# Gas Resource Management
## Working Group 6

December 7th, 2023

# 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.

# Agenda

**Focus**: resource-specific cost adjustments; PS 6, 7, 9, 10

- Automated Reference Level Adjustments
- Manual Reference Level Adjustments
- Multiple Fuel Zones
- Different Types of Fuel

1. Review problem statements and related discussion to date
2. Review and discuss existing tools intended to facilitate resource-specific cost adjustments
3. Identify opportunities for potential enhancements
4. Discussion scenarios
5. Next steps

# PS6: Automated Reference Level Adjustments

PS6: The automated reference level change request process can only can be submitted for one resource at a time.

- Existing process
  - The automated request process can be submitted any time prior to the close of the applicable market
  - Suppliers are expected to submit automated requests based on verifiable cost expectations
  - If the requested adjustment request falls below the reasonableness threshold, the change is accepted automatically.
  - Reasonableness threshold acts as a cap on submitted costs to protect against market power or gaming.

Potential Solution: Allow for multi-resource submission at fuel zone level.

# Reference Level Change Requests

- CAISO calculates “reference levels” (DEBs, Default SUC and Default MLC) using gas prices and resource parameters
- SCs who expect to have fuel/fuel-equivalent costs greater than the costs used by CAISO to calculate reference levels may use the Reference Level Change Request (RLCR) process to update their reference levels
- Requests can either be manual or automated (two separate processes)

*See BPM for Market Instruments Attachment O for more details*

# Reference Level Change Request Overview

| | Automated | Manual |
|---|---|---|
| *Timeline* | Any time prior to close of the applicable market | By 8AM PST on the day the applicable market is executed |
| *How to submit* | Directly in SIBR | CIDI ticket |
| *How request is reviewed* | Automatically validated in SIBR against CAISO-calculated Reasonableness Threshold | Manually validated by CAISO team between 8-9AM PST |
| *Supporting documentation needed?* | Yes; retained by SC in the event of CAISO audit | Yes; submitted in CIDI ticket |

# Automated Reference Level Change Request Process

- SC submits adjustments to their DEB and commitment cost bid caps directly in SIBR prior to close of applicable market
  - 125% commitment cost/110% DEB multipliers cannot be included in submitted adjustment values
- If timely, SIBR compares request to a "reasonableness threshold"
  - If request ≤ threshold, request is accepted
  - If request > threshold, request is partially accepted (request capped *at* threshold value)
  - Accepted and partially-accepted values used in next market run

# Reasonableness Threshold Calculation

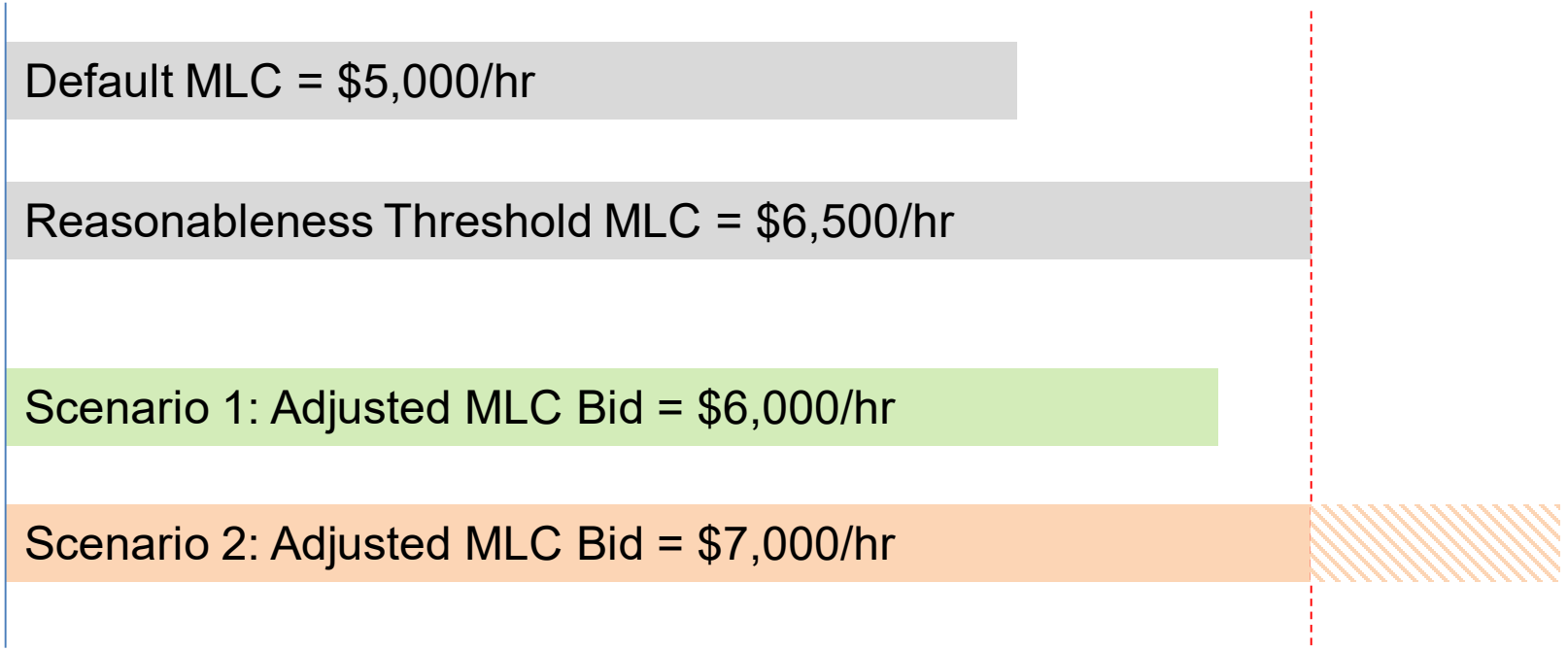
**Proxy Minimum Load Cost** = (Minimum Load Heat Rate x Pmin x Fuel Region Price) + VOM−EN + GMC + GHG + VOM−ML

**Default Minimum Load Cost** = [(Minimum Load Heat Rate x Pmin x Fuel Region Price) + VOM−EN + GMC + GHG + VOM−ML] * 1.25

**Reasonableness Threshold Minimum Load Cost** = [(Minimum Load Heat Rate x Pmin x {Fuel Region Price ∗ scalar}) + VOM−EN + GMC + GHG + VOM−ML] * 1.25

| | |
|---|---|
| 1.25 → | Commitment Cost Multiplier |
| Scalar → | Fuel price scalar<br>• 1.25 on days without published gas price index (e.g. weekends, holidays)<br>• 1.1 on days with published gas price index (e.g. weekdays) |

# Example: Reasonableness Threshold Calculation




- Scenario 1: Adjusted MLC Bid is below the reasonableness threshold; will be accepted and sent to market at $6,000/hr
- Scenario 2: Adjusted MLC Bid is above the reasonableness threshold; will be capped at $6,500/hr and sent to market

# Automated Reference Level Change Request Process

- Adjustments must be submitted per resource/configuration
  - SIBR API functionality can be leveraged to submit adjustments
- Unrecovered costs above the threshold may be eligible for cost-recovery after the fact
- SC must retain supporting documentation in case of audit by the CAISO
  - If audited, failure to properly justify adjustments may result in the resource's temporary ineligibility to submit future adjustments

# PS7: Manual Reference Level Adjustments

PS7: Stakeholders may not have the actual gas cost information necessary to submit a manual reference level change request by the 8am deadline.

- Existing process
  - Manual reference level change requests are submitted via CIDI by 8am
  - The 8am deadline is intended to provide enough time to review requests and update values in market systems before the market closes
  - Supporting documentation must justify an increase in *expected* fuel or fuel-equivalent costs

- Supporting data: ISO only received 1 manual reference level adjustment in 2023

Potential Solution: Extend current manual reference change request deadline (past 8am).

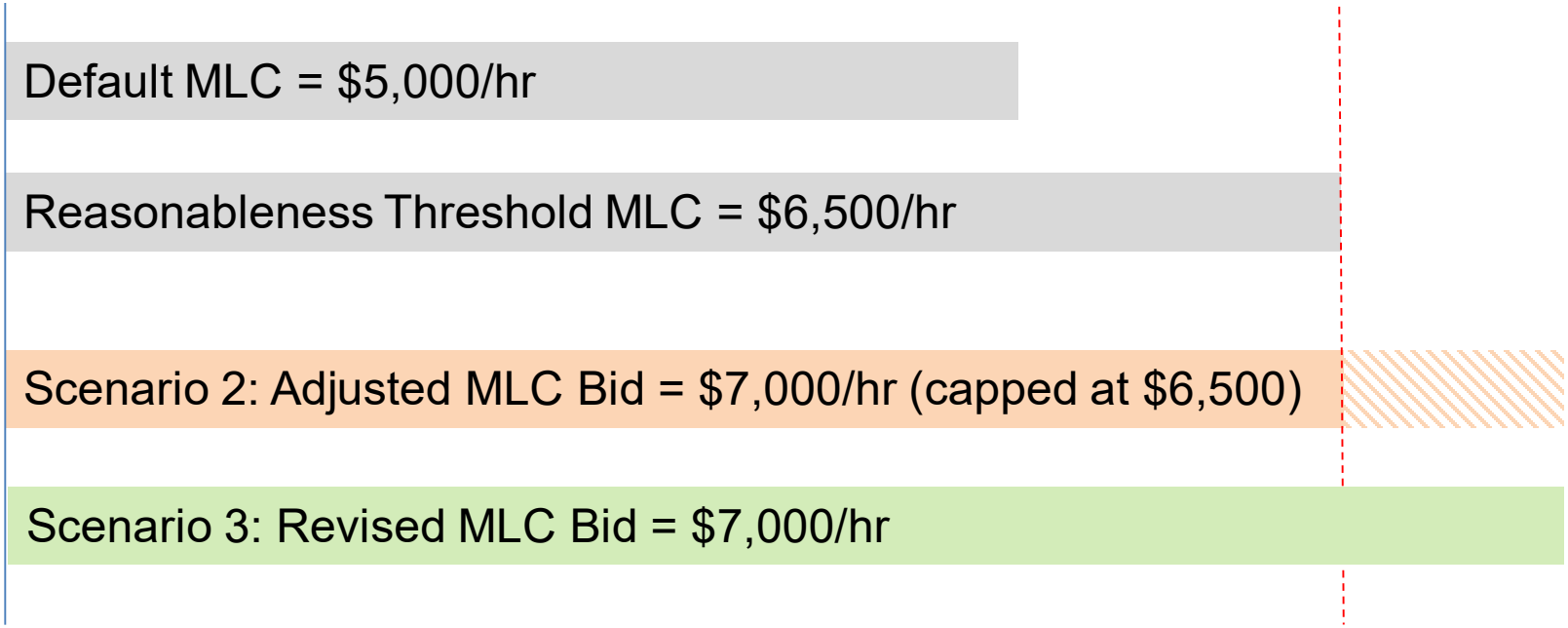
# Manual Reference Level Change Request Process

- Ideally, manual process will be leveraged if a resource's revised reference levels would not fully accepted by the automated process (i.e. capped at the threshold)
- SC submits CIDI ticket by 8AM PST on the day the applicable market is executed (DAM and RTM)
  - 8AM cutoff necessary to enable adequate time for manual review of ticket *and* for systems to recalculate values with enough time before market closes
- Price must be at least 10% and $0.50 greater than the gas price CAISO is using in its calculations
- If approved, CAISO will recalculate DEBs and commitment costs with the requested fuel price

# Manual Request – CIDI ticket

- Submit Inquiry Ticket in CIDI with “Manual Reference Level Change Request” box checked
- The following information must be included in the ticket in order to be processed:
  - Trade date, market
  - Resource ID(s)
  - Requested fuel or fuel-equivalent cost
  - Volume (MMBtu)
  - Natural gas pricing location to which resource is assigned in Masterfile, if applicable
  - Supporting documentation (e.g. invoices, gas quotes, screenshot of trading activity)

# Example: Manual Request




- Scenario 2: If automated tool were to be used, MLC adjustment would be capped at reasonableness threshold
- Scenario 3: SC chooses to submit a manual request and is approved; CAISO recalculates MLC, SC can now submit MLC bid up to $7,000/hr

# After-Market Cost Recovery

- Resources who have submitted a RLCR may be eligible for after-market cost recovery if criteria in BPM are met:
  - Automated request was capped at reasonableness threshold
  - Manual request was not approved prior to close of market's bidding window (note that the manual request must meet previously-described criteria)
- SC submits CIDI ticket to CAISO with after-market recovery request and supporting documentation within 30 business days
- If approved, CAISO will modify reference levels using revised fuel cost in post-processing settlements system
- Not intended as a process to recover *any* costs that were not recovered in CAISO markets

# PS9: Multiple Fuel Hubs / Sources

PS9: When purchasing gas from a fuel hub that is different from their Masterfile-defined fuel hub, generators are unable to dynamically reflect accurate costs from the different fuel hub in the market.

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

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

# Fuel Region Composition

- The daily fuel region price is the sum of the following two components:
  1. Natural Gas Pricing Hub Index ($/MMBtu) – updated daily, per market
  2. Transportation Cost ($/MMBtu) – updated monthly
     - Marginal Transportation Rates
     - Fuel Reimbursement Rate adjustments to the base natural gas transportation rate
     - Miscellaneous costs including taxes
- Fuel region price used in the calculation of DEBs and Default commitment costs
- Currently, fuel regions can only utilize one gas pricing hub

# Fuel Region Mapping

- Each resource has a fuel region mapped to their resource ID in the Masterfile
  - –Fuel region changes will follow typical Masterfile update process
- SCs can opt to use established fuel regions within their BAA, or create their own (CIDI request to CAISO)
- SCs must actively elect a fuel region mapping for new resources, otherwise the default/generic region is assigned

List of Existing Fuel Regions:
http://www.caiso.com/Documents/FuelRegion_ElectricRegionDefinitions.xlsx

# Establishing a Custom Fuel Region

- Submit CIDI ticket to CAISO, include:
  - Natural gas pricing location
  - Any applicable transportation rates
  - Supporting documentation for requested natural gas pricing location and transportation rates
- CAISO team will work with SC to finalize fuel region/transportation cost setup

# Example: Custom Fuel Region

Scenario: SC wishes to establish a new custom fuel region for their resource that consumes gas from SoCal Citygate. There are two associated transportation rates that the SC must pay to move gas from pipeline → resource.

- Gas hub = SoCal Citygate
- Transport rate 1 = $0.15/MMBtu
- Transport rate 2 = $0.40/MMBtu

Fuel region price = SoCal Citygate price + transport cost
= $5/MMBtu + $(0.15 + 0.40)/MMBtu
= $5.55/MMBtu

# PS10: Multiple Fuel Types

8. When switching fuel types, i.e. using diesel instead of gas, generators are unable to dynamically reflect accurate costs from the different fuel source in the market

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

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

# DISCUSSION SCENARIOS

# Goal: Inform potential cost recovery enhancements

- Assuming these scenarios result in cost impacts, consider the tools intended to facilitate cost adjustments

- Based on experience or expectations:
  - What information is known, and when?
  - What choices are available to the generator?
  - How do underlying problems impact participants' reliance on cost adjustment options?

- What other permutations of these scenarios should we be aware of?

# Example Scenario 1

- Resource X is usually dispatched to some capacity less than its Pmax
- Resource X does not have access to gas storage

Resource X has firm contracts for 80% of gas supply needed to meet day ahead schedules but anticipates a lack of gas market liquidity going into real-time.

# Example Scenario 2

- Utility Y has three resources
- Utility Y usually procures gas for these resources from a gas hub, Hub L, which is registered in the Masterfile
- Utility Y's resources are connected to multiple gas systems and sometimes rely on Hub H

When switching to Hub H, Utility Y will incur higher than normal transportation and fuel costs, and is worried that MPM will lower bids uneconomically

# Example Scenario 3

- Utility Z has three resources for which it gets gas supply from Pipeline P
- Pipeline P does not have sufficient capacity to supply all units operating at Pmax during peak events

Utility Z procures an alternative fuel at a higher cost to cover the supply short fall and is worried that MPM will lower bids uneconomically

# Next Steps

| Date | Time | Topic/Focus |
|---|---|---|
| January 9, 2024 | 1 - 3 p.m. | • Analysis on gas price inputs used for market operations and cost adjustments<br>• Problem statements 1-4 |
| January 23, 2024 | 1 - 3 p.m. | Hold |
| February 21, 2024 | 9 a.m. - 12 p.m. | • Data available in 2 day ahead and day ahead markets<br>• analysis of gas market trends and market inputs<br>• Problem statements 1-2 |
| March 26, 2024 | 9 a.m. - 12 p.m. | • Updated discussion paper & issue paper |

# Next Steps

- Submit comments by end of day December 15, 2023 through the ISO's commenting tool, using the template available on the initiative webpage.

- 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