Price Formation Enhancements Phase 2 Stakeholder Meeting
Day 1: BAA-Level Market Power Mitigation

Price Formation Enhancements: BAA-Level MPM and Scarcity Pricing Revised Straw Proposal

July 13, 2026

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Where are we in the process?

Day 1 agenda and timing

Time	Block	Purpose
:00-:25	Open and frame the RSP	Orient stakeholders and explain why these RSP items are moving forward
:25-1:00	CAISO BAA treatment and analysis	Explain why CAISO keeps default competitive status and what data support referral
1:00-1:45	Grouping method	Explain MEC ordering, export transfer connectivity, group testing, and the example
1:45-2:20	Net buyer / LSO Identifying pivotal suppliers	Explain interval-specific LSO, withholdable capacity, and mitigating specific suppliers
2:20-2:30	Close and preview Day 2	Summarize feedback needs and preview scarcity pricing

Day 2 meeting goals

Explain the revisions

What changed from the straw proposal and why

Walk through the mechanics

Make sure grouping, LSO, and pivotal supplier logic are clear

Target feedback

Where written comments should focus before the draft final proposal

- Preserve time for questions after the technical sections
- Use examples to show how the proposals work
- Separate current items from future issues

Two-day roadmap

Day 1

BAA-level market power mitigation

Grouping, CAISO BAA treatment, LSO, and pivotal suppliers

Day 2

Scarcity pricing

Load shed pricing, armed reserves, emergency actions, and future comprehensive design

Ready to advance

Targeted BAAMPM reforms and scarcity pricing updates

Needs feedback

Implementation choices, safeguards, data inputs, and tradeoffs

Future phase

BAAMPM for CAISO and comprehensive scarcity pricing

RSP decision framework

Reduce over-mitigation

Account for neighboring BAA competition, load obligations, and truly pivotal suppliers

Preserve price signals

Do not suppress legitimate prices when supply is tight and the market needs resources

Defer unresolved issues

Do not expand BAAMPM to CAISO or adopt comprehensive scarcity pricing in this proposal

Stakeholder feedback

When	Forum	What changed
Sep 2025	Straw proposal meetings	Changes to grouping, CAISO BAA, LSO, pivotal suppliers, and scarcity pricing timing
Oct-Nov 2025	WEM GB spotlight #1 and scarcity pricing working groups	Two-track plan – near-term package plus broader scarcity pricing work
Jan 2026	MSC discussion	Updated BAAMPM analysis and input on mitigation and scarcity pricing
Mar 2026	WEM GB spotlight #2	Stakeholder differed on when to do comprehensive scarcity pricing

Stakeholder feedback directly changed the RSP scope, sequence, and technical design.

Price Formation Enhancements Revised Straw Proposal

CHANGES TO BAA-LEVEL MPM

Current BAAMPM can overstate market power

Tests single BAAs

The current framework tests each BAA alone and can miss competitive supply from connected areas

Supplier incentives

The pivotal supplier test can assume affiliates withhold supply they need to serve their own load

Mitigates all suppliers

If a BAA fails, current rules mitigate every supplier in it, even non-pivotal suppliers

Goal: align mitigation with actual competition in the evolving WEIM/EDAM footprint.

Four design elements

Question	RSP answer
How will CAISO BAA be treated?	Keep default competitive status
Which BAAs are tested together?	Group BAAs by MEC and export transfer connectivity
How much capacity could a supplier withhold?	Subtract load-serving obligations from withholdable capacity
Which suppliers are mitigated after a group fails?	Only pivotal suppliers

How stakeholder feedback shaped the proposals

Straw proposal or feedback	RSP response	Where it appears
CAISO BAA would no longer be automatically competitive	RSP withdraws that change. CAISO keeps default status; CAISO BAAMPM moves to a future phase.	CAISO BAA treatment
Grouping approach let a lower-priced BAA fail only because it was tested with a higher-priced group	RSP keeps high-to-low sequencing. If a merged group fails, test the lower-priced group on its own	Grouping algorithm
Stakeholders asked for clearer terms	RSP clarifies competitive MEC vs. LMP, standardizes export transfer connections, and drops use of counterflow concepts	Grouping algorithm
Straw proposal explored LSO methods and kept the quarterly net buyer process	RSP replaces the quarterly net buyer process with interval-specific LSO and uses market outcomes and forecasts when possible.	LSO and net buyer change
Straw proposal presented options to identify suppliers for mitigation after a failed 3PS test	RSP adopts a version of Option 2 – use 1PS/2PS/3PS tests to set a cutoff and mitigate only pivotal suppliers	Pivotal supplier mitigation

Keep CAISO BAA default competitive status

Why keep this status?

The record does not yet support applying the BAA-level test to CAISO

Main technical concern

The current test may not fully count CAISO economic intertie import offers as competitive supply

Future evaluation

Revisit CAISO BAA mitigation with broader scarcity pricing reforms

- If a tested group includes the CAISO BAA, the group passes.
- Local MPM and other existing rules still apply.
- The revision keeps grouping benefits for non-CAISO BAAs and avoids understating CAISO import competition.

Why this links to scarcity pricing

BAAMPM can change market results during tight evening hours

→

Economic intertie offers may discipline CAISO prices, but the test may not fully capture them

→

Broader mitigation without robust scarcity pricing could suppress legitimate prices

→

Evaluate CAISO BAAMPM and broader scarcity pricing together

- Please separate comments on grouping from comments on CAISO BAA treatment.

Pass rate changes by algorithm variation

BAA NAME	ORIGINAL	GROUPING	GRP ADJ	GRP, LSO	GRP ADJ, LSO	GRP, testCISO	GRP ADJ, testCISO	GRP, testCISO, LSO	GRP ADJ, testCISO, LSO
AVA	93.4%	2.1%	2.1%	6.6%	6.6%	-1.0%	-1.0%	5.9%	5.9%
AVRN	79.2%	1.7%	1.7%	11.8%	12.1%	-1.4%	-1.4%	11.2%	11.4%
BCHA	60.2%	0.8%	0.8%	15.6%	17.0%	-2.2%	-2.2%	14.8%	16.2%
BPAT	62.6%	1.4%	1.4%	16.0%	16.5%	-1.3%	-1.3%	15.3%	15.9%
PACW	79.2%	1.7%	1.7%	11.8%	12.1%	-1.4%	-1.4%	11.2%	11.4%
PGE	69.7%	1.7%	1.7%	14.2%	14.5%	-1.0%	-1.0%	13.6%	13.9%
PSEI	70.5%	1.5%	1.5%	20.2%	21.4%	-1.2%	-1.2%	19.5%	20.8%
SCL	70.5%	1.6%	1.6%	20.2%	21.3%	-1.2%	-1.2%	19.5%	20.8%
TPWR	70.6%	1.5%	1.5%	19.9%	21.1%	-1.3%	-1.3%	19.3%	20.5%
IPCO	93.5%	2.1%	2.1%	6.5%	6.5%	-1.0%	-1.0%	5.7%	5.8%
NWMT	93.5%	2.1%	2.1%	6.5%	6.5%	-1.0%	-1.0%	5.8%	5.8%
PACE	97.1%	0.9%	0.9%	2.9%	2.9%	-2.2%	-2.2%	2.1%	2.1%
AZPS	100.0%	0.0%	0.0%	0.0%	0.0%	-3.1%	-3.1%	-0.8%	-0.8%
EPE	97.8%	0.3%	0.3%	2.2%	2.2%	-2.8%	-2.8%	1.4%	1.5%
NEVP	100.0%	0.0%	0.0%	0.0%	0.0%	-3.1%	-3.1%	-0.8%	-0.8%
PNM	100.0%	0.0%	0.0%	0.0%	0.0%	-3.1%	-3.1%	-0.8%	-0.8%
SRP	97.2%	0.1%	0.1%	2.7%	2.7%	-3.0%	-3.0%	1.9%	1.9%
TEPC	97.3%	0.3%	0.3%	2.7%	2.7%	-2.8%	-2.8%	1.9%	1.9%
WALC	100.0%	0.0%	0.0%	0.0%	0.0%	-3.1%	-3.1%	-0.8%	-0.8%
BANC	100.0%	0.0%	0.0%	0.0%	0.0%	-3.1%	-3.1%	-0.8%	-0.8%
CISO	100.0%	0.0%	0.0%	0.0%	0.0%	-3.1%	-3.1%	-0.8%	-0.8%
LADWP	99.9%	0.0%	0.0%	0.1%	0.1%	-3.1%	-3.1%	-0.8%	-0.7%
TIDC	100.0%	0.0%	0.0%	0.0%	0.0%	-3.1%	-3.1%	-0.8%	-0.8%

Source: CAISO MSC presentation, Updated Analysis on BAA MPM, Jan. 16, 2026, slide 7

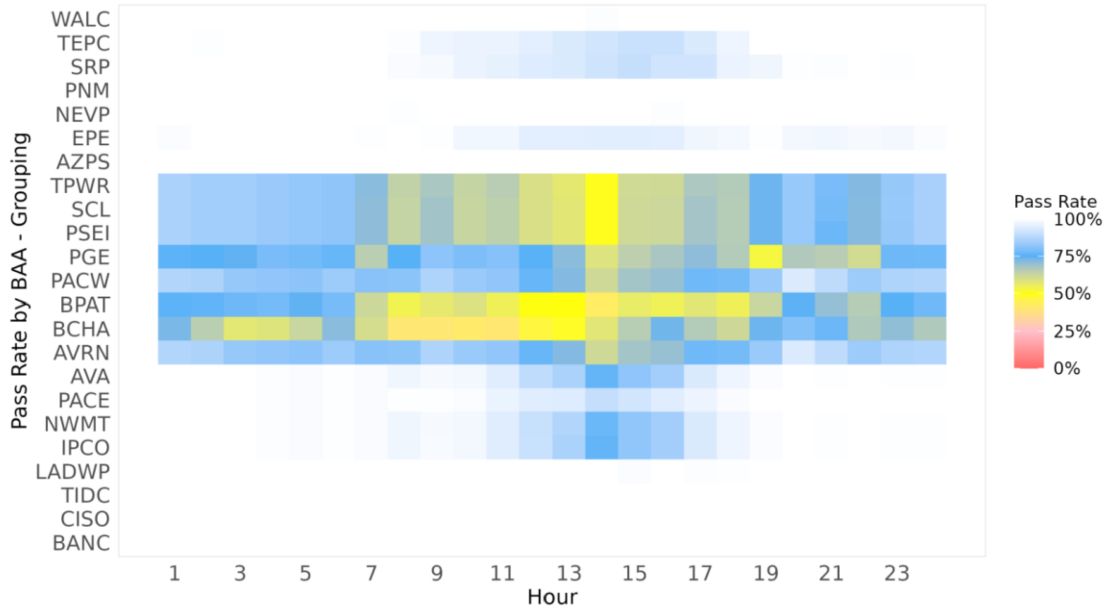
The analysis supports grouping and LSO reforms and shows CAISO treatment needs focused discussion.

Key Points

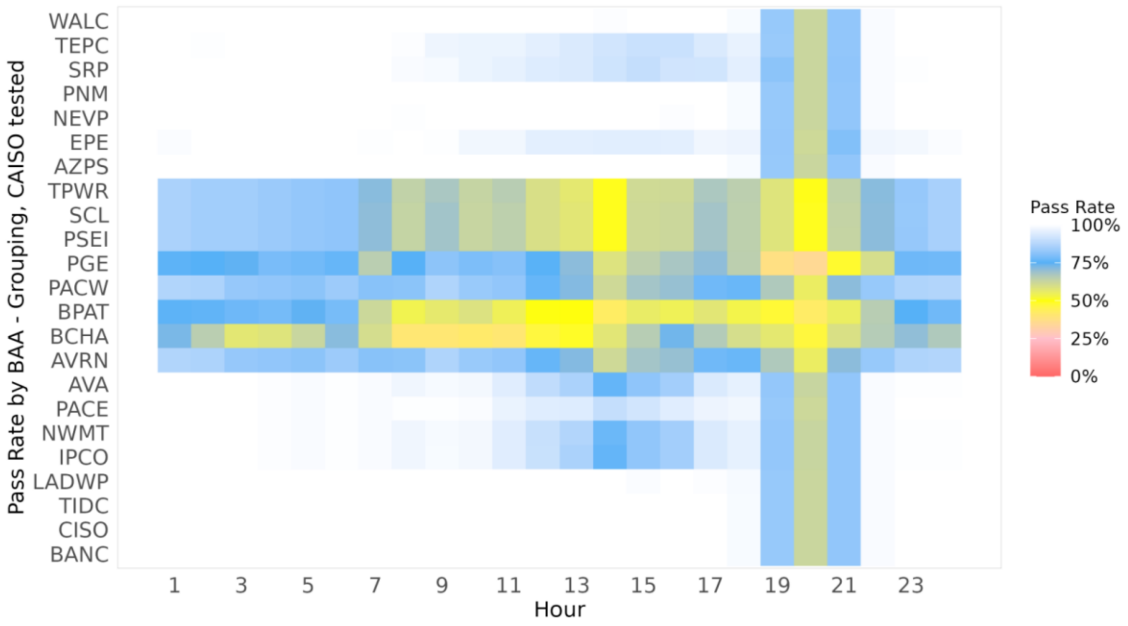
- Grouping increased average pass rates by about 0.9 points (range: 0.0-2.1). 15 BAAs improved; none declined
- Grouping + LSO increased average pass rates by about 7.1 points (range: 0.0-20.2).
- Group + CAISO test decreased average pass rates by about 2.2 points. All 23 BAAs declined.

Pass rates by hour

CAISO not included



CAISO included



Source: CAISO MSC presentation, Updated Analysis on BAA MPM, Jan. 16, 2026

What the updated analysis supports – and does not prove

Supports near-term changes

- Grouping recognizes regional competition
- LSO improves pass rates by reflecting load-serving exposure
- Findings support proceeding for non-CAISO BAAs

Supports deferring CAISO BAA

- Testing CAISO changes pass rates, especially HE 19-21
- LSO improves results but does not resolve the evening hour concern
- Analysis shows the need to better capture CAISO intertie competition

Does not prove

- CAISO BAA-level market power is widespread
- Structural test failures alone prove market power harm
- CAISO BAA is always competitive and its default status should never be revisited

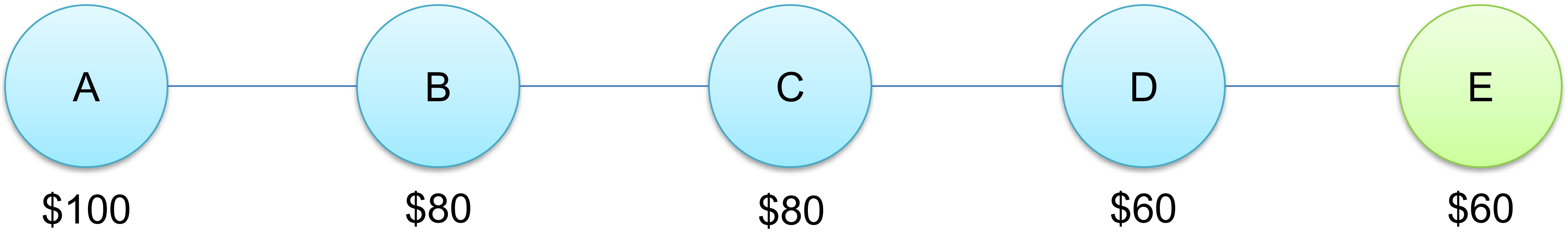
1. Proceed with grouping + LSO
2. Keep CAISO status
3. Evaluate import competition + scarcity pricing in a future phase

Grouping methodology

Rank by MEC	Form groups	Test RSI	Merge and retest	Set competitive MEC
• Use BAA-specific MECs, high to low	• Merge BAAs with equal MECs and export transfer connectivity	• Apply 3PS/RSI unless the group contains CAISO	• Test export-connected merged groups • Retest the lower-priced group alone if needed	• Use the lowest MEC in a passing group • If a BAA does not pass, use bid floor ($-150/MWh)

- Use MEC because BAAMPM tests BAA power balance constraints and price separation driven by transfer constraints.
- The improved algorithm fixes path dependency where a lower-priced group can pass even if the merged group fails.
- If a BAA does not pass the test, mitigation functionally defaults to the resource’s DEB.

Grouping example



Iteration	Action	Result
1	Test {A}.	Fails → A is marked uncompetitive.
2	Merge and test {A,B,C}. If it fails, test {B,C} alone.	{A,B,C} fails {B,C} passes → mark B and C competitive at $80 MEC.
3	Merge and test {A,B,C,D,E}.	Group includes CAISO, so mark D and E competitive. BAA A gets $60 competitive MEC.

Replace quarterly net buyer exclusion with interval-specific LSO

Current approach

Identify net buyers quarterly using 12 months of metered supply and demand

New process

BAAMPM identifies each affiliate as a net buyer or net seller each interval using the LSO-adjusted withholdable capacity calculation

- This change applies only to BAA-level MPM and does not change local MPM.

Integrating load-serving obligations

Current concern	Proposal	Result
• The 3PS test may assume an affiliate withholds all available capacity	• Treat the greater of minimum output or LSO as non-withholdable, capped at available supply	• Withholdable capacity better reflects incentives

Withholdable capacity = max supply – non-withholdable output floor

Example: if max supply is 1,000 MW and LSO is 600 MW, only the 400 MW above LSO may be withholdable.

Proposed LSO inputs by market context

Context	Proposed LSO input	Notes
Day-ahead market	Total scheduled load from the IFM MPM pass, including net virtual demand	Confirm how to treat net virtual demand
RTM: single-affiliate BAA	BAA real-time demand forecast for the interval	Straightforward when one affiliate serves BAA load
RTM: multi-affiliate EDAM BAA	BAA real-time demand forecast x historical affiliate load share	Includes an adjustment process for load changes
RTM: multi-affiliate WEIM-only BAA	Need accurate metered load shares, or set LSO to 0	MSC discussion suggested supply share is not a reasonable proxy

In WEIM, calculated LSO includes base scheduled net exports

Target mitigation to pivotal suppliers

Group fails 3PS
- The structural test finds the group noncompetitive

Rank suppliers
- Rank by withholdable capacity, largest to smallest

Run 1PS
- Flag individually pivotal suppliers until a supplier passes → forms the "anchor" for the next test

Run 2PS/3PS
- Use the anchor supplier or pair to find jointly pivotal suppliers

Set cutoff
- The first passing 3PS test establishes suppliers not subject to mitigation

- Avoids mitigating non-pivotal suppliers in a noncompetitive group
- Acknowledges DMM concern that non-pivotal suppliers may still exercise market power in thin supply curve segments
- Accepts some Type II under-mitigation risk to reduce Type I over-mitigation risk

Example

Step	Test	Result
1PS	Test S1 Test S2	S1 fails → flag S1 S2 passes and anchors the 2PS group
2PS	Test S2+S3 Test S2+S4	S2+S3 fail → flag S2 and S3 S2+S4 passes and anchors the 3PS group
3PS	Test S2+S4+S5 Test S2+S4+S6	S2+S4+S5 fail → flag S4 and S5 S2+S4+S6 passes and sets the cutoff at S6
Outcome	Suppliers flagged through failed tests	Mitigate S1-S5 Do not mitigate S6 or lower-ranked suppliers

Day 1 close and transition to Day 2

Current proposals	Future phase issues	Feedback needed
• BAA grouping for BAAMPM • LSO integration • Mitigation only pivotal suppliers	• Applying BAAMPM to the CAISO BAA • Potential conduct-and-impact testing • Exclusions for very low or negative bids	• Grouping edge cases • MEC treatment • LSO data • Pivotal supplier algorithm

Day 1

Mitigation reforms

Prevent market power from setting uncompetitive prices

Market design challenge

Distinguish artificial scarcity caused by market power from true scarcity

Day 2

Scarcity reforms

Ensure prices reflect emergency system stress

Price Formation Enhancements Revised Straw Proposal

APPENDIX SLIDES

Appendix: BAAMPM vs. Local MPM

Feature	BAA-level MPM	Local MPM
Market power source	Binding transfer constraints between BAAs or BAA groups	Physical transmission constraints inside a BAA
Constraint tested	BAA power balance constraint	Specific transmission line or flowgate
Competitiveness test	3PS / RSI for the BAA group	3PS / RSI for constraint-specific counterflow
Mitigation target	Pivotal suppliers in a noncompetitive group	Resources with a noncompetitive congestion component

Appendix: MEC treatment under EDAM

- EDAM uses BAA-specific MECs instead of one system MEC (SMEC)
- BAA-specific MECs show price separation when transfer constraints bind
- BAAMPM uses MEC (not full LMP or MEC plus GHG) to identify market power from binding transfer constraints
- GHG price effects are modeled separately and should not trigger BAAMPM by themselves

Appendix: RSI concept for BAAMPM

$$RSI = \frac{\textbf{Available competitive supply}}{\textbf{Demand}}$$

If RSI ≥ 1

Competitive supply can meet demand → group passes

If RSI < 1

Potentially pivotal suppliers are needed to meet demand → group fails

With LSO

Supplier load obligations increase non-withholdable output in the numerator

Appendix: determining affiliate groups

Affiliate information

- SC applicants identify entities that own, control, or schedule resources

Control chain

- Consolidate entities under common control

Supplier portfolio

- Treat resources under common control as one affiliate group

MPM purpose

- Prevent fragmentation from understating market share

Next Steps

Comments due July 28, 2026, via ISO Commenting Tool

Publish Draft Final Proposal with Stakeholder Meeting *Please note that the dates above are tentative until the CAISO publishes a notice formally confirming them*

Price formation enhancements phase 2

Contact us at Stakeholder Affairs at ISOStakeholderaffairs@caiso.com or bmarquez@caiso.com

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