



California ISO

Gas Resource Management Working Group
Discussion Paper
August 9, 2023

California Independent System Operator

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Executive Summary

This paper provides stakeholders with an overview of the upcoming ISO-hosted and stakeholder-driven Gas Resource Management (GRM) Working Group meetings. Specifically, the paper discusses the background on the working group effort, and as the working group process proceeds will offer a strawman for the structure of the GRM Working Group, and a synthesis of the GRM stakeholder comments on the topics proposed the working group should consider. This paper is a tool to assist the GRM Working Group participants in organizing discussions and a means of accelerating collaboration between stakeholders.

The GRM Working Group series is a pre-initiative process intended to deliver on the commitment the ISO made to continue working collaboratively with stakeholders to explore some of the gas management challenges stakeholders are facing in their participation in the Western Energy Imbalance Market (WEIM) and potentially the extended day-ahead market (EDAM). A recommended output of this effort is a “GRM Action Plan”, containing recommendations to the ISO for a future GRM policy initiative to support GRM design(s) that are durable and meet the needs of stakeholders.

The ISO anticipates the GRM Working Group will give stakeholders a more active role in informing the policy vision and direction for gas resource management. The resultant work product will identify scope, prioritization, and ultimately develop a GRM Action Plan for a future policy initiative.

Lastly, this document outlines proposed topics for the working group based on comments through the stakeholder page to date, and the first working group meeting. The initial discussion coalesced around five problem statements: 1.) alignment of gas market timelines, 2.) existing cost recovery mechanisms, 3.) bidding flexibility, 4.) ensuring resource specific limitations are considered, and 5.) appropriate reflection of gas limitations within the market.

Introduction

Background

During the early stages of Western Energy Imbalance Market (WEIM) expansion, the California ISO and stakeholders explored market functionality to support gas resource management. The Commitment Cost Enhancement initiatives¹ intended to provide more flexibility for participants to represent gas costs, a more accurate representation of actual gas costs being utilized for the resource by the market, and adequate accounting for opportunity costs. In subsequent initiatives concluding in 2017 and 2020 respectively, the CAISO developed further enhancements to market participation mechanisms through the Bidding Rules Enhancements² and Commitment Costs and Default Energy Bid Enhancements³ initiatives. These efforts intended to enhance inputs to calculated cost parameters and provide an avenue for cost adjustments based on gas market volatility.

The growth of the WEIM and the efforts of the Extended Day Ahead Market (EDAM) initiative have highlighted a need to revisit resource modeling in both the day-ahead and real-time market horizons from a more diverse regional perspective. Specifically, the supply commitment and resource sufficiency evaluation working group of the EDAM highlighted the need to continue to consider gas management challenges⁴. The GRM working group effort is intended to extend a forum for stakeholders to assess existing market functionality and bring forth new and persistent challenges for community consideration.

Gas Resource Management Working Group Process

The working group process reflects general stakeholder feedback and incorporates this input before the initiative process, which can lead to more alignment on the scope of an initiative and proposed design.

Stakeholders have the opportunity to provide input on key components leading up to proposal development;

1. Define and illustrate principles for market design and gas resource management.

¹ CCE1: <http://www.caiso.com/Pages/documentsbygroup.aspx?GroupID=d64f16be-45f4-4c71-a44a-4f2d958fd047>; CCE2: <http://www.caiso.com/Pages/documentsbygroup.aspx?GroupID=61e75ea2-85ea-4a2a-a0ac-de3b24eb57eb>; CCE3:

<http://www.caiso.com/Pages/documentsbygroup.aspx?GroupID=a2844d76-b015-4094-aa74-caba0e46fea4>

² <http://www.caiso.com/Pages/documentsbygroup.aspx?GroupID=511740b8-6a9a-4d1c-b4c4-65af45799d4b>

³ <https://stakeholdercenter.caiso.com/StakeholderInitiatives/Commitment-costs-and-default-energy-bid-enhancements>

⁴ Gas Resource Management was also discussed during the WEIM Regional Issues Forum in June 2023.

2. Form problem statements reflecting stakeholder concerns
3. Align on priorities and establish cadence to balance staff and stakeholder bandwidth
4. Illustrate problem statements by exploring current ISO market operations, functionality, and processes, and developing a methodology for assessment.
5. Determine action items for each problem statement to provide a bridge between working groups and proposal development.

Should subject matter be identified as technically complex and require further discussion, the ISO is open to hosting additional stakeholder workshops or providing additional background and education on key elements of the proposal.

Gas Resource Management Working Group Deliverables

Evolving This Discussion Paper

The GRM Discussion Paper will serve as a resource for stakeholders by reflecting the discussion and decisions that occur during the working group process. After each working group meeting, ISO facilitators and scribes will provide notes, key decisions, and action items identified by stakeholders. The ISO will post these notes for review between working group meetings.

Gas Resource Management Working Group Action Plan

The final discussion paper is intended to serve as a “GRM Action Plan” that reflects the outcome of stakeholder discussions during the working group process. The recommendations in the GRM Action Plan will ensure that ISO initiative process reflects the stakeholder determined vision and roadmap.

Discussion Paper Summary

Gas Resource Management Working Group Topics

The topics proposed in this first iteration of the Discussion Paper are designed to synthesize stakeholder feedback from the July 27th GRM Meeting and submitted comments prior to the call.

1. Alignment of Electric and Gas Market Timelines
2. Existing Cost Recovery Mechanisms
3. Bidding Flexibility
4. Resource Specific Limitations
5. Gas System Limitations

Gas Resource Management Working Group Principles

Throughout the working group process, stakeholders will consider how problem statements relate to market design principles to facilitate assessment of prioritization and potential trade-offs between approaches. The ISO encourages feedback on these principles:

1. Efficiency
 - Basic market design principles: Incentive compatibility, dispatch on offered prices will minimize actual system production costs, assets want to produce awarded amount
 - GRM principle: Incentives to reflect verifiable cost expectations
2. Simplicity
 - Basic market design principles: simple logic that applies broadly like uniform pricing
 - GRM principles: Reasonable accommodation for cost adjustments that apply broadly, minimize accommodations for edge case scenarios
3. Transparency
 - Basic market design principle: Market prices are transparent and known to participants
 - GRM principles: Sufficient information is available when making bidding and procurement decisions
4. Feasibility
 - Basic market design principle: prescribed process is operationally feasible, the market can resolve with prescribed timelines

- GRM principle: Participant data confidentiality is respected

Gas Resource Management Working Group Problem Statements

Identified problem statements should offer a clear path toward analysis and proposal development that honor and consider the principles. These were discussed during the July 27th call and will be further developed in the working group meetings as the process progresses.

Proposed Problem Statements and Discussion Topics

As part of ISO's role facilitating these discussions, the ISO gathered proposed problem statements that will be utilized as discussion topics to further understand and ask the group "what is the problem statement with this issue?" to help inform direction of policy. This section synthesizes those points below.

1. Alignment of Electric and Gas Market Timelines

This topic reflects stakeholders' interest in exploring the trade-offs associated with aligning the day-ahead electricity market with the existing gas market timelines.

The ISO has actively engaged in discussions surrounding the alignment of the day-ahead electric market with existing gas markets. The ISO has participated in ISO-run stakeholder processes and contributed to FERC and NAESB proceedings. For more background on the proceedings and the specific concerns identified, can be found in Appendix A.

This working group topic offers stakeholders an opportunity to review past proceedings to support their own assessment of previously identified trade-offs. This topic offers a venue to explore the challenges stakeholders have identified in association with the difference in timelines, and will facilitate the identification or development of market mechanisms or tools to mitigate these issues.

During Working Group 1, stakeholders identified the following issues associated with the gas and electricity market timelines:

1. Market participants do not have sufficient information to make gas procurement decisions
2. Recent increases in variable energy resource capacity has increased forecast uncertainty in determining gas procurement

2. Cost Recovery Mechanisms

Stakeholders highlighted the existing process for cost recovery may be overly burdensome.

Stakeholders suggested the following scope items be part of discussion for problem statement formation:

1. More timely and straight forward cost recovery process
2. Penalties and risk-associated costs are difficult to reflect in bids

Stakeholder Problem Statements:

1. Current after-market cost recovery process requires FERC filing which can be burdensome.

3. Bidding Flexibility

Stakeholders expressed the need for more bidding flexibility to accurately reflect their verifiable cost expectations in the market. Participants expressed that the current Default Commitment Cost caps of 125% and the current Variable Cost Default Energy Bid caps of 110% do not always cover their costs or exposure and are seen as overly restrictive.

Stakeholders suggested the following scope items be part of discussion for problem statement formation:

1. Default Commitment Cost cap percentages are too restrictive
2. Differences in heat rates and ability to account for accordingly
3. Generator reference prices (i.e. default energy bids and commitment costs) are based on electric day, not gas day (market timeline differences)
4. Bid mitigation during periods of gas price volatility

Stakeholder problem statements:

1. Current framework for bid caps may limit generators from reflecting their incurred gas costs into the market.
2. The automated reference level process must be implemented by unit and configuration for all applicable hours, which is labor-intensive for Scheduling Coordinators with a large gas fleet.
3. The manual reference level process requires submission of a CIDI case by 8:00AM Pacific Time that is subsequently reviewed by the CAISO. By

the time the costs are approved and updated, several hours have passed in the current gas day.

4. Resource Specific Limitations

Stakeholders expressed interest in considering how market processes can accommodate resource specific limitations, and associated costs.

Stakeholders suggested the following scope items be part of discussion for problem statement formation:

1. Use limitations appropriately accounted for
2. Potential heat rate variations
3. Ability to map multiple gas zones to a specific resource

5. Gas System Limitations

Stakeholder expressed a desire for an increased ability to account for the various gas system limitations that are not fully accounted for in today's design.

The following scope items be part of discussion for problem statement formation:

1. Accounting for differences in gas systems and storage capabilities
2. Gas Burn limitations taken into account
3. Operational flow orders, minimum burn orders to support gas system maintenance
4. Potential loss of firm transportation
5. Liquidity of the different gas markets

Action Items identified for group

The below items were identified as follow-up items from the previous working group session;

1. Stakeholders to review history of the exploration of aligning Gas and Electric Market timelines (*see Appendix for link*)
2. ISO subject matter experts to briefly cover current mechanisms in place today when the group walks through each problem statement
3. Stakeholders to identify analysis needed to illustrate or justify identified problem statements

Appendix

1. Gas and Electric Market Alignment

The existing timing of the day-ahead electric market is intentionally run between the timely and evening nomination cycles, allowing market participants to optimize their gas procurement between the two cycles with knowledge of fixed prices during the timely cycles and fixed quantity during the evening cycle.

Through both CAISO-run stakeholder process as well as CAISO participation in FERC and NAESB proceedings, the CAISO has considered aligning the day-ahead electric market to the timely gas nomination cycle. During these endeavors, the CAISO identified a number of potential issues that lead it to determining aligning the market timelines was not in the best interest of CAISO market participations.

Complications relating to market efficiency due to unknown gas prices, changes to business process, and increased forecast inaccuracy due to earlier timelines were identified as just reasons to not move the day-ahead market clearing timelines⁵.

The CAISO is planning to work with its internal Scheduling Coordinators to revisit if present market conditions erase these concerns, but ask that stakeholders consider the following in their own assessment.

⁵ [CAISO Bidding Rules Enhancements - FERC Order 809](#)