit by unit automated requests based on expected gas prices in the afternoon market that would be capped. The CAISO appears to recognize this, stating in the final proposal that "(t)he automated RLCR process offers resources the opportunity to reflect actual and *expected* costs in the market without requiring the CAISO consider supporting documentation ahead of time."[18] This makes the workability of the RLCR process very important for EDAM.

We therefore support the CAISO's commitment to enhance SIBR to make it easier for scheduling coordinators to submit reference level adjustments. [19] The CAISO should also be able to establish a process for in-day changes to fuel costs to reflect fuel switching. Not only do eastern ISOs have such processes today, the New York Power Pool and PJM Interconnection were able to accommodate this back under power pool operation in the 1990s. CAISO should be able to do this. We have a sense from talking with CAISO staff that some these issues with fuel cost adjustments are a result of the combined operation of a number of rules, so resolving the issue may require multiple changes and may not be implementable on a short-time line. Hence, it is important to the take the time to get the changes made. The goal of this process should be to enable gas-and dual-fired generators to reflect their costs in the market, and constrain the exercise of market power, not maintaining particular offer rules or a fuel policy.

3.2 Proposed Changes to Bid Mitigation

To help lessen the risks just described, the CAISO proposes to provide some additional offer price flexibility to EDAM market participants subject to offer price mitigation. This additional flexibility would apply to energy offer mitigation that is contingent on congestion, as well as to mitigation in the form of commitment cost caps – which apply all the time regardless of congestion and the potential for the exercise of market power - either in the energy market or through inflated BCR costs. Under the FP, the availability of this offer price flexibility would be conditioned on the CAISO's evaluation of the frequency that resource gas cost would fall outside the range covered by the default calculation. This evaluation could be based on historical RLCR requests or other information such as historical fuel cost data.[20]

Data on gas price variability at selected EDAM gas trading hubs compiled by CAISO shows that there is often material gas price variability between the day-ahead market and Intercontinental

[18] CAISO, "Final Proposal," op. cit., p. 9

[19] Ibid., Section 3.6, p. 25.

[20] Ibid., Section 3.3.3.b, p. 20.

Exchange (ICE) trading in the operating day intra-day market.[21] The CAISO has not reported data on the variability of morning gas market prices relative to afternoon gas market prices. This variability will likely be somewhat less relative to that in the intraday market, but no data have been made available in the stakeholder process to assess how much less the variability might be relative to afternoon market prices. On the other hand, the reported data does not include all reported gas trading points in the Western EIM footprint, such as Northwest Sumas and Northwest South of Green River, so variability may be higher at some locations, and the CAISO data does not reflect variability of gas transaction prices at locations that are not ICE traded gas hubs.

The CAISO proposal as we understand it would allow the CAISO to implement an adjustment to reference levels (DEBs or commitment cost caps) based on historical gas price data as well as RLCR requests.[22] These are good features but we should recognize that there may not be historical gas purchase data for a particular resource in the intra-day or afternoon market if the scheduling coordinator bought gas in the morning market to cover a base schedule or if the resource was not offered in the Western EIM intraday market, with the result that there was no historical need to buy gas in the intra-day gas market and hence no need to submit RLCR requests on many days in the historical period.

Moreover, as CAISO and market participants have predicted, if there is an increase in the amount of gas scheduled in the afternoon gas market, the spread between morning gas prices and afternoon gas prices could increase. Absent evidence that the CAISO will be able to develop D+2 forecasts that are accurate enough to guide morning gas market purchases to support exports, the CAISO should anticipate increased spreads between the morning gas prices and afternoon gas costs, such that the price differences calculated by the CAISO based on historical data will increase under EDAM.

Conversely, when a resource is needed to meet balancing area load, rather than scheduled to support exports, there may be no need to defer gas purchases until the afternoon market, so additional bid flexibility might not be warranted if the balancing area is import constrained or located within another relatively small constrained region and there is potential for exercise of material locational market power.

3.3 What is the Right Standard for Flexibility?

A central challenge the proposal confronts is how to measure the frequency and severity of the market impacts of reference levels (DEBs or commitment cost caps) that are based upon inaccurate gas costs of specific units. The difficulty is that the inaccuracies are due to the absence of the very data – liquid and transparent gas prices - that would ideally be used to measure the magnitude of the problem. In the absence of continuous, highly granular gas price

[21] Sylvie Spiewak, CAISO, "Gas resource management straw proposal," Presentation, August 12, 2025, https://stakeholdercenter.caiso.com/InitiativeDocuments/Presentation-Gas-Resource-Management-Straw-Proposal-Aug-12-2025.pdf, p. 29.

[22] CAISO, "Final Proposal," Section 3.3.3.b, p. 20.

data, the CAISO proposes to rely in part on using the frequency of participant change requests as a proxy for the frequency of significant errors in estimating gas prices at that location.

Another premise for the design and scope of the changes is framed in terms of the frequency with which EDAM participants would need to rely on the RLCR process in order to be able to recover their gas costs in market prices. The underlying consideration is to use these triggers to reduce the frequency that participants would have to rely upon this process. This consideration will be particularly important if it is indeed the case that the RLCR process is often unworkable for market participants facing substantial variability in gas purchase costs. Conversely, if use of the RLCR process becomes a trigger for adjustments to resource reference levels (DEBs or commitment cost offers), it will become more important for the CAISO to audit RLCR requests that are not associated with the expected level of price variability in the gas price data available to CAISO.

On the other hand, another consideration that should enter into this assessment would be the magnitude of the potential increase in prices as a result of the exercise of locational market power that might be enabled by greater offer price flexibility. If it were necessary to potentially allow a 50% increase in prices through the exercise of locational market power in order to achieve a target level of reliance on the RLCR process, in our view that would be valid reason to set lower DEBs and accept a greater frequency of reliance on the RLCR process. Conversely, however, if there were no potential for increases in energy prices due to the exercise of market power because there was no transmission congestion that could enable the exercise of locational market power, that would be a consideration arguing for a design with even less reliance on the RLCR process to enable greater offer price flexibility.

3.4 Trigger for Automatic Adjustment Flexibility

The CAISO has added to the DFP the concept of a possible future trigger for additional automatic adjustment flexibility based on changes in load forecast between the D+2 run and the day-ahead market forecast.[23] In the FP, the CAISO has added the concept of a trigger for a higher reference level (DEB, commitment cost cap) based on changes in variable energy resource (VER) forecasts. Not only does this future concept not address near-term EDAM gas scheduling issues, it is not clear it is a good design even in the long-run.[24]

As stakeholders have pointed out, it is not load forecast errors at the EDAM footprint level that are the core concern, rather it is unpredictable variations in EDAM schedules at the balancing area or other variations at the scale of individual EDAM market participants.

In order to base the trigger on market participant level schedule variations, the trigger would need to be based on the difference between the D+2 balancing area schedule and the day-ahead

[23] Ibid., Section 3.4.2, pp. 23-24.

[24] The CAISO also proposes a concept of a trigger for increased real-time offer price flexibility based on day-ahead schedules exceeding the D+2 forecast. But as the CAISO notes, this offer price flexibility would only be applicable to incremental real-time offers, as the day-ahead market schedules would already have cleared. It is not clear how this concept would address any gas supply issues (ibid.).

market balancing area schedule. The day-ahead market schedule would not be known when energy offer prices are capped by default energy bids, so it could not be used as a trigger. Alternatively, the CAISO could compare D+2 market power run schedules to day-ahead market power run schedules, but this would introduce considerable additional complexity because these schedules could be impacted by changes in market participant offer prices between D+2 and the day-ahead market. For example, a market participant could submit higher offer prices in the D+2 run than in the day-ahead market, likely resulting in higher schedules in the day-ahead market power run than in the day-ahead market mitigation run, enabling a higher adjustment. Conditions could be applied conditioning the trigger on offer prices that are the same or higher in the day-ahead market than in the D+2 run, but this would add complexity.

The CAISO proposes in the FP to avoid dependence on market participant behavior by basing this flexibility on changes in both VER and load forecasts between the D+2 forecast and the day-ahead market. However, it is not clear why this would be a good trigger. It is not clear how changes in, for example, the PacifiCorp East VER forecast would be related either to changes in Nevada exports or an increase in needed offer price flexibility for either PacifiCorp or Nevada.

Moreover, triggers determined by changes in schedules based on unmitigated offer prices might be completely unrelated to changes in schedules based on mitigated offer prices. There is a need to ask whether implementing these ad hoc fixes in a way that addresses market participant concerns while avoiding creating new problems would be far more complex than making needed changes in the application of offer caps on commitment costs.

3.5 Commitment Cost Mitigation Issues

A fundamental problem with the CAISO design is that the CAISO will continue to cap commitment costs based on proxy costs that it knows will at times be substantially inaccurate. Further, the CAISO will continue to apply this offer cap without regard to the potential for the exercise of market power in either the energy market or in commitment cost bid cost recovery (BCR).

A screen that could at a minimum exclude plants with no plausible market power from the commitment cost cap is clearly needed. Changes were approved under the CCDEBE initiative by the CAISO's Board 7 years ago to address these known problems but have never been implemented.[25] The CAISO has outlined a variety of reasons for this in various presentations and proposals.[26] The general point seems to be that some elements of the CAISO's original proposal were overly complicated and too difficult to implement. At that point, the entire effort was apparently suspended. The CAISO did not anticipate such problems in the original stakeholder process, nor did the CAISO come back to stakeholders to develop either simplifications to address implementation challenges or tweaks to address any other types of valid issues that may have been identified.

[25] www.caiso.com/library/board-of-governors-meeting-mar-21-22-2018-board-7.

[26] CAISO, Straw Proposal, July 25, 2025, p. 38.

We understand that the CAISO design for offer price flexibility enables gas-fired generators to, first, submit EDAM commitment cost offer prices in a low range covering the cost of gas already purchased to cover balancing area or contract load in the morning gas market and, simultaneously, submit higher prices that make use of increased offer price flexibility to cover the cost of afternoon gas purchases that would support the commitment of gas-fired generators to cover EDAM schedules in excess of balancing area load. We believe this feature is an essential part of the EDAM gas management design, given the clear reality that EDAM participants will not have reliable D+2 forecasts on which to base morning gas purchases to support exports scheduled in EDAM.

We welcome the CAISO's commitment to hold a stakeholder process next year to address commitment cost cap changes.[27] It is important that it move forward on a fast track. It may be important to long-run EDAM and WEIM success. But it has been 7 years since the CCDEBE commitment cost changes were approved by the CAISO and Western EIM boards. There appear to be problems with the current commitment cost caps that could materially impact EDAM success. Those problems might even affect the willingness of a balancing area with substantial gas-fired generation to participate in EDAM, or the extent to which EDAM participants make use of the export cap to limit exposure to gas supply price and availability risk, thereby reducing EDAM benefits. The proposed changes to the default energy bid may have some benefits but this is unclear.

The continued imposition of these commitment cost caps with their known flaws is particularly troubling, given the lack of apparent evidence of a market power problem with WEIM commitment cost BCR that needs to be addressed.

Much of the commitment cost related BCR in the western EIM is likely due to changes in the net load forecast between the time a resource was committed based on economics and actually came on line. To assess whether BCR payments are due to resources that must be committed despite high commitment costs, the CAISO could assess what the BCR would have been on a set of units offering at or near the commitment cost cap based on the FMM prices in the RTPD run that committed the resource, compared to actual BCR. If the BCR is largely due to differences in prices and schedules between the two runs, the BCR is not due to the ability to submit high commitment cost offers on resources that must be committed.

3.6 Improved After-the-Fact Cost Recovery

The Final Proposal includes changes to allow increase after-the- fact cost recovery of gas costs during gas supply disruptions.[28] This change may help improve cost recovery in some circumstances, but it does not address the core problems that presently exist with the current cost recovery design and may create new problems and incentive issues.[29] If gas-fired resources were

[27] CAISO, "Final Proposal," op. cit., p. 6

[28] Ibid., Section 3.5.

[29] A core problem with the current cost recovery design is that the cost recovery allocates costs to balancing area customers, so the WEIM utility still may have to cover the cost of gas for exports from BAA customers. On the other hand, if the cost recovery design is changed, the revised rules might undermine incentives to take costly

not subject to commitment cost caps when they lacked the potential to exercise market power, they would be able to manage these risks with their offer prices. Because the CAISO restricts their ability to do this, the CAISO is being drawn into providing after-the-fact cost recovery for costs the resource operator should manage,

Some level of inaccurate DEBs and commitment cost caps will be inevitable. Moreover, given the uncertain workability of the CAISO RLCR process, it is desirable to improve after-the-fact recovery of gas costs not recovered in market prices as a result of understated commitment costs or default energy bids for incremental energy offers.

The current CAISO after-the-fact cost recovery proposals are unsatisfactory from the standpoint of how BCR costs are recovered and how costs may be potentially shifted among balancing areas. The current CAISO proposals for changes to after-the-fact cost recovery rules also do not address fundamental problems with the current cost recovery design.

In particular, the ex post cost recovery design has two fundamental flaws that are not addressed by the CAISO's proposed changes. These flaws can result in undue cost shifts from commitment cost mitigation.[30]

First, the CAISO's current and proposed ex post cost recovery design caps recovery at the "lower of" the unmitigated offer price and the actual documented gas costs.[31] Moreover, the after-the-fact recovery is conditioned on the seller submitting an RLCR request. The overall impact of this design is that the resource owner will not recover all of its gas costs over time. A generator recovers just its actual costs when it *over*estimates gas costs, and when it *under*estimates it will only recover those underestimated costs. This means perfect foresight is required to break even if commitment cost caps are binding. In addition, this "lower of" approach gives gas resources an incentive to bias their offer prices upward, as they will lose out on recovery if their estimates turn out to be below their actual costs. However, if the gas-fired resource lacks market power, raising offer prices will reduce the likelihood of being profitability committed. Moreover, since eligibility for after-the-fact cost recovery is contingent on submission of revised gas costs through the RLCR process, the entire after-the-fact cost recovery process is irrelevant if the existing RLCR process is rarely used because it is overly burdensome or because it is unworkable because of tight deadlines.

Second, our understanding is that BCR due to recovery of after-the-fact resource gas costs would be allocated proportionately to balancing area load and exports. If balancing area load is met with gas purchases in the timely gas market, and gas cost losses are incurred largely from buying gas in the afternoon gas market to cover EDAM exports, this recovery cost allocation design

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advance actions to reduce the impact of possible disruptions; the incentive is undermined because the recovery does not help the utility.

[30] These cost shift issues are potentially less material for incremental offer price mitigation triggered by import congestion, as long as the mitigation based on market power pass congestion does not result in EDAM exports being scheduled in the market run.

[31] BPM for Market Instruments, Attachment 03.2

would allocate most of the gas cost losses stemming from EDAM exports to balancing area load (and bilateral exports).

3.7 Mitigation Summary

Historically the RLCR process has not been used outside of CAISO. This lack of use by Western EIM entities may be because they had no need of the process. Another possibility is that *a* process is needed but the current one is not used because it is unworkable, particularly for Western EIM entities. Data presented by the CAISO on gas price variability suggests there is indeed a need for a Reference Level Change process in the Western EIM. Perhaps Western EIM participants manage these price risks by limiting the resources they offer in the Western EIM market and making use of Available Balancing Capacity rules to limit the availability of resources requiring high-cost gas purchases. We lack the information to resolve these uncertainties.

Meanwhile, flaws in the after-the-fact recovery process almost ensure that some gas costs will be left unrecovered through that process. Moreover, the bulk of the out-of-market cost recovery would be allocated to balancing area load and bilateral exports, thereby shifting costs incurred to support export schedules onto either balancing area loads, loads both of the balancing area operator and other load serving entities, or exports within the balancing area. We do not view this as an acceptable design for allocating unrecovered gas costs attributable to CAISO commitment cost caps.

IV. Advanced Day-Ahead Market Forecast

The CAISO proposes to utilize D+2 forecasts to inform EDAM market participants of expected day-ahead market schedules prior to the morning gas market. If these forecasts are sufficiently accurate, they could be used by market participants to better tie their morning gas purchases to their day-ahead market EDAM schedules and reduce the amount of gas they need to buy in the afternoon gas market.

The CAISO objective of developing reliable D+2 schedule forecasts is therefore a good one. However, we need to be conscious that the issue is not the desirability of the objective, but if, and how well, it can be achieved with the design proposed by the CAISO, or with any other design. As we discuss below, this is a difficult forecasting exercise, and the CAISO has not provided information to instill confidence in the quality of this forecast as of EDAM initial go-live date.

The CAISO has worked with potential EDAM participants, and other stakeholders, to develop an improved framework for the CAISO to use in producing D+2 schedule forecasts and making these forecasts available to EDAM participants. However, it is not enough for the CAISO to generate D+2 forecasts, nor enough to generate somewhat better D+2 forecasts than today. The

D+2 forecasts need to be good enough to be useful to EDAM participants in determining the level of their timely gas market purchases.[32]

If the D+2 forecasts are not accurate enough for EDAM participants to use them to guide their morning gas market purchases, then EDAM participation will at times result in increased participation in the afternoon gas market, particularly to cover EDAM export schedules, with increased exposure of EDAM participants to price and gas availability risks.

It may prove to be very difficult, if not impossible, to provide sufficiently accurate EDAM schedule forecasts in advance of the morning gas market to helpfully inform gas purchases in the morning gas market, particularly gas purchases needed to support exports scheduled in the EDAM market. If this proves to be the case, EDAM participants will need to have the ability to manage their gas price and availability risks through offer prices, as discussed above in Section III.

It is possible that the accuracy of the D+2 forecast will not be an issue for PacifiCorp, or other early EDAM participants, because of their specific resource mix and gas supply sources. We cannot assess the importance of D+2 forecast accuracy for individual balancing areas. Each potential EDAM participant will need to assess its ability to manage its gas purchases and gas price risk within the context of the CAISO design. This opinion discusses the higher level issue of whether the proposed GRM design will enable EDAM participants to better forecast their timely gas market purchases and manage gas scheduling by other means.

We agree that the CAISO is, in general, better positioned than individual EDAM participants or private vendors to provide reliable D+2 forecasts of market participant level EDAM schedules that account for exports because only the CAISO will have visibility of import and export schedules across the EDAM footprint. It is therefore reasonable for the CAISO to try to use its processes to develop forecasts of EDAM schedules that EDAM participants could take into account in their gas purchase decisions, but it is uncertain whether the CAISO will be able to develop such reliable D+2 forecasts.

In this section, we first describe the challenges faced in forecasting D+2 resource schedules in the Western markets (Section 4.1). We follow with a conclusion that a lack of reliable forecasts of such schedules should be factored into rules impacting gas purchases and gas-fired generation offer prices, and operating practices (Section 4.2).

4.1 Forecasting Challenges

Below, we discuss several challenges that need to be reckoned with, including the accuracy of D+2 forecasts for subregions of the West, the effect of varying gas prices, and the desirability of evaluations of predictive accuracy prior to go-live.

[32] The CAISO recognized this in stating "(s)takeholders reiterate that advisory information is only useful if they have confidence in using the information as a fuel procurement target" (CAISO, Final Proposal, op. cit., Section 3.4, p. 25).

4.1.1 The Difficulty of Forecasting D+2 Schedules for the Entire Market. There are several types of difficulties involved in developing accurate D+2 market forecasts. The first difficulty, which we discuss in this subsection, is that even on days with relatively stable day-to-day gas prices, there could be so much error in the D+2 load forecast and intermittent output forecast, that the D+2 forecast is too inaccurate to provide useful information for gas purchases by EDAM market participants.[33]

Based on the data provided by the CAISO in the various GRM proposals and presentations it is not clear that the CAISO is likely to be able to develop sufficiently accurate D+2 schedule forecasts to guide gas purchasing in the timely market.

The D+2 forecasts provided by the CAISO will only be advisory, they will not be financially binding. Hence they cannot be helpful to EDAM market participants unless they are accurate.

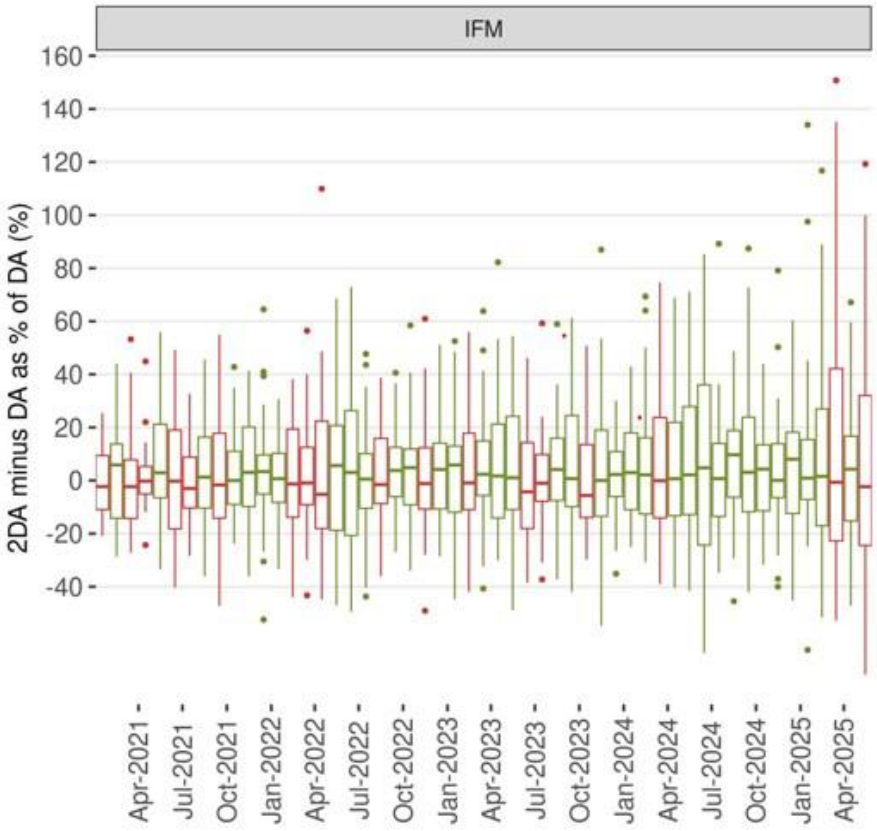
The CAISO has reported data on an historical average monthly D+2 forecast and average monthly day-ahead market schedule for the CAISO balancing area. Unfortunately, accuracy of a monthly average is completely irrelevant.[34] The CAISO D+2 forecast needs to be accurate on each day, not on average over the month if it is to be relied upon for scheduling gas in the morning gas cycle by EDAM participants. EDAM participants have to buy gas for their gas-fired generation day by day. If they buy high cost gas in excess of the gas needed to cover their EDAM schedules on many days, they will incur extra costs that will have to be borne by their rate payers or shareholders.

The historical analysis reported by the CAISO for the CAISO balancing area suggests that there is considerable error in the D+2 forecast on a day-by-day basis.[35] The daily data reported by the CAISO appear to show large differences between the D+2 forecast and day-ahead market schedules on many days, as the below chart from that analysis shows.

[33] Significant forecast errors could also arise as a result of unexpected major transmission and generation outages.

[34] For example, a forecast that is 50% too high on half the days and 50% too low on the other half of days will have an accurate monthly average, but will result in day-to-day procurement being substantially off in all of the days of the month.

[35] Source: Sylvie Spewak, CAISO, "Gas resource management straw proposal," August 12, 2025, Slide 41.



Distribution of D+2 Schedule Forecast Errors
(source: Sylvie Spewak, CAISO, "Gas resource management straw proposal," Aug. 12, 2025, Slide 41).

Moreover, it is not just under-forecasts that are a concern. The magnitude of over-forecasts whose costs would be borne by the EDAM participant buying gas for its generation if the EDAM participant relied on the D+2 forecast in determining how much gas to buy in the timely market would also be a concern for EDAM participants making use of a CAISO forecast.

4.1.2 The Difficulty of Forecast Performance for Submarkets. Ultimately, it will be the accuracy of CAISO D+2 forecasts at the balancing area level that will determine whether EDAM participants make use of the D+2 forecasts in formulating their morning gas market purchases.

In the DFP, the CAISO stated:

> "A historic analysis has limited inferential value. This analysis only looks at the CAISO BAA but CAISO expects trends may differ from BA to BA due to differences in market participation, like bidding behavior. This analysis considers the D+2 and DAM as they are run today but planned and proposed changes will impact outcomes. The CAISO is introducing imbalance reserves with EDAM go-live which should impact the magnitude of differences between D+2 and RUC. The CAISO 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."[36]

We agree with this statement that an historical analysis showing that the CAISO has been able to develop accurate D+2 forecasts for the CAISO balancing area would have limited value in verifying that the CAISO will be able to do this for individual EDAM balancing areas or market participants. However, if the CAISO has yet to be able to develop accurate D+2 forecasts at the level of the CAISO balancing area, we should not assume that it is going to be able to develop such estimates for EDAM market participants in the near term, absent actual empirical evidence that this will be the case.

When the CAISO is able to analyze EDAM data in some manner, it should analyze the accuracy of the D+2 forecast at the balancing area and market participant level, both on days in which gas prices are stable and separately analyze accuracy on days on which balancing areas and individual gas-fired generators are scheduled to support EDAM exports. It will be important to assess if the D+2 forecast can predict gas needs for export schedules, not just gas purchases to meet balancing area load.

4.1.3 The Difficulty of Predictive Accuracy When Gas Prices are Changing. There is a third difficulty the CAISO faces when attempting to improve the accuracy of D+2 forecasts. This concerns whether the CAISO can develop accurate D+2 forecasts on days with significant changes in gas market prices between D+2 and the day-ahead market. This appears to us to be even more challenging than developing accurate forecasts on days with stable gas prices. It is not clear to us how the CAISO will be able to develop accurate D+2 forecasts on these types of days. None of the ideas in the CAISO DFP appears to us to likely be successful in meeting this need. Large ranges of uncertainty are inevitable when forecasting a very volatile variable.

If EDAM participants knew that the D+2 forecast would not be accurate on days with high gas price variability but would be accurate on days with low gas price variability the D+2 forecast would still be valuable, but only on some days. EDAM market participants would know when their own gas supply situation was changing and would hopefully have a sense when it gas changing for EDAM participants with different gas supply options. If EDAM participants are unable to manage their exposure to EDAM export schedules and high levels of gas purchases in the afternoon market with their offer prices, they will likely manage these risks by using the EDAM export constraint. This would reduce risks but would reduce EDAM benefits as well, potentially on days when the benefits for other balancing areas could potentially be large.

In order to develop accurate D+2 forecasts on days with material day-to-day changes in gas prices, the CAISO needs to be able to base the D+2 run on gas prices/offer prices that will reflect day-ahead market conditions. But these conditions are unlikely to be known as of D+2. The CAISO proposes:

> "To better align D+2 inputs with the next day's day-ahead market (D+1), the CAISO proposes using D+1 bids if they've been submitted in time to run the D+2. As a default

[36] CAISO, Gas Resource Management, Final Proposal, op. cit., p. 34.

> the CAISO 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 CAISO day-ahead market operator will retain the ability to utilize a different bid set should they determine it likely to provide more accurate results."[37]

It is not clear that this process will enable the D+2 run to provide even roughly accurate forecasts of day-ahead market schedules when gas prices are changing between D+2 and day-ahead. When gas prices are changing, the D+2 offer prices will not reflect day-ahead market conditions. Moreover, the CAISO noted in the straw proposal that the D+2 day could be a weekend, while the day-ahead market could be a weekday, or vice versa, with different levels of gas demand and prices. The CAISO has noted that it currently addresses weekday/weekend issues by using the offer prices from a week before, which aligns day type, but these gas prices are a week out of line with current market conditions.[38] The CAISO suggests that EDAM participants submit their forecasts of D+1 gas costs and offer prices in time for the D+2 market run, but there is no apparent basis for assuming that EDAM market participants will be able to forecast gas prices a day in the future when gas market conditions and prices are changing from day-to-day. There is not a simple solution to these challenges and we do not have any suggestions that would resolve these challenges. Our point is that we anticipate that it will be very difficult for the CAISO to develop accurate D+2 schedule forecasts on these types of days

There is a further problem with the accuracy of the D+2 forecast in that the CAISO does not propose to run a market power mitigation pass for the D+2 run.[39] We understand the reasons for this choice, but the implication is that even if EDAM participants could accurately forecast day-ahead gas prices as of the D+2 market run, for the purpose of their commitment cost offers they would need to forecast the default energy bid the CAISO will apply in scheduling their gas-fired generation in EDAM. If an EDAM market participant submits accurate estimates of their expected day-ahead market gas costs for the D+2 market run, but CAISO default energy bids are lower than the EDAM market participant offer prices, the EDAM participant might not receive an export schedule in the D+2 market run but its gas-fired generation might be scheduled to operate to support exports based on its default energy bid or capped commitment cost offer in the day-ahead market.[40]

The expected situation at EDAM go-live is that early EDAM participants will not have access to data showing that the D+2 forecast is reliable enough that they could use it for making gas purchase decisions in the timely gas market, even on days on which there is little day-to-day variation in gas prices

[37] CAISO, Gas Resource Management, Final Proposal, op. cit..

[38] CAISO, Gas Resource Management, Straw Proposal, July 25, 2025, p. 17.

[39] Ibid., p. 18.

[40] We discuss the complications associated with the market power mitigation pass further with respect to CAISO proposals for offer price flexibility in Section IVIII.

4.2 D+2 Forecast Summary

If the historical data showed that the CAISO has been able to develop reasonable accurate D+2 forecasts on a daily basis at the LAP level, or that it could with proposed improvements, that would be encouraging information for EDAM participants. If that were the case, EDAM participants would be able to make some use of the CAISO D+2 forecasts, at least on days when they expected the gas price to be relatively stable.

However, if the CAISO is not able to develop accurate D+2 schedules forecasts on a daily basis for the CAISO LAPs even on days with stable gas prices, then we should not expect that EDAM participants will be able to place much reliance on the EDAM D+2 forecasts in purchasing gas in the timely gas market. If that is the case, we need to recognize that reality and factor it into rules impacting gas purchases and gas-fired generation offer prices, and operating practices.

CAISO needs to focus on getting the D+2 run accurate on a daily basis, not on average over month, and getting right first at the BAA level and then at the scheduling coordinator level, for it to help market participants with gas purchases in the morning gas market.

It is not clear how the CAISO can hope to generate quality D+2 forecasts on days with gas pipeline constraints and highly variable gas prices. The CAISO needs to be realistic about this and understand that EDAM market participants will not be able to rely on D+2 forecasts to guide the level of their morning gas market purchases at EDAM go-live.