



California ISO

CRR Settlement in Extended Day Ahead Market

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Principal – Market Settlement Design

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Housekeeping reminders

- This call is being recorded for informational and convenience purposes only. Any related transcriptions should not be reprinted without ISO's permission.
- These collaborative working groups are intended to stimulate open dialogue and engage different perspectives.
- Please keep comments professional and respectful.

Instructions for raising your hand to ask a question

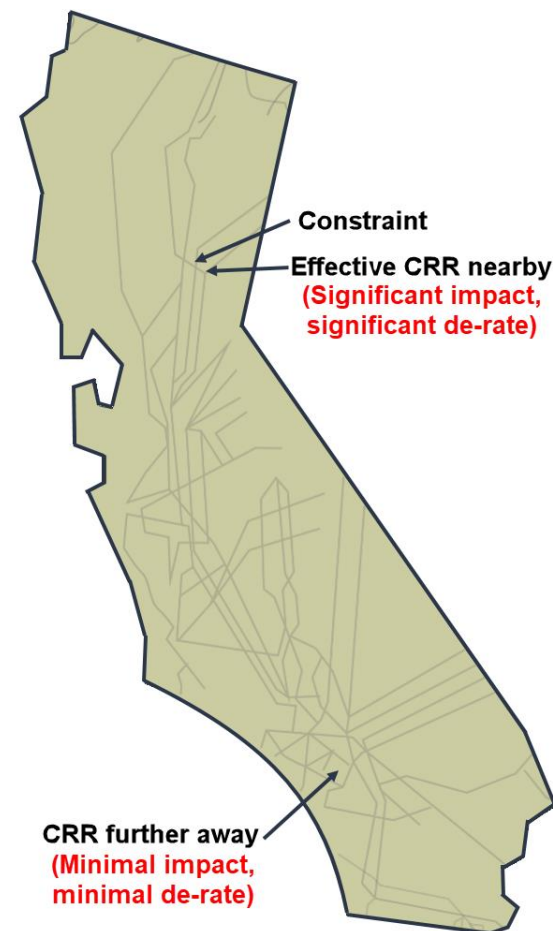
- Open the Participant and Chat panels from the bottom right corner of Webex.
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- Please remember to state your name and affiliation before making your comment.
- You may send your question via chat to all panelists.
- If you need technical assistance during the meeting, please send a chat to the event producer @Intellor Events.

Today's agenda

Time	Topic	Presenters
1:00 – 1:05 pm	Welcome + today's agenda	Christina Guimera
1:05 – 1:15 pm	Opening comments	<ul style="list-style-type: none">• Milos Bosanac• James Lynn• Guillermo Bautista Alderete• George Angelidis
1:15 – 3:45 pm	<ul style="list-style-type: none">• Congestion Revenue Rights Modeling in EDAM• Congestion Revenue Rights Settlement in EDAM	
3:45 – 4:00 pm	Next steps	Christina Guimera

What are Congestion Revenue Rights?

- **Congestion Revenue Rights (CRRs)** are
 - Financial instruments
 - Hedge against congestion risks from the day-ahead market
 - Against marginal cost of congestion risk arising from price difference between source and sink locations on the transmission system
 - Day-ahead congestion rents fund congestion revenue right payouts (CRR1B)



CRR Settlement with EDAM

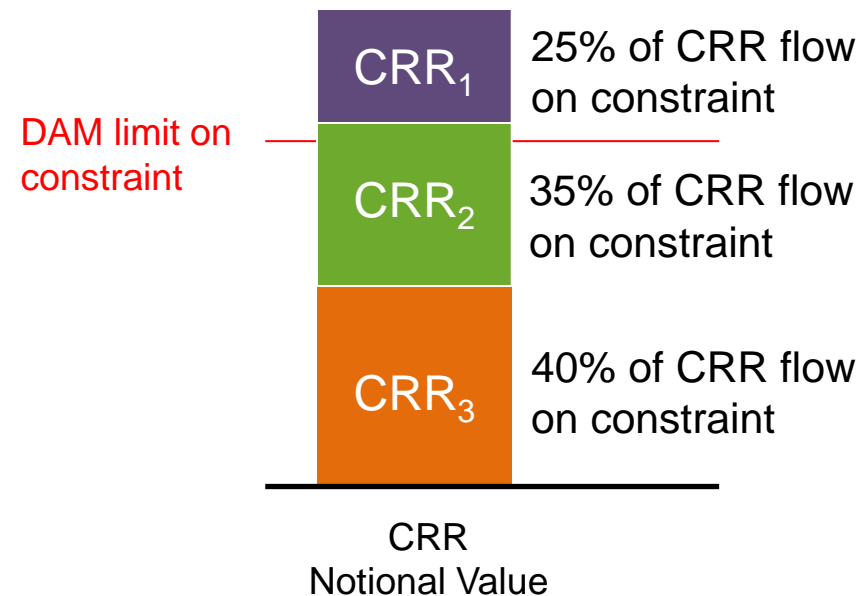
- CRR Settlement is initially calculated daily with a monthly resettlement
- CRR Daily Settlement Amount is the sum of CRR Daily Constraint Amount
- CRR Daily Constraint Amount is sum CRR Notional Value, CRR Clawback Revenue, CRR Circular Schedule Revenue and CRR Deficit Amount
 - CRR Notional Value is the product of CRR Constraint Flow and Constraint Shadow Price
 - CRR Clawback is CRR adjustment CRR Holders who also have virtual bids
 - CRR Circular Schedule is CRR Adjustment associate with Circular Schedules
 - CRR Daily Deficit Constraint Amount is max of zero and the CRR Daily Offset Amount
 - CRR Daily Offset Amount is the net of CRR Hourly Offset Amounts.
 - Net of CRR Hourly Surpluses and CRR Hourly Deficits

CRR1B Application with EDAM

- Calculate CRR Notional Value at each constraints across EDAM footprint
 - CRR Flow as product of CRR Award and the difference between source shift factor and sink shift factors
 - CRR Notional Value is the product of CRR Constraint Flow and Shadow Price
- Calculate IFM Constraint Flow Amount for CAISO BAA Constraints Only
 - Based upon all IFM Schedules with an effectiveness of CAISO Constraints
 - Derive IFM Flow as product of the net of IFM Nodal schedule and Shift Factor
 - Do not include ETC, TOR, or OATT Rights with the financial hedge attribute
- Calculate CRR Constraint Offset Amount
 - For CAISO BAA Constraint, CRR Offset Amount is equal to the product of the Constraint shadow price and the difference between CRR Flow and IFM Flow
 - For EDAM BAA Constraints, the CRR Offset Amount shall equal to zero

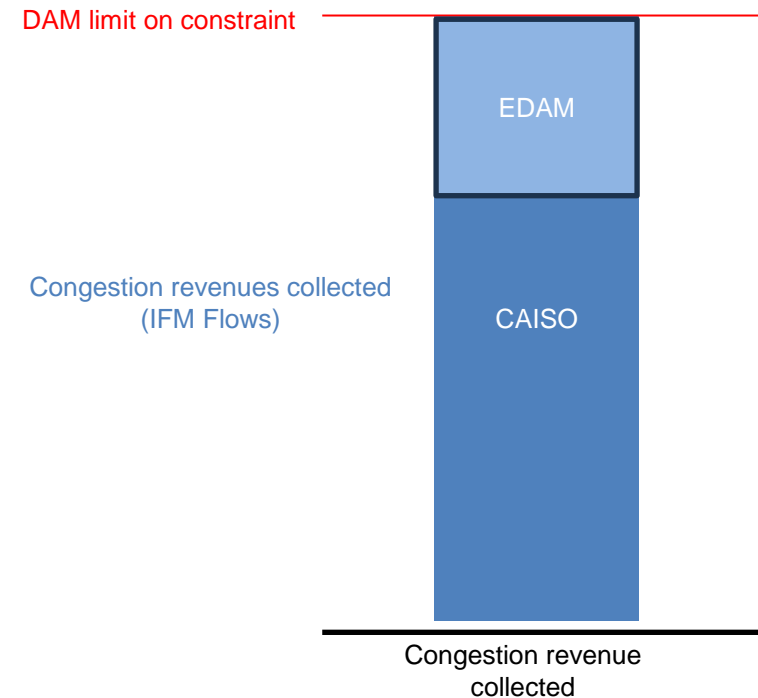
Congestion Revenue Rights Flow by Constraint

- CRR Constraint Flow by constraint
 - $\text{CRRFlowMW}_{q,k,m,t} = (\text{CRR}_q \text{ MW}) \times (\text{SFsrc}_{q,k,m,t} - \text{SFsnk}_{q,k,m,t})$
- CRR Notional Value by Constraint
 - $\text{NotionalCRRRevenue}_{q,k,m,t} = \text{CRRFlowMW}_{q,k,m,t} \times \mu_{k,m,t}$



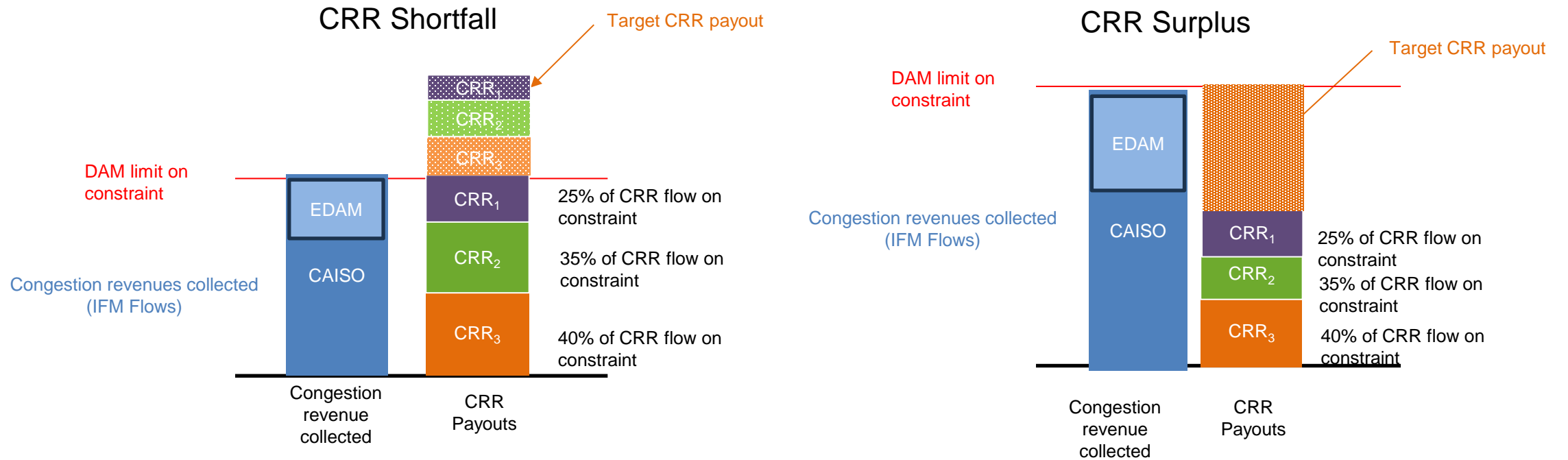
IFM Flow by Constraint

- Calculate IFM Flow per CAISO Constraints Only based upon all IFM schedules:
 - IFM MW Flow_{k,m,t} = $\sum SF_{n,k,m,t} * IFMMW_{n,k,m,t}$
- IFM Flow Revenue by CAISO Constraints:
 - IFMFlowRevenue_{q,k,m,t} = IFMFlowMW_{q,k,m,t} × $\mu_{k,m,t}$



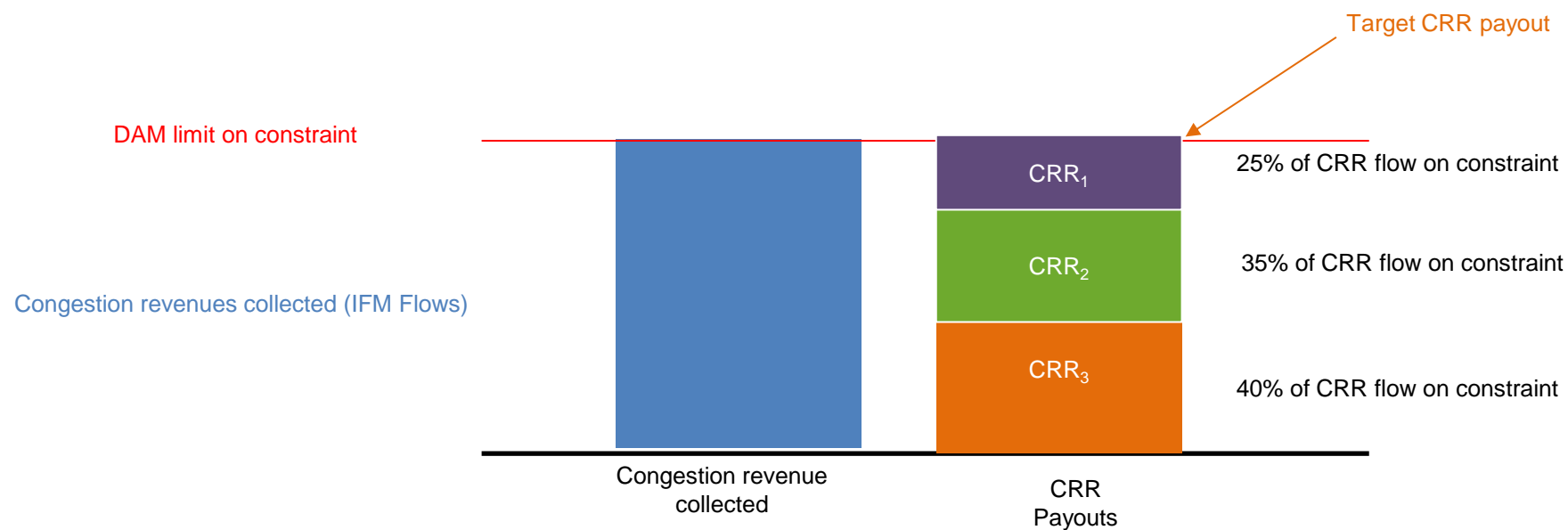
CRR1B evaluation CRR Notional Value on impacted CAISO BAA constraints

CRR1B evaluates CAISO BAA constraints to determine if all IFM revenue with shift factors to those constraints is adequate to payout CRR Notional Value

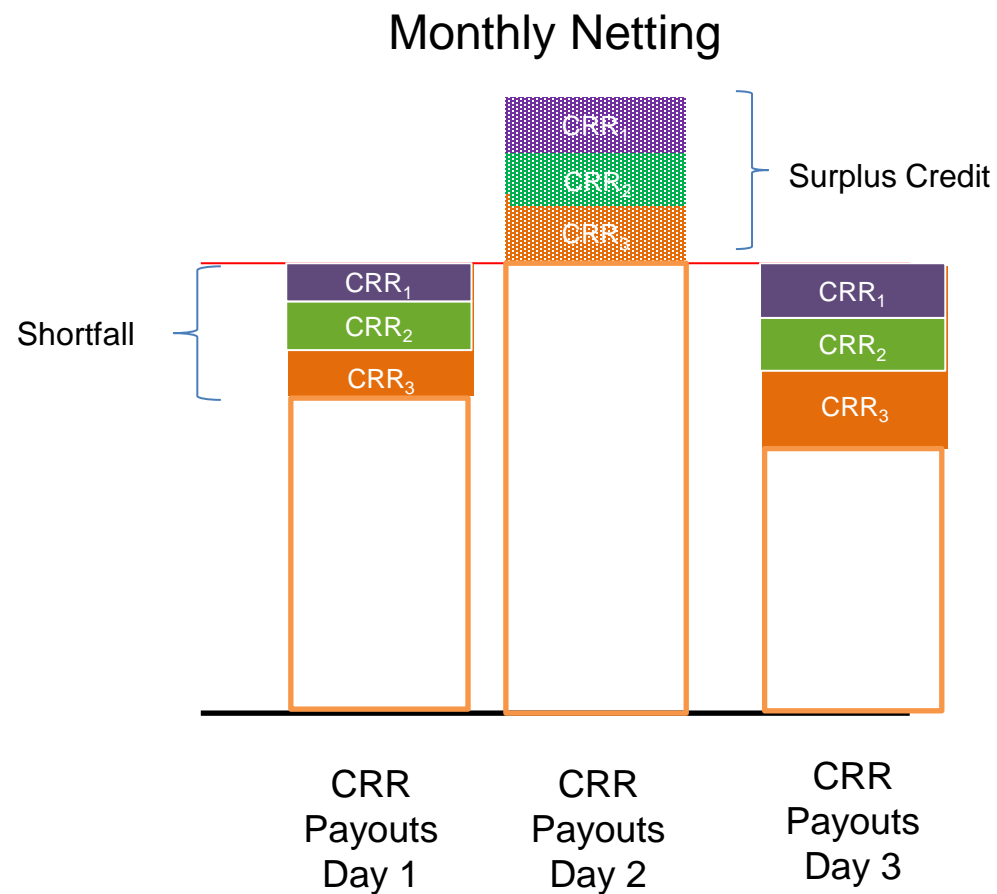
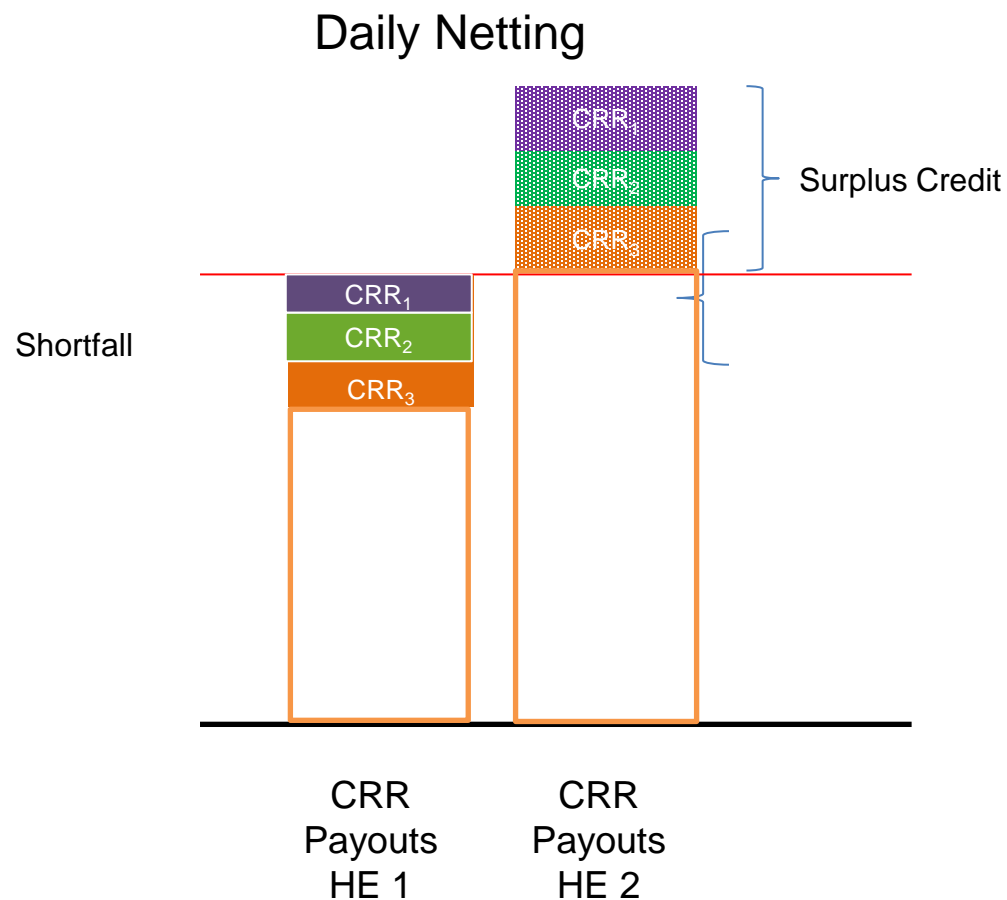


CRR1B evaluation CRR Notional Value on impacted EDAM BAA constraints

CRR1B deems CRR Notional Value payout to be full funded



Daily and Monthly Netting of CRR Surplus and Shortfalls Amount



CRR Balancing Account

- CRR Balancing Account is the net of:
 - IFM Energy Congestion Revenue (CAISO Constraints)
 - IFM Virtual Bid Congestion Revenue (CAISO Constraints)
 - IFM Imbalance Reserve Congestion Revenue (CAISO Constraints)
 - IFM CAISO BAA Ancillary Service Congestion Revenue,
 - CRR1B Settlement Amount,
 - CRR Auction Amount,
 - ETC/TOR Congestion Credit (CAISO Constraints),
 - OATT Congestion Adjustment
- CRR Balancing Account Neutrality Amount is allocated to CAISO Measured Demand



Summary

- CRRs will settle on all relevant constraints in EDAM footprint
 - Constraint has a day ahead market shift factor to CRR source and/or sink
- CRR Notional Values will be calculated on these constraints
- CRR settlement of CAISO BAA impacted constraints shall be funded from congestion collected from CAISOs and EDAM BAAs IFM Scheduled flow with effectiveness on these constraints
- CRR settlement of EDAM BAA impacted constraints shall be full funded
- CRR Settlement is funded from CRR Balancing Account
 - Congestion Revenue collected from IFM energy, virtual bids, and imbalance reserve across EDAM footprint with shift factors on CAISO constraints
 - Includes OATT Financial Hedge adjustment
 - Near Term Enhancement will include CRR parallel flow adjustment

This Week at the ISO – 06/09/25

Stakeholder Meetings

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

- Monday, June 9th – [Interconnection Customer User Group](#)
 - 1:00pm - 2:00pm PT ([Registration is Required](#))
- Wednesday, June 11th – [Resource Adequacy Modeling and Program Design Working Group - Track 1](#)
 - 1:00pm - 4:00pm PT ([link](#))
- Thursday, June 12th – [Market Update](#)
 - 10:15am - 1:00am PT ([link](#))
- Thursday, June 12th – [Congestion Revenue Rights \(CRR\) Modeling and Settlement in the Extended Day-Ahead Market \(EDAM\)](#)
 - 1:00pm - 5:00pm PT ([link](#))

Comment Submission Deadlines

- Wednesday, June 11th - [Storage Design and Modeling](#)
- Thursday, June 12th – [Greenhouse Gas Coordination Working Group](#)

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).

- None scheduled this week

Market Simulations

Refer to our [Release Schedule](#) for updates of initiatives scheduled for MAP- and Production- stage market sims.

- Thursday, June 12th – [DAME, EDAM, and EDAM CAISO Balancing Authority PR Market Simulation Meeting](#)
 - 1:00pm - 2:00pm PT (Email marketsim@caiso.com for registration)

This Week at the ISO continued

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](#).

The PRRs listed below have an open 10-business day comment or appeal period from June 3, through June 17, 2025.

- **New ISO PRR's**
 - [PRR 1630](#) Reliability Requirements BPM, Emergency PRR, Update regarding generating units' deliverability status
 - [PRR 1631](#) Market Operations BPM, Emergency PRR, Automated logic to achieve a market solution
 - ISO PRR on Hold
 - [PRR 1626](#) Market Operations BPM, Activation of contingency-based flowgates in fifteen-minute market.
- **ISO Recommendations**
 - *PRR 1622 and 1623 Not Used*
 - [PRR 1624](#) Scheduling Coordinator Certification and Termination BPM, updating affiliate information and how they are associated
 - [PRR 1625](#) Transmission Planning Process BPM, Emergency PRR, Competitive solicitation timeline for selection of approved project sponsor.
 - [PRR 1627](#) Market Operations BPM, Emergency PRR, Adding state of charge to flexible ramping awards determination.
 - [PRR 1629](#) Energy Imbalance Market BPM, Addition of seasonal opt-in for CAISO balancing authority.
- **ISO Final Decisions**
 - [PRR 1620](#) Reliability Requirements BPM, Clarification regarding eligible generating units as new use import commitments.
 - [PRR 1621](#) Candidate CRR Holder Registration BPM, Emergency PRR, Updating application with new congestion revenue rights customer types.

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