



# Congestion Revenue Rights Enhancements


Working Group Meeting #6:  
Goals and Problem Statements

May 12, 2025  
9 am – 4 pm

# 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 to be brief and refrain from repeating what has already been said so that we can manage this 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 on the bottom of your screen.
  - **Note:** \*3 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 **Hannah Pearson** or to all panelists.
- If you need technical assistance during the meeting, please send a chat to the event producer.

# Today's agenda

Time	Topic	Presenters
9:00 – 9:05 am	Welcome + today's agenda	Hannah Pearson
9:05 – 9:15 am	Opening comments	Partha Malvadkar Hilary Staver
9:15 – 12:00 pm	<b>Stakeholder Presentations:</b> California LSE Group  Energy Trading Institute (ETI)  Nodal Exchange  DMM  Bay Area Municipal Transmission Group (BAMx)	Todd Ryan, PG&E  Casey Khan, Sidley Austin LLP  Sylvie Jobes  Roger Avalos  Doug Boccignone, Flynn Resource Consultants Inc.
12:00 – 1:00 pm	Lunch	
1:00 – 1:30 pm	Review of analysis requests and discussion	Hilary Staver
1:30 – 3:30 pm	Discussion on draft goals and problem statements, including review of feedback	Partha Malvadkar Hilary Staver Dinesh Das Gupta
3:30 – 3:45 pm	Next Steps and Closing Comments	Partha Malvadkar Hilary Staver



# Updated Working Group Schedule

Nov. 14, 2024



Working Group Scoping Discussion

Jan. 28, 2025



CAISO CRR Program

Deeper dive into the current CRR program structure and function; stakeholder perspectives and experiences

Feb. 27 and  
Mar. 12, 2025



Analysis

Root cause analysis discussion

April 1, 2025



Benchmarking to Other CRR Programs

CRR and equivalent structures used by other ISOs

May 12 and  
June 9, 2025



Policy Scope and Problem Statements

Review of stakeholder input so far; opportunity for additional stakeholder presentations; focus moving to developing goals and problem statements

# Goals for Today's Meeting

- Review the conversation so far and provide an opportunity for stakeholders to augment or clarify their viewpoints
- Hear additional stakeholder perspectives through presentations
- Discuss follow-up requests in response to the root cause analysis
- Begin distilling the wide range of positions so far into goals and problem statements that can facilitate the development of common ground in the policy development phase

# STAKEHOLDER PRESENTATIONS

# LUNCH BREAK

Meeting will resume at 1 pm

# DISCUSSION OF ANALYSIS REQUESTS

## Analysis Requests:

- In response to the root cause analysis discussed in February and March, stakeholders submitted a number of requests for further analysis
- CAISO staff have reviewed these and are assessing them from a feasibility and bandwidth perspective
- Additional analysis is possible during the policy development phase based on the requests received.
  - No analysis currently scoped in the goal/problem statement phase of the working group

## Analysis Requests cont'd:

- Of the requests provided, the most readily feasible are those for more granular breakdowns of past revenue inadequacy at the constraint level
- CAISO acknowledges the requests associated with a willing buyer willing seller model and are looking into how such an analysis might be structured
- CAISO will provide further updates and opportunities for input on developing the next round of analysis

# GOAL AND PROBLEM STATEMENT DEVELOPMENT

# Congestion Revenue Rights Precedent at FERC and CAISO



Provide open access transmission

Allocate fairly transmission revenues to customers paying the embedded costs of the transmission system

Allow hedging of congestion costs in the context of a Day-Ahead energy market



California ISO

Distribute congestion rents created from congestion pricing in the LMP market

Support equitable allocation of costs and benefits of using transmission system

Facilitate long-term contracting by LSEs and generators

## **Goals:** Fair allocation of transmission revenues to customers paying the embedded costs of the transmission system

- This function speaks to the equity of how congestion rent is distributed, separately from the CRR market's ability to provide a hedging tool
- Possible Goals:
  - CRRs in the auction should be priced at a reasonable approximation of the expected payout of congestion rent in the day-ahead market
  - Transmission customers receive approximately commensurate value for payouts made to CRR rights purchased in the auction

## Topics and Proposals: Fair allocation of transmission revenues to customers paying the embedded costs of the transmission system

- Of the issues and proposed policy changes raised in the working group so far, auction efficiency is the outcome most directly related to this function.
- Relevant policy options:
  - Willing buyer willing seller model
  - Minimum auction bid/clearing price

## Stakeholder Positions: Fair allocation of transmission revenues to customers paying the embedded costs of the transmission system

Is auction efficiency a useful metric for evaluation? What is a “fair” risk-adjusted return?

- “The current CRR market has resulted in California ratepayers bearing the costs associated with over a \$1 billion in revenue shortfall since 2012” (CPUC Energy Division, citing DMM whitepaper statistic)
- Counter: “If a CRR payout exceeds the auction revenue, this is an indication that participants most likely discounted their purchase offers to reflect the uncertainty, and that the risk-adjusted value of the CRR is likely commensurate with the auction price paid.” (Financial Marketers Co.)

## **Stakeholder Positions:** Fair allocation of transmission revenues to customers paying the embedded costs of the transmission system

Are CRR results due to imperfect auction design or other factors? Should the ISO evolve the market design to account for other factors?

- “The risk of lost opportunity is why CRR sellers calculate reservation prices (i.e. offer prices) for each CRR they offer to sell in a monthly auction.” (DC Energy)
- MISO’s auction “lacks the liquidity needed to erase the differences between FTR prices and congestion values... It may be beneficial for MISO to examine its auction processes to determine whether to establish price-based limits on the sale of forward or counterflow FTRs.” (DMM, citing MISO market monitor)

## Stakeholder Positions: Fair allocation of transmission revenues to customers paying the embedded costs of the transmission system

Does the CRR auction have additional externalities?

- “The absence of a CRR auction would lead to significantly higher costs throughout the forward energy markets, which would ultimately be passed on to ratepayers through increased contracting and procurement costs.” (WPTF)
- Counter: “We believe that these speculation activities in the CRR auction markets contribute to both CRR revenue inadequacy and CRR auction inefficiency, and result in an extraction of funds from the parties that pay for the transmission system to entities that do not fund the transmission system.” (BAMx)
- Question: Are there ways to quantify the benefits of CRRs being expressed that are not in the CRR market (i.e. long-term energy contracts)?

## Stakeholder Positions: Fair allocation of transmission revenues to customers paying the embedded costs of the transmission system

Are outlier events distractions from root causes or an important part of auction efficiency?

- “The current CRR market exposes Load Serving Entities (LSEs) to substantial unhedged risks when unexpected events occur. This unhedged risk undermines the intended purpose of the CRR market as a hedging mechanism. Additionally, the speculative nature of the market allows for significant profits to be made infrequently, rather than providing consistent hedging based on expected value scenarios.” (PG&E)
- Counter: “While [outlier] events are important to educate stakeholders on the one of many potential causes of auction inefficiencies, they do not necessarily help stakeholders understand the noticeable trends of auction inefficiencies observed by many in the past years” (SCE)

## **Stakeholder Positions:** Fair allocation of transmission revenues to customers paying the embedded costs of the transmission system

Are outlier events distractions from root causes or an important part of revenue inadequacy?

- “CRR underfunding happens not just during the CAISO grid extreme events but also during the day-to-day regular CAISO market operations.” (CDWR)
- “Many of the top congestion examples were extreme examples that lasted only a short period of time then do not recur... These outlier events... are not accurate representations of auction inefficiency or revenue inadequacy.” (Solea Energy)

# Problem Statements: Fair allocation of transmission revenues to customers paying the embedded costs of the transmission system

- Draft problem statement from Discussion Paper:
  - Auction Efficiency: The ISO CRR auction has been yielding only roughly 65 cents per dollar of congestion revenue. As such, auction prices are not reflecting market participants' congestion price exposure in the day-ahead market.

- **Updated draft problem statements:**

- Since adoption of the 2019 policy changes, the ratio of auction revenue per dollar of CRR payout has improved from 50 cents to 68 cents. However, some stakeholders have expressed that the benefits from the auction mechanism still do not fully justify the cost to them in foregone congestion rent allocation.
- Consideration of CRR market changes should further explore how different types of auction participants contribute to the fair allocation of transmission revenues.

## Goals: Allow hedging costs of congestion in the context of a day-ahead energy market

- This function speaks to how well the CRR market functions as a hedging tool for day-ahead energy market participants subject to congestion risk.
- Draft Goals:
  - The CRR market's products and processes should facilitate hedging tools and maintain the hedging value of CRRs to the extent possible
  - Day-ahead energy market participants exposed to congestion risk should be able to hedge that risk efficiently

# Topics and Proposals I: Allow hedging costs of congestion in the context of a day-ahead energy market

- This function is relevant to:
  - Revenue inadequacy, measures to improve it, and measures associated with shortfall allocation
- Relevant policy options around reducing revenue inadequacy:
  - More granular modeling of loop flows
  - Reducing the shift factor threshold
  - Incentives for timely outage reporting
  - Revisiting the Track 1b shortfall allocation methodology
  - Measures to address flow reversal

## Stakeholder Positions I: Allow hedging costs of congestion in the context of a day-ahead energy market

- “Reducing and standardizing, if not outright eliminating, all shift factor thresholds should be a priority for the CAISO in order to mitigate CRR Settlements Reversal and congestion revenue inadequacy more generally.” – DC Energy, LLC
- “In light of indications that loop flow impacts seem to affect CRR outcomes for a number of constraints, further investigation of loop flow causes and effects appears worthwhile.” – The Six Cities
- “Improving the CRR model: How does CAISO plan to improve the CRR model to reduce the model differences between the CRR and DA Market?” – Southern California Edison

# Problem Statements I: Allow hedging costs of congestion in the context of a day-ahead energy market

- Draft problem statement from the Discussion Paper:
  - Revenue Inadequacy: Pro-ration of CRRs hinders the ability for CRRs to be an effective risk mitigation tool.
    - Pro-rated funding may result in settlements reversal adding to the participant risk.
- **Updated draft problem statements:**
  - Divergence between monthly CRR modeling outcomes and day-ahead market outcomes causes revenue inadequacy that reduces the value of CRRs as a hedging tool. CAISO should evaluate and where feasible adopt measures for reducing this divergence, including those related to loop flows, shift factors, and transmission outages.
  - The method for allocating revenue shortfalls should strike the best balance practicable between allocating congestion revenue back to transmission customers and maintaining the hedging value of CRRs.

## Topics and Proposals II: Allow hedging costs of congestion in the context of a day-ahead energy market

- This function is also relevant to:
  - CRR product design
  - CRR allocation and auction process design
- Relevant policy options around CRR product and process design:
  - TOU period definition
  - Accommodation of hedging storage charging load
  - Balance of Planning Period auctions/auction schedule
  - Revisiting the global derate factor
  - Load migration process updates

## Stakeholder Positions II: Allow hedging costs of congestion in the context of a day-ahead energy market

- “The existing CRR design does not allow eligible paths for storage charging hours nor does it allow granularity to enter the necessary position in opposite direction in two different periods of time. These design flaws lead to CRR not being workable for hedging basis risk for storage.” (Vistra)
- “Balancing auctions provide more opportunities for competitive load-serving entities to shape, by period (year, quarterly, and/or monthly) and by block (peak and off-peak), the congestion risk in their retail portfolio” (Vitol)
- Explore “whether the currently utilized GDF, which is a rather blunt instrument, could be replaced with a more specific, pinpointed approach. Because the GDF is applied across the entire system, it results in a reduction in available CRRs across the system.” (Silicon Valley Power)

## Problem Statements II: Allow hedging costs of congestion in the context of a day-ahead energy market

- Draft problem statements from Discussion Paper:
  - Product Definition: the ISO's current Counterflow CRR allocation process and On/Off peak definitions adversely impact hedging of congestion risks.
  - Limited Allocation: the ISO's application of a Global Derate Factor reduces LSEs' ability to adequately hedge congestion.
- **Updated draft problem statement:**
  - Hedging needs are evolving alongside the composition of the CAISO BAA's generation fleet. The products available in the CRR market and the processes by which they are distributed should be updated to match evolving hedging needs. This could include revisiting the time of use periods, developing measures to facilitate hedging of congestion risk associated with storage charging load, and revisiting the auction schedule.

# Summary: Starting Point Problem Statements

1. Since adoption of the 2019 policy changes, the ratio of auction revenue per dollar of CRR payout has improved from 50 cents to 68 cents. However, a plurality of stakeholders have expressed that the benefits from the auction mechanism still do not fully justify the cost to them in foregone congestion rent allocation.
2. Consideration of CRR market changes should further explore how different types of auction participants contribute to the fair allocation of transmission revenues.
3. Divergence between monthly CRR modeling outcomes and day-ahead market outcomes causes revenue inadequacy that reduces the value of CRRs as a hedging tool. CAISO should evaluate and where feasible adopt measures for reducing this divergence, including those related to loop flows, shift factors, and transmission outages.
4. The method for allocating revenue shortfalls should strike the best balance practicable between allocating congestion revenue back to transmission customers and maintaining the hedging value of CRRs.
5. Hedging needs are evolving alongside the composition of the CAISO BAA's generation fleet. The products available in the CRR market and the processes by which they are distributed should be updated to match evolving hedging needs. This could include revisiting the time of use periods, developing measures to facilitate hedging of congestion risk associated with storage charging load, and revisiting the auction schedule.

# NEXT STEPS

## Next Steps

- Comments on today's meeting will be due May 27<sup>th</sup>.
- The next working group meeting is tentatively scheduled for June 9<sup>th</sup>. It will focus on a review of stakeholder feedback provided so far, discussion on problem statement development, and an additional opportunity for stakeholder presentations.
- If you would like to present at the next meeting please reach out to [ISOStakeholderAffairs@caiso.com](mailto:ISOStakeholderAffairs@caiso.com).

# This Week at the ISO – 5/12/25

## Stakeholder Meetings

*All public stakeholder meetings are also listed on the ISO [calendar](#):*

- Monday, May 12<sup>th</sup> – [Congestion Revenue Rights Enhancements](#)
  - 9:00am - 4:00pm PT ([link](#))
- Monday, May 12<sup>th</sup> – [Resource Performance Expectations - Summer Readiness 2025](#)
  - 10:00am - 12:00pm PT ([link](#))
- Tuesday, May 13<sup>th</sup> – [Release User Group Forum](#)
  - 10:00am - 11:00am PT ([link](#))
- Tuesday, May 13<sup>th</sup> – [Demand and Distributed Energy Market Integration Initiative Working Group](#)
  - 9:00am - 12:00pm PT ([link](#))

# This Week at the ISO Continued

## Stakeholder Meetings

- Wednesday, May 14<sup>th</sup> – [RC West Summer Readiness](#)
  - 1:00pm - 5:00pm PT (RC Portal Access required)
- Thursday, May 15<sup>th</sup> – [Congestion Revenue Rights Customer Partnership Group](#)
  - 10:00am - 11:00am PT ([link](#))
- Thursday, May 15<sup>th</sup> – [Market Update](#)
  - 10:15am - 11:00am PT ([link](#))
- Thursday, May 15<sup>th</sup> – [RC West Oversight Committee - Q2 Public Session](#)
  - 1:00pm - 2:30pm PT ([link](#))
- **Comment Submission Deadlines**
- Tuesday, May 13<sup>th</sup> - [SOC Management for Capacity Awards](#)

# This Week at the ISO Continued

## Trainings

- The ISO encourages market participants to review the new training page on the [Market Participant Portal](#). In addition to the [Learning Center](#), this new training page provides Scheduling Coordinators with a centralized location for accessing computer-based training videos (to learn more, please view the [High-Level Overview](#) video).

## Market Simulations

- Please refer to our [Release Schedule](#) for the most recent updates of initiatives scheduled for MAP- and Production- stage market sims.
  - Thursday, May 15<sup>th</sup> – [Market Simulation Forum](#)
    - 2:00pm - 3:00pm PT ([link](#))
  - Thursday, May 15<sup>th</sup> – [DAME, EDAM, and EDAM CAISO Balancing Authority PR Market Simulation Meeting](#)
    - 1:00pm - 2:00pm PT (Email [marketsim@caiso.com](mailto:marketsim@caiso.com) for registration)

## Business Practice Manual (BPM) Updates

- The status of all PRRs and updated BPMs in the [BPM Library](#) are published on the [BPM Change Management Website](#).
- Tuesday, May 13<sup>th</sup> - [Comments due - BPM Proposed Revision Requests PRR #'s 1618-1629](#)

# ENERGY matters

The California ISO's blog highlights its most recent news releases, and includes information about ISO issues, reports, and initiatives.



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