Gas Resource Management
Working Group 4

October 12, 2023

New pre-registration process to join meetings

- Pre-registration is required for all future stakeholder meetings in order to receive a link to join the meeting.
  - The link to pre-register is available in the meeting notice and on the ISO calendar.
- A recent update to WebEx disabled the ability to view the list of meeting attendees.
- The new pre-registration process will allow us to provide the list of meeting attendees to stakeholders during the call.

Housekeeping reminders

- This call is being recorded for informational and convenience purposes only. Any related transcriptions should not be reprinted without ISO's permission.
- If you need technical assistance during the meeting, please send a chat to the event producer.

Instructions for raising your hand to ask a question

- If you are connected to audio through your computer or used the “call me” option, select the raise hand icon  located on the bottom of your screen.
- **Note**: #2 only works if you dialed into the meeting.
  - Please remember to state your name and affiliation before making your comment.

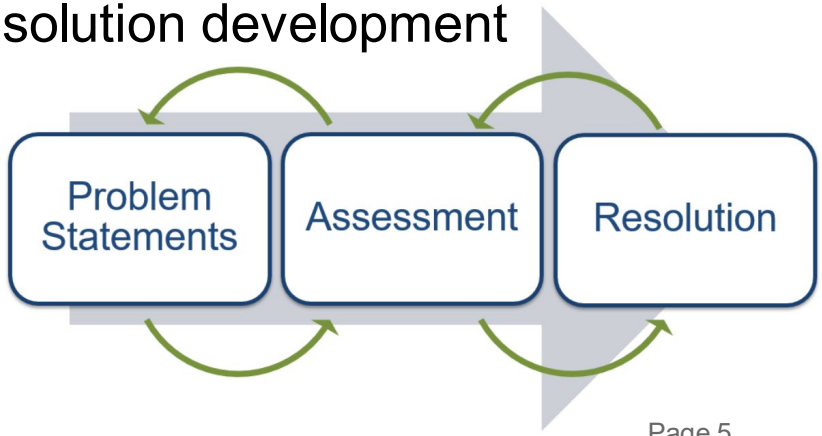
- You may also send your question via chat to either Isabella Nicosia or to all panelists.

Working Group Progress to date

- Problem statements **[Done!]**
  - Discussion Paper describes the challenges and issues faced by gas resources
  - Problem Statements translate issues into actionable items

- Assessment **[In progress]**
  - Validate problem statements as represented
  - Identify ways to measure the issues or asses the impact of potential solutions
  - Align on priorities and prepare for solution development

- Resolving the issues **[In progress]**
  - Identify existing opportunities
  - Develop solutions



Next steps for the ISO in support of assessment

The ISO plans to take the following steps to assist the group with prioritization:

- Categorize impacts in terms of policy, technology, and legal
  - Provide an initial assessment of hurdles or low-hanging fruit
- Provide context from previous initiatives or FERC decisions
- Recommend existing opportunities for problem resolution
- Fulfill or provide feedback on stakeholder data requests

<u>Logistics</u>

- Information will be published as it's available
- Public comments and midpoint surveys will offer rolling opportunities for feedback

Next Steps

October 12 - Working Group

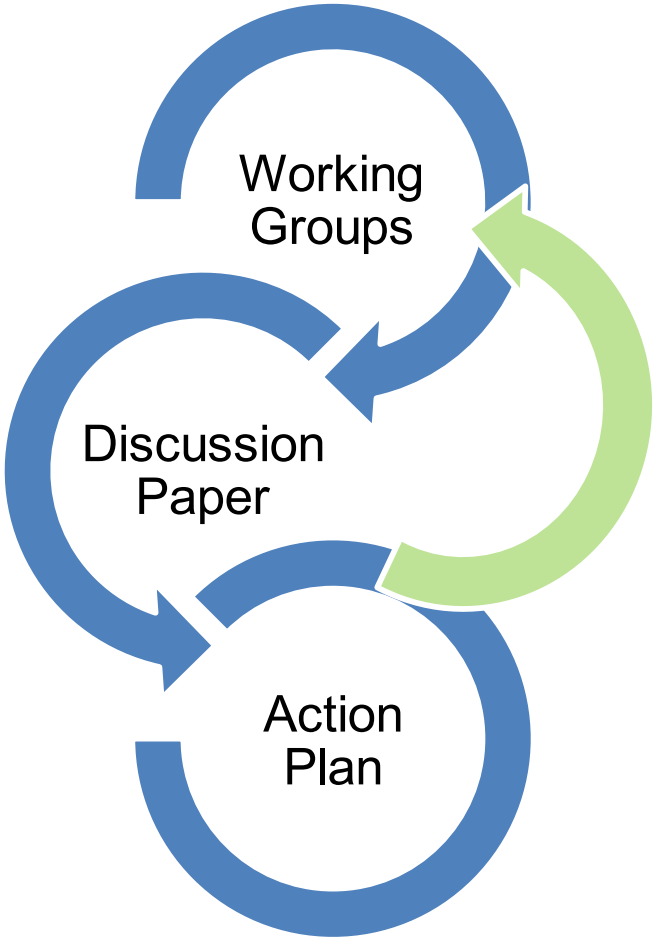
- Identify action times for each problem statement
- Post-meeting survey will inform prioritization and timing of next steps

November - Action Plan

- Updates based on data, policy action items

TBD – Survey and Meeting

- Discuss data/analysis results
- Evaluate possible solutions for prioritized problems



What we heard from stakeholder comments

General feedback:

- More clarity needed for the manual and automated reference level change request process (timing, data requirements, when to utilize, threshold)
- More advisory schedules to help inform gas procurement
- Gas system limitations and utilization of constraints within the market

Items to consider and understand when discussing solutions:

- Enhancements to market optimization vs. feasibility given market publication deadlines
- More data available vs. accuracy of that data (based on inputs)
- Improvement of procedures and processes vs. time and effort required to improve

Confirming Issues & Supporting Data Needs

- Identify details or clarifications to improve the problem/issue captured
- Any information/data needed to help further define the problem?
- Any questions for the ISO SMEs pertaining to background or context to further educate the community on the issue?
- Identify measurable outcomes/impacts/analysis
- Provide clarity on existing functionality and illustrate where it comes up short

Challenges expressed to date

1. (Alignment of markets) Participants do not have enough certainty in the accuracy of the 2 DA advisory schedules and forecasts to confidently utilize this information as a procurement target for gas in the more liquid Timely nomination cycle.

   – Data needs
     - Inputs to the D+2 run and associated timing of those inputs
     - Load and VER forecasts accuracy vs. (DAM inputs of RT actuals?)

Potential Solution: Create a 4am advisory run using the same inputs as the market run.

Provide a fuel burn advisory in mmbtu / mwh?

Challenges expressed to date cont…

2. (Alignment of markets) Due to the Electric DA results not being published until after the during Gas Day 1, participants do not have sufficient information about their own dispatch schedules to make confident and risk-informed gas procurement decisions (7am DA) to support market schedules.

- Existing process
  - D+2 advisory run

Potential Solution: Create a 4am advisory run using the same inputs as the market run. Provide a fuel burn advisory in mmbtu / mwh?

Challenges expressed to date cont…

3. (Cost recovery) The reference level change request processes are overly burdensome because the automated process can only be submitted for one resource at a time. The 8am deadline to submit a manual reference change request conflicts with other external trading activities. These restrictions limit their intended usefulness for cost recovery.

- Existing process
  - Manual reference level change requests are submitted via CIDI by 8am
  - Automated change requests are due by applicable deadline for DA and RT markets

- Context
  - Actual gas costs are not known yet to even make a valid request
  - 8am deadline was established in CCDEBE due to market processes and allowing participants enough time to resubmit bids
  - Submitting per resource using the automated process takes too long

Potential Solution: Extend current manual reference change request deadline (past 8am).
Allow multiple resources to be represented on a single request.

Challenges expressed to date cont…

4. (Cost recovery) The reasonableness thresholds used to assess automated reference level change requests are too low given the increasing volatility in today's gas market.

- Existing process
  - Automated reference level change request. A reasonableness threshold (10 or 25%) is a CAISO-calculated reference level value that accounts for a margin or fuel or fuel equivalent cost volatility, and used to screen automated reference level change requests. Suppliers are expected to submit bids based on cost expectations using contemporaneous information available to the supplier such as gas price quotes. If the adjustment request falls below the reasonableness threshold, the change is accepted automatically.

Potential Solution: Modify reasonableness threshold percentage to more accurately capture expected costs associated with gas price volatility

Challenges expressed to date cont…

5. (Bidding flexibility) During episodes of natural gas system constraints and volatility, especially when participants are issued OFOs, generators encounter difficulties in representing their costs within the Energy market because bid caps are too restrictive and there may be a higher likelihood of being mitigated down.

- Existing process
  - Allow participants to bid up to 125% and/or 110% of calculated costs
- Data Needs
  - How often are the commitment cost caps being utilized in tight gas system conditions
  - Correlation between gas volatility and bid mitigation

Potential Solution: Increase caps to more accurately capture expected costs associated with gas price volatility

Challenges expressed to date cont…

6. (Bidding flexibility) Heat rates used for commitment cost calculations do not account for changes in heat rate variation from larger temperature ranges in the diverse western climates.

- Existing process
  - Heat rates can be updated via Master File with a 10 business day ahead request
- Context
  - The 125% adder and ability to update heat rates monthly/seasonally should allow enough flexibility to capture appropriate costs
- Qs from the ISO: Is this still an issue?

Challenges expressed to date cont…

7. (Bidding flexibility) Energy markets do not reflect the appropriate gas day's cost that are used in the commitment cost and default energy bid formulation for HE1 through HE7 despite the fact that this cost information is available.

- Existing process
  - Utilizing up to 125% of cap and the automated reference level change request process can help with any misalignment of costs
- Context
  - Current commitment cost calculations are designed to align with the electric market day and not the gas market day, and are static values per day and market (i.e. they do not vary hourly)

Potential Solution: Utilize the appropriate GPI cost value for HE1-7 accordingly.

Challenges expressed to date cont…

8. (Resource limitations) When switching fuel supply source(s), generators are unable to reflect accurate costs in the market timely

- Existing process
  - Pre-established fuel regions can be updated via a Master file request (10 business days)

- Data requests
  - How many of these units exist within ones BAA
  - Drivers behind switching fuel supply / type

Potential Solution: Provide ability for resources to reflect appropriate costs of their fuel source in a timely manner.

Challenges expressed to date cont…

9. (Resource limitations) Use-limited registration criteria does not explicitly recognize unique reliability-based limitations of gas resources in a balancing area and as a result, renders resources ineligible for the opportunity cost calculation.

- Context
  - Current rules have explicit categories of acceptable limitation criteria to establish use-limited status. During discussion, a stakeholder suggested that the limitation criteria should explicitly consider a reliability based limitation for when a gas resource provides ancillary services in their balancing area

Potential Solution: Allow for BAA's to account for other types of use limitations in the opportunity cost calculation.

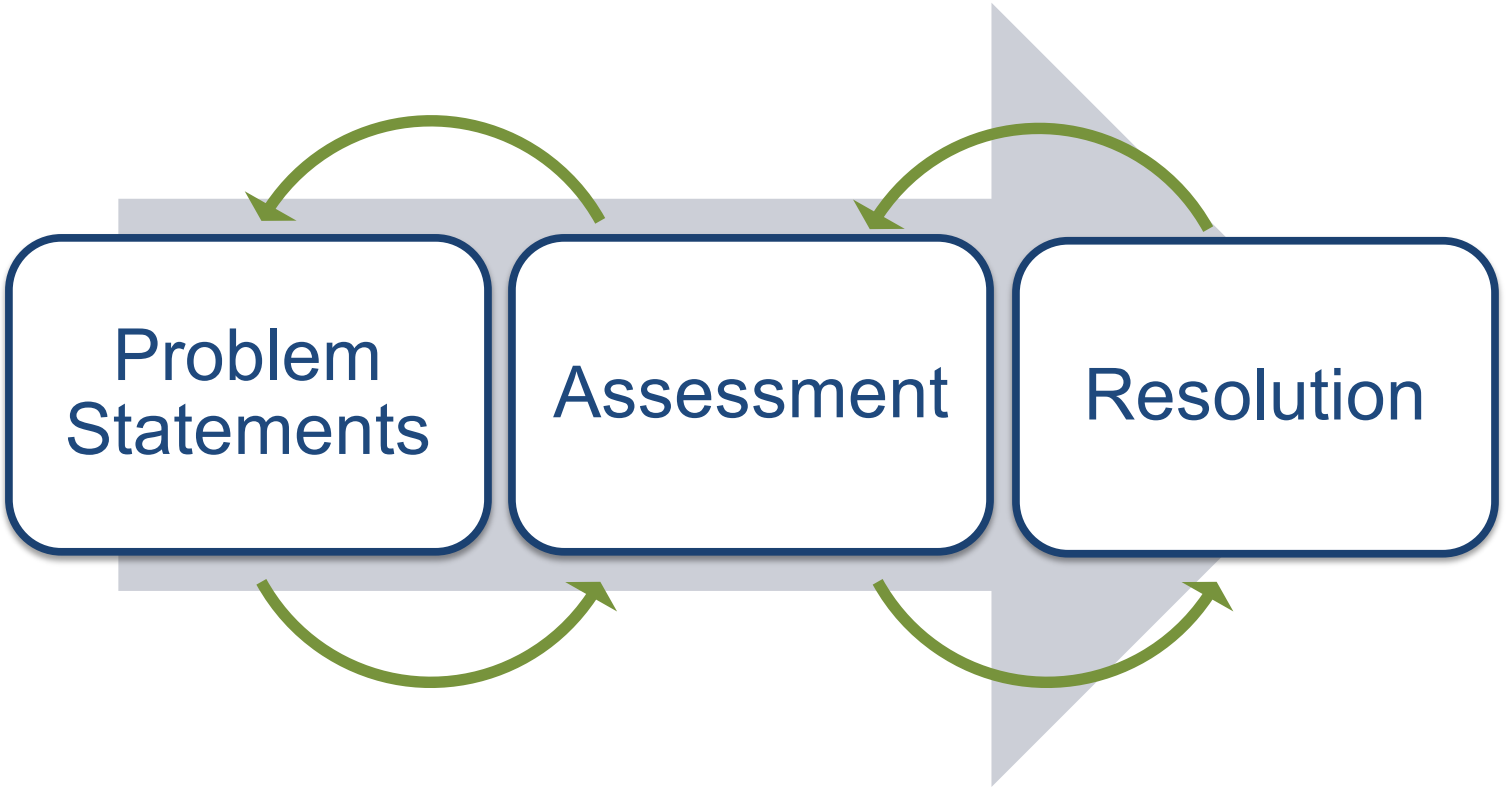
Challenges expressed to date cont…

10. (Gas system limitations) Gas burn limitations issued by gas companies are not reflected in the market for WEIM balancing areas, which may lead to inaccurate or infeasible unit commitment or dispatch instructions

- Context
  - By reflecting a fuel burn limitation in the market, it would ensure feasible awards, hence increasing reliability of both the gas and energy systems, and relieve entities of financial exposure
  - How is this managed today?

Potential Solution: Utilize the gas company burn limitations in market optimization

In case you missed it…



Working Group Materials

- All materials related to the Gas Resource Management working group are available on the ISO website at https://stakeholdercenter.caiso.com/StakeholderInitiatives/Gas-resource-management-working-group