



California ISO

Price Formation Enhancements

Enhancing BAA-Level MPM: Exploring the Grouping Approach


Policy Development Working Group

November 6, 2024

Housekeeping reminders

- This call is being recorded for informational and convenience purposes only. Any related transcriptions should not be reprinted without ISO's permission.
- The meeting is structured to stimulate dialogue and engage different perspectives.
- Please keep comments professional and respectful.
- Please try and be brief and refrain from repeating what has already been said so that we can manage the time efficiently.

Instructions for raising your hand to ask a question

- Open the Participant and Chat panels from the bottom right.
- If you are connected to audio through your computer or used the “call me” option, select the raise hand icon  located at the bottom of the participant panel.
 - **-Note:** *3 only works if you dialed into the meeting.
- Please remember to state your name and affiliation before making your comment.
- If you need technical assistance during the meeting, please send a chat to the event producer.
- You may also send your question via chat to either Brenda Marquez or to all panelists.

CAISO Policy Initiative Stakeholder Process



We are here

Phase 2

- Nov 06, 2024* Working group, BAA level MPM
- Nov 14, 2024* Working group, Fast Start Pricing
- Nov 20, 2024* Working group, BAA level MPM
- Dec 11, 2024* Working group, BAA level MPM

Workshop Agenda

Topic	Presenter	Time
Welcome and Introductions	Brenda Corona	10 minutes
Recap of BAA-Level MPM Fundamentals Rationale for a Grouping Approach	James Friedrich	50 minutes
Grouping Approach: Initial Proposal Illustrative Examples and Walkthroughs	George Angelidis	1 hour
Q&A and Open Discussion	All	1 hour

Workshop Objectives

1

Understand why a grouping approach should be considered for BAA-level MPM.

2

Identify key challenges and potential benefits of implementing a grouping methodology.


3

Participate in a detailed discussion about the considerations for defining and sequencing BAA groups for MPM assessments.

4


Analyze illustrative examples and walkthroughs to give feedback on how the grouping approach works in practice.

Timeline of BAA-Level MPM Discussion Topics

November 6, 2024 


TODAY

Consider how to define the groups and sequence the assessments; walk-through detailed examples of how a grouping approach would work.

November 20, 2024 

Other BAA-Level Mitigation Modifications

Discuss modifications to the BAA-level mitigation approach, such as only mitigating pivotal suppliers rather than all suppliers and an "impact test" to only mitigate offers with LMP impacts above a defined threshold.

March 5, 2025 


CAISO BAA Structural Competitiveness Analysis

Present analysis on the structural competitiveness of the CAISO BAA. Discuss if the CAISO BAA should be included in the BAA-level market power tests and treated like any other BAA, rather than assuming it is always competitive.

March 19, 2025 

Mitigation Frequency Analysis

Present analysis on how new BAA-level MPM approaches affect the frequency of mitigation compared to the current method.

May 14, 2025 

Straw Proposal

Publish and present Straw Proposal for Scarcity Pricing/MPM

Enhancing BAA-Level MPM: Exploring the Grouping Approach

RECAP OF BAA-LEVEL MPM FUNDAMENTALS

Policy Objectives of BAA-Level MPM

Ensure Competitive Pricing

- Ensure competitive prices when BAAs become "price-separated" (import-constrained) from other areas by evaluating whether internal generation can meet demand competitively.

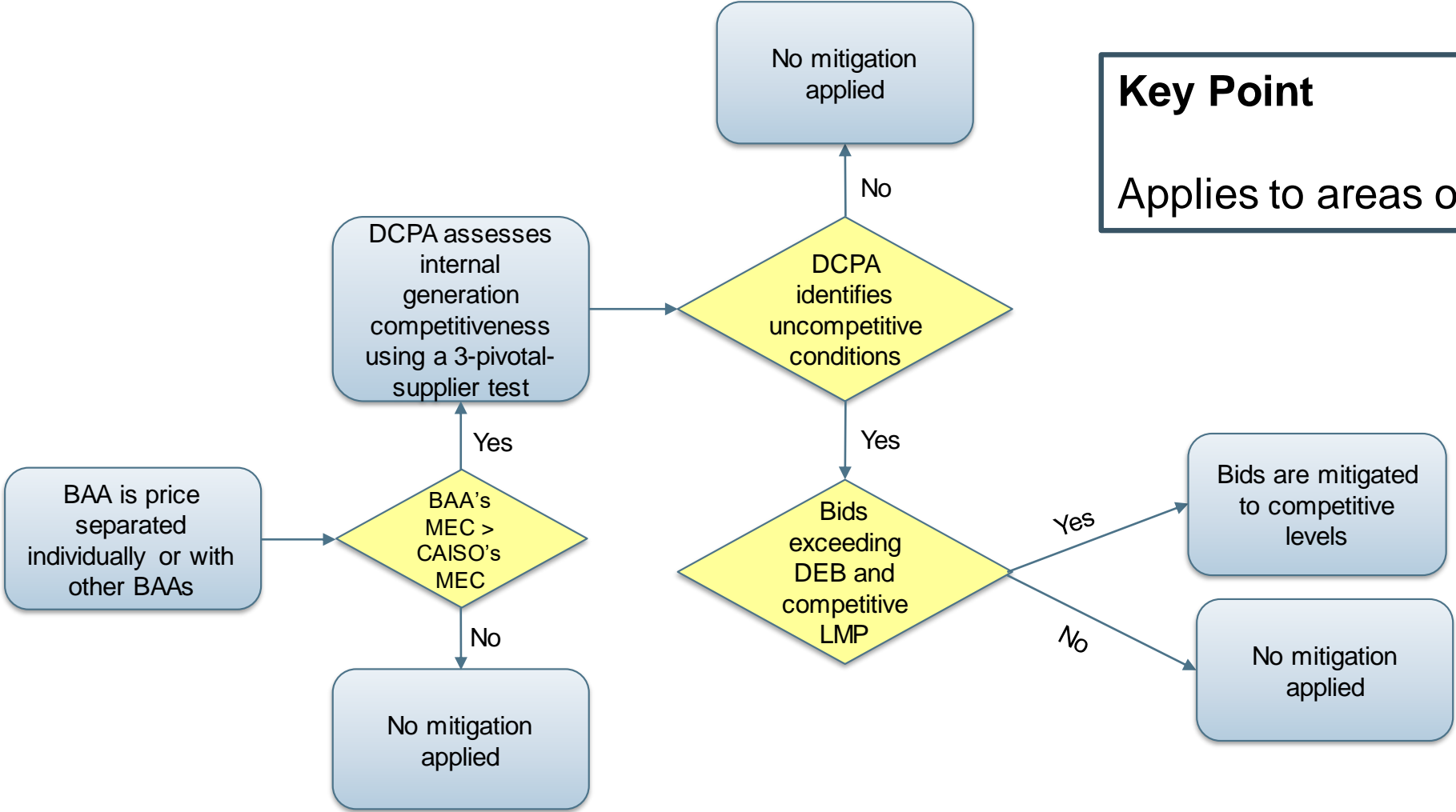
Address Structural Market Power

- Address market power risks for entities that control the majority of generation in their BAA.
- Protect third-party transmission customers, including smaller load-serving entities and independent/renewable generators, who rely on WEIM for imbalance energy service.

Support Market-Based Rate Authority

- Provide a foundation for granting market-based rate authority to WEIM participants.

Dynamic Competitive Path Assessment (DCPA) Evaluates Competitive Conditions



Key Point
Applies to areas outside the CAISO BAA

Enhancing BAA-Level MPM: Exploring the Grouping Approach

RATIONALE FOR THE GROUPING APPROACH

Limitations of the Current BAA-level MPM Methodology

- Tests BAAs individually and ignores supply contributions from other BAAs.
- May overestimate structural market power and lead to excessive mitigation.
- Reflects an outdated methodology from when the WEIM was smaller and simpler.

Not Discussed Today

Including CAISO in the BAA-level MPM framework

Adding an “impact test”

Only mitigating pivotal suppliers rather than all suppliers

Potential Advantages of a Grouping Approach



More accurate
assessment of
structural
competitiveness



Reduces unnecessary
mitigation by
considering broader
available supply



Better reflects the
actual market
conditions and
competitive dynamics

Stakeholder Feedback on a Grouping Approach

General Support with Caveats

- Most stakeholders are cautiously supportive of the grouping concept in principle and see it potentially improving MPM accuracy

Key Concerns

- Stakeholders expressed concerns about whether the DCPA trigger is appropriate for assessing BAA-level market power.
- Increased complexity makes after-the-fact review more difficult
- Impact on market clearing time for WEIM and EDAM
- Could a BAA pass individually but fail as a group?

Stakeholder Feedback on a Grouping Approach

Methodology Questions

- DMM raised technical questions about how demand for counter-flow is calculated.
- Clarify “direct transfer connection”.
- What is the logic that defines how the competitive LMP is set?
- When does MPM assessment stop?
- How does the methodology change when the test includes the CAISO BAA?

Staff Feedback on Key Concerns

- The MPM process should apply whenever a BAA is isolated from external supply and fails the 3-pivotal-supplier test, as these structural conditions require safeguards to ensure competitive market outcomes regardless of price levels.
- CAISO will publish all relevant data to support after-the-fact review.
- The grouping approach should minimally impact EDAM/WEIM solve times.
- It is possible that a BAA could pass individually but fail as a group.

Relevant materials from previous PFE working group sessions

Working Group Session 4

<https://stakeholdercenter.caiso.com/InitiativeDocuments/Presentation-Price-Formation-Enhancements-Sep14-2023.pdf>

Working Group Session 7

<https://stakeholdercenter.caiso.com/InitiativeDocuments/Presentation-Price-Formation-Enhancements-Nov16-2023.pdf>

Discussion Paper and Stakeholder Recommendations (and presentation)

<https://stakeholdercenter.caiso.com/InitiativeDocuments/Discussion-Paper-and-Stakeholder-Recommendations-Price-Formation-Enhancements-Sep-05-2024.pdf>

<https://stakeholdercenter.caiso.com/InitiativeDocuments/Presentation-Price-Formation-Enhancements-Sep30-2024.pdf>

Enhancing BAA-Level MPM: Exploring the Grouping Approach

GROUPING APPROACH: INITIAL CONCEPT

Grouping Algorithm

- ❶ Group BAAs with equal MECs.
- ❷ Sort BAA groups in descending MEC order
- ❸ Set the highest-priced BAA group the current group
- ❹ Perform RSI test for the current group
 - Pass
 - Unmarked BAAs in the current group are marked competitive
 - Uncompetitive and not previously mitigated BAAs in the current group are mitigated with competitive LMP the lowest MEC in the current group
 - Fail
 - Unmarked BAAs in the current group are marked uncompetitive
- ❺ Does the current group include all BAAs?
 - No
 - Is the next higher-priced BAA group directly connected with the current group?
 - Yes
 - Merge this next higher-priced BAA group into the current group
 - No
 - Is this next higher-priced BAA group directly connected with other lower-priced BAA groups?
 - No
 - Make this next higher-priced BAA group the current group
 - Yes
 - Merge this next higher-priced BAA group with those other lower-priced BAA groups
 - Set this merged BAA group the current group
 - Return to ❹
 - Yes
 - Uncompetitive and not previously mitigated BAAs in the current group are mitigated without a competitive LMP
 - Exit

Addressing Stakeholder Questions on the Methodology

Q: What is the logic that defines how the competitive LMP is set?

A: If the current BAA group fails the RSI test, the algorithm flags unmarked BAAs in the group as uncompetitive. If the current BAA group passes the RSI test, the lowest MEC within the group serves as the competitive LMP for BAAs previously marked as uncompetitive.

Q: When does the MPM assessment stop?

A: The algorithm continues until it tests all BAA groups.

Addressing Stakeholder Questions on the Methodology

Q: How does the assessment change if we assume CAISO BAA is always competitive?

A: There are two options: either do not mitigate CAISO BAA in the current group if the group fails the RSI test, or automatically pass BAA groups that include the CAISO BAA without testing.

Q: What does “direct transfer connection” mean?

A: It means there is at least one transfer established between two BAA groups. The BAA groups don't need to be adjacent; the transfer can use transmission rights through another BAA group or one outside the market footprint.

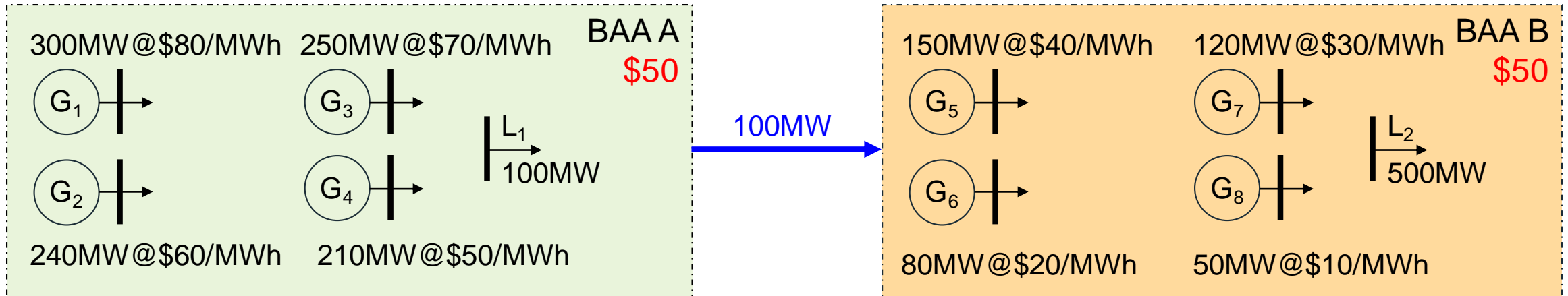
Q: How are supply and demand for counter-flow calculated?

A: Supply for counter-flow includes contributions from all resources except load. It includes transfers, imports, and exports, as fringe competitive supply. Demand for counter-flow consists of the scheduled load in IFM and the load forecast in RUC and RTM.

Enhancing BAA-Level MPM: Exploring the Grouping Approach

ILLUSTRATIVE EXAMPLES AND WALKTHROUGHS

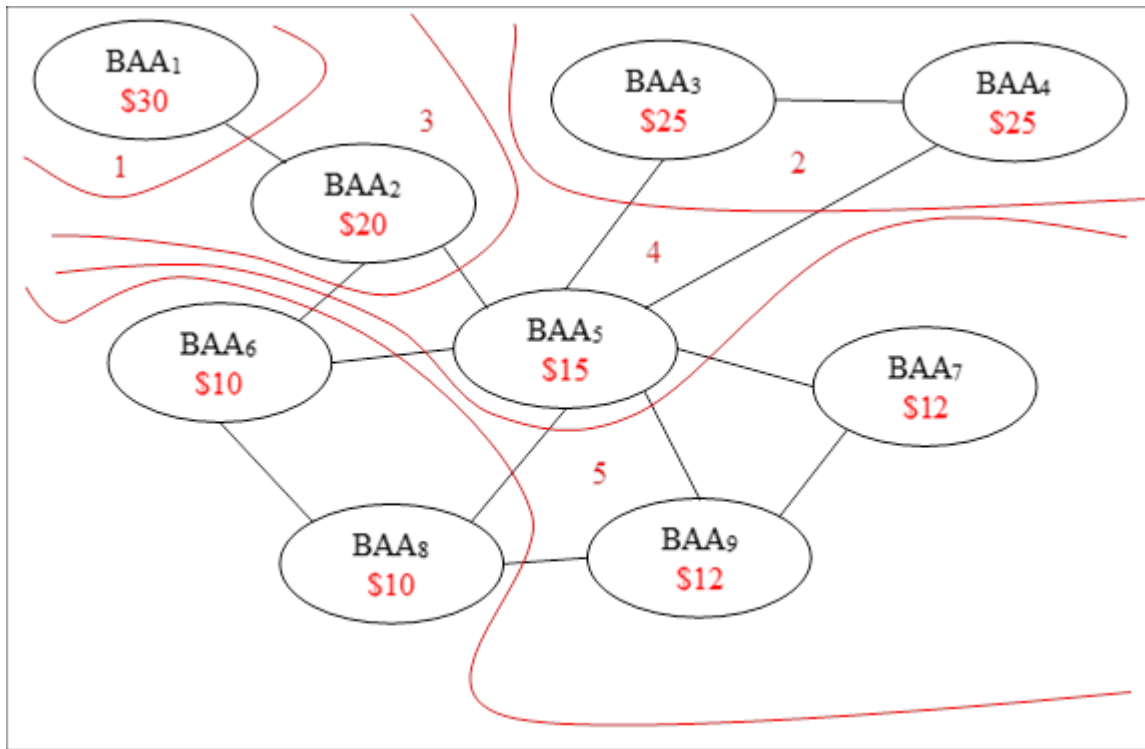
How BAAs that fail individually can pass as a group



$$RSI = \left(\sum_{i \in FCS} \max(SCF_i) - \sum_{i \in EPS} \min(SCF_i) \right) / DCF$$

- BAA A: $RSI = ((210 - 100) - 0) / 100 > 1$ (competitive)
- BAA B: $RSI = ((50 + 100) - 0) / 500 < 1$ (uncompetitive)
- BAA A+BAA B: $RSI = (210 + 150 + 120 + 80 + 50) / (100 + 500) = 610/600 > 1$

Graphical Description of BAA Grouping Steps



□ BAA grouping steps

① BAA 1

② BAAs 3-4

- No direct transfer with BAA 1

③ BAAs 1-2

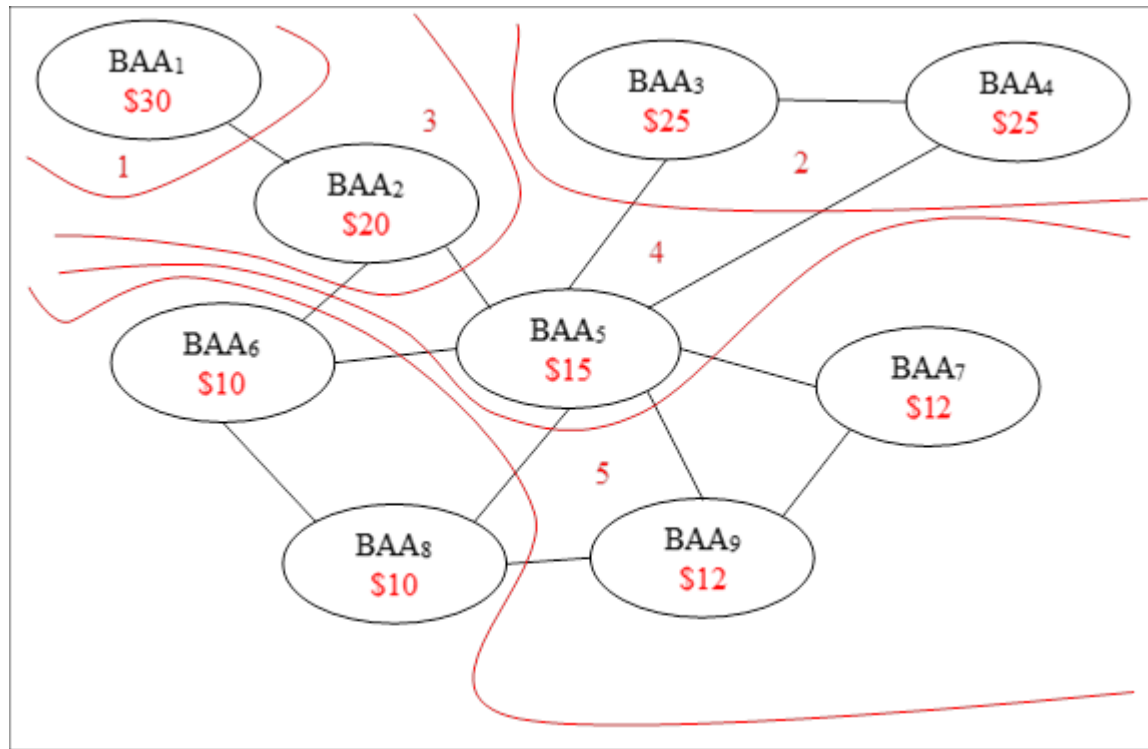
- No direct transfer with BAAs 3-4

④ BAAs 1-5

⑤ BAAs 1-5, 7, 9

⑥ All

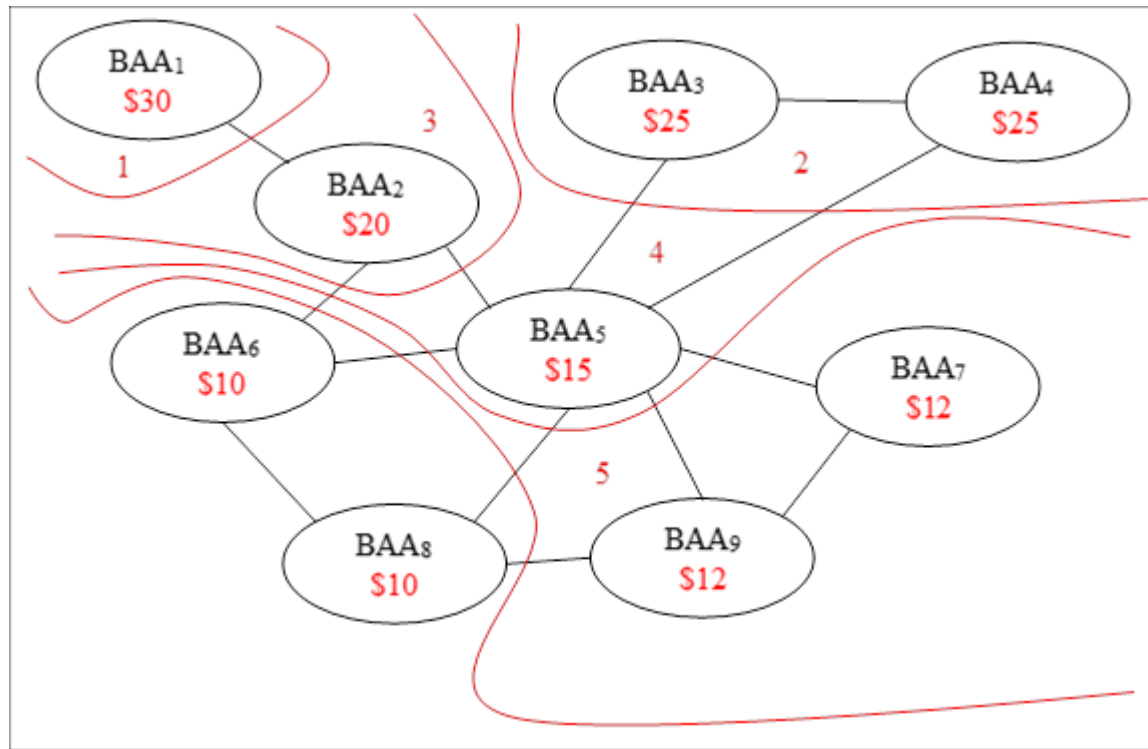
Example 1



□ BAA grouping steps

- ❶ BAA 1 fails; mitigate BAA 1
- ❷ BAAs 3-4 pass (BAA 4 alone would fail)
- ❸ BAAs 1-2 fail; mitigate BAA 2
- ❹ BAAs 1-5 pass
 - Competitive LMP: \$15/MWh for mitigating BAAs 1-2
- ❺ BAAs 1-5, 7, 9 pass
- ❻ All pass

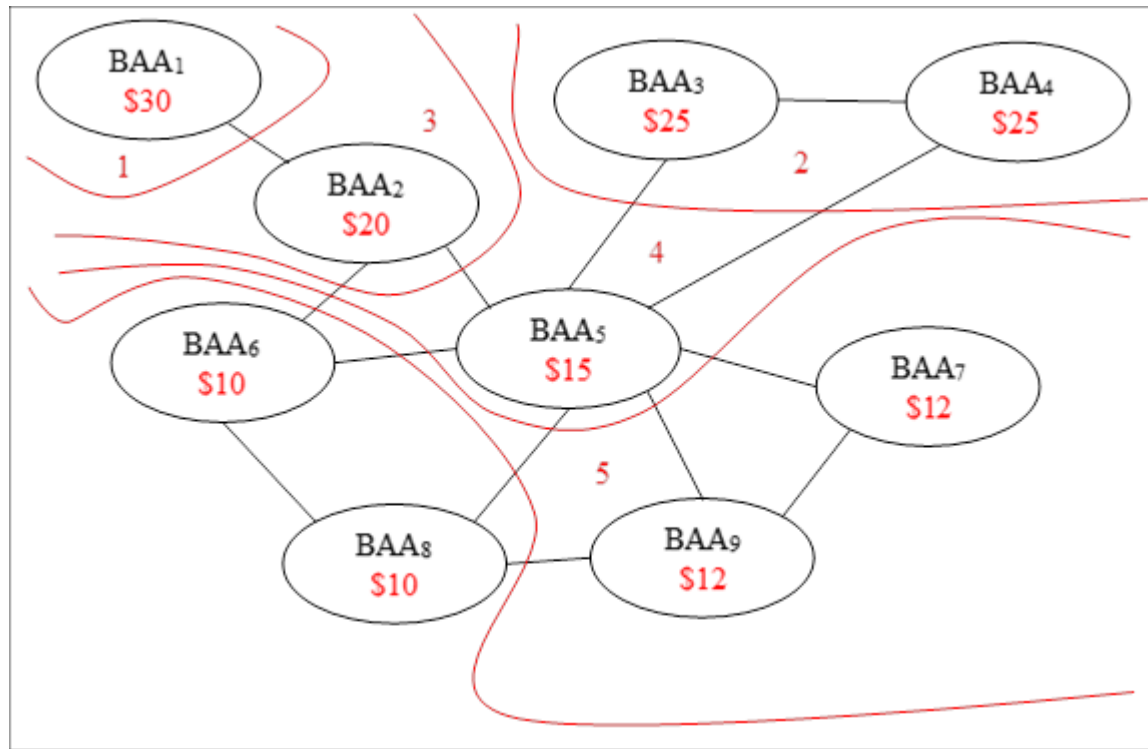
Example 2



□ BAA grouping steps

- ❶ BAA 1 fails; mitigate BAA 1
- ❷ BAAs 3-4 pass
- ❸ BAAs 1-2 fail; mitigate BAA 2
- ❹ BAAs 1-5 fail; mitigate BAA 5
- ❺ BAAs 1-5, 7, 9 pass
 - Competitive LMP: \$12/MWh for mitigating BAAs 1-2 and 5
- ❻ All pass

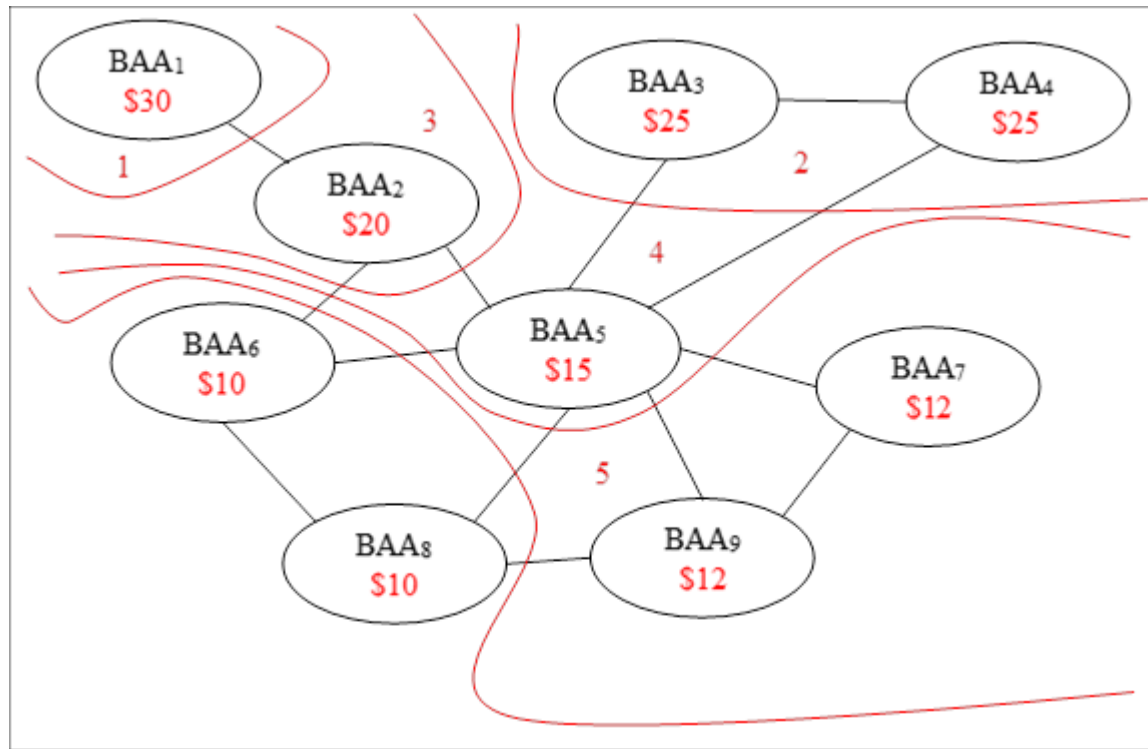
Example 3



□ BAA grouping steps

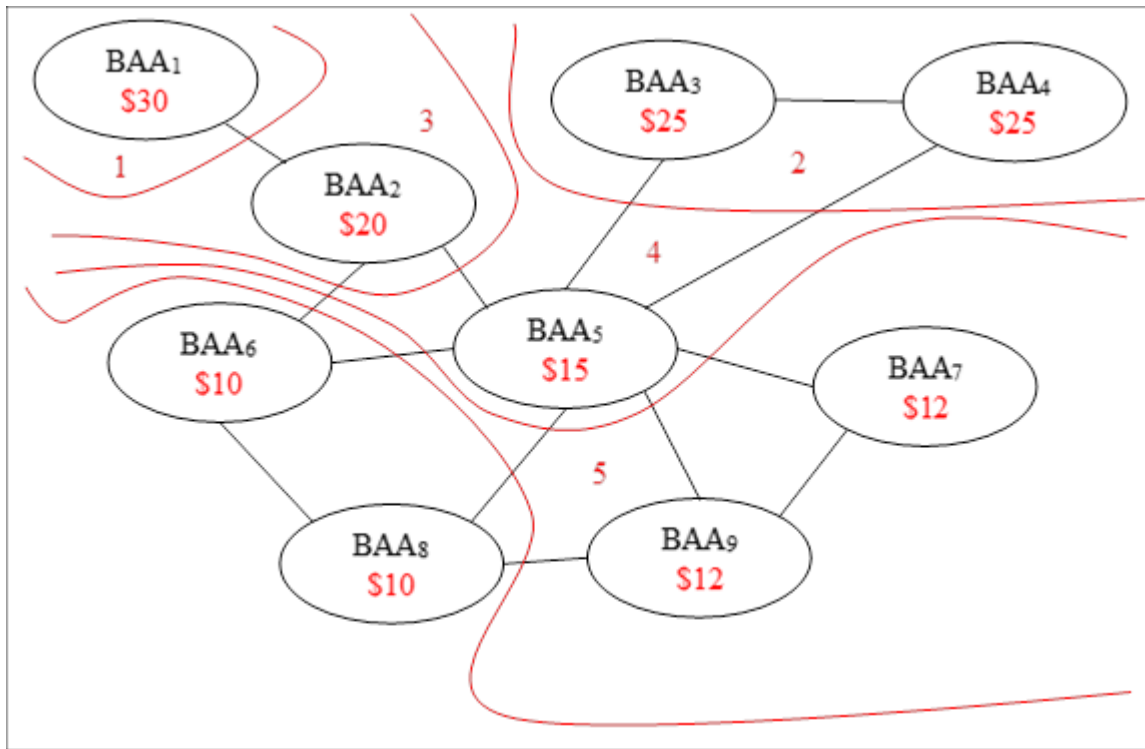
- 1** BAA 1 fails; mitigate BAA 1
- 2** BAAs 3-4 fail; mitigate BAAs 3-4
- 3** BAAs 1-2 pass
 - Competitive LMP: \$20/MWh for mitigating BAA 1
- 4** BAAs 1-5 fail; mitigate BAA 5
- 5** BAAs 1-5, 7, 9 pass
 - Competitive LMP: \$12/MWh for mitigating BAAs 3-5
- 6** All pass

Example 4



- ❑ BAA grouping steps
- ❶ BAA 1 fails; mitigate BAA 1
- ❷ BAAs 3-4 fail; mitigate BAAs 3-4
- ❸ BAAs 1-2 pass
 - Competitive LMP: \$20/MWh for mitigating BAA 1
- ❹ BAAs 1-5 fail; mitigate BAA 5
- ❺ BAAs 1-5, 7, 9 fail; mitigate BAAs 7, 9
- ❻ All fail; mitigate BAAs 6, 8
 - No Competitive LMP for mitigating BAAs 3-9

Example 5 (BAA5 is CAISO BAA, assumed competitive)



□ BAA grouping steps

- ❶ BAA 1 fails; mitigate BAA 1
- ❷ BAAs 3-4 pass
- ❸ BAAs 1-2 fail; mitigate BAA 2
- ❹ BAAs 1-5 pass (no test)
 - Competitive LMP: \$15/MWh for mitigating BAAs 1-2
- ❺ BAAs 1-5, 7, 9 pass (no test)
- ❻ All pass (no test)

Next steps

- Upcoming milestones:
 - <https://stakeholdercenter.caiso.com/InitiativeDocuments/Price-Formation-Enhancements-Working-Group-Phase-2-Schedule-2024-2025.pdf>


Showing November upcoming tentative dates

- November 6, 2024: BAA level MPM - Consideration of how to define the groups and sequence the assessments; detailed examples and walk-throughs of how the grouping approach would work.
- November 14, 2024: Review methods to amortize commitment costs into market prices
- November 20, 2024: BAA level MPM - Discuss modifications to the BAA-level mitigation approach, such as only mitigating pivotal suppliers rather than all suppliers and an "impact test" to only mitigate offers with LMP impacts above a defined threshold.

**All dates are tentative until confirmed through a notice in the ISO's Daily Briefing.*

For reference

- Visit initiative webpage for more information:
<https://stakeholdercenter.caiso.com/StakeholderInitiatives/Price-formation-enhancements>
- If you have any questions, please contact Brenda Marquez at
ISOStakeholderaffairs@caiso.com

Status				
	Proposal Development	Decision	Implementation	Completed/Closed
Phase 2	Phase 2 Nov 06, 2024* Working group, BAA level MPM Nov 20, 2024* Working group, BAA level MPM Dec 11, 2024* Working group, BAA level MPM			
Phase 1		Jul 31, 2024 Order accepting tariff amendment (ER24-2168) Jul 08, 2024 Answer to comments (ER24-2168) May 31, 2024 Tariff amendment filing (ER24-2168)	Jul 11, 2024 Training Aug 01, 2024 Production Implementation milestones	
Phase 2 Joint Authority				
		 Price Formation Enhancements - Working Group Phase 2 - Schedule 2024-2025 10/25/2024 Updated 10/25/24		