Settlements Continuation Training: DAME, EDAM, and EDAM CAISO Balancing Authority Participation Rules

December 18, 2025

Today's Trainer:
Heidi Carder, Lead Customer Education Trainer

Rev.12/23/25

Housekeeping

REMAIN MUTED

Keep yourself muted to minimize background noise

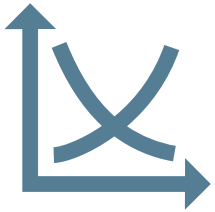
ASKING QUESTIONS

Unmute to ask verbal questions or write in the chat pod

RAISING HAND

Raise your hand using WebEx interactivity tools

How are the **DAME**, **EDAM**, and **EDAM ISO BAA Participation Rules** initiatives related?



Day-Ahead Market Enhancements

Enhances Day-Ahead Market with new market products

- Imbalance Reserves
- Reliability Capacity

Extended Day-Ahead Market

Extends Day-Ahead capabilities to a wider market footprint

EDAM ISO BAA Participation Rules

Addresses unique aspects of how the CAISO BAA will participate in EDAM

Defining Roles & Responsibilities

Role	Definition
EDAM Entity	A Balancing Authority (BA) that participates in the EDAM market (this includes the CAISO BA). EDAM entities provide inputs such as market limits, outages and transmission constraints specifically for their Balancing Authority Area (BAA). EDAM entities can also be an SC representing loads and resources within their BA should they hold such responsibilities.
Market Operator/ Real Time Market Operator	The Market Operator is a separate role within the CAISO that is staffed by personnel dedicated to the equal and independent operation of both regional markets – EDAM and WEIM.
Scheduling Coordinator (SC)	The SC is a certified entity that participates in the market by submitting bids and outages and managing the coordinated operations of its facilities.

The output from the day-ahead timeframe (EDAM) is reviewed and implemented in real-time (WEIM) with any necessary real time adjustments

Who is the primary audience for this training session?

Settlements staff for:

- Scheduling Coordinators within the ISO Balancing Authority Area (BAA)
- Extended Day-Ahead Market (EDAM) Scheduling Coordinators
- Stakeholders engaged in Western energy markets who want to stay informed

What you will learn

By completing this training, you will gain essential knowledge to prepare for participation in market simulation activities for DAME/EDAM/EDAM ISO BAA Participation Rules settlements.

You will be able to explain settlements related to:

- Imbalance Reserve Tier 1 and Tier 2 Settlement and Reliability Capacity
- Imbalance Reserve (IR) Portion of the Flexible Ramp Product (FRP)
- Resource Sufficiency Evaluation (RSE)

IMBALANCE RESERVE AND RELIABILITY CAPACITY TIER 1 AND TIER 2 SETTLEMENT

Purpose and Function of Imbalance Reserves and Reliability Capacity in DAME/EDAM

Introduced in DAME/EDAM to manage uncertainty between Day-Ahead forecasts and Real-Time conditions.

- Imbalance Reserves = Safety net for upward/downward ramping when net load changes.
- Reliability Capacity = Ensures each BAA provides enough physical capability for system reliability.

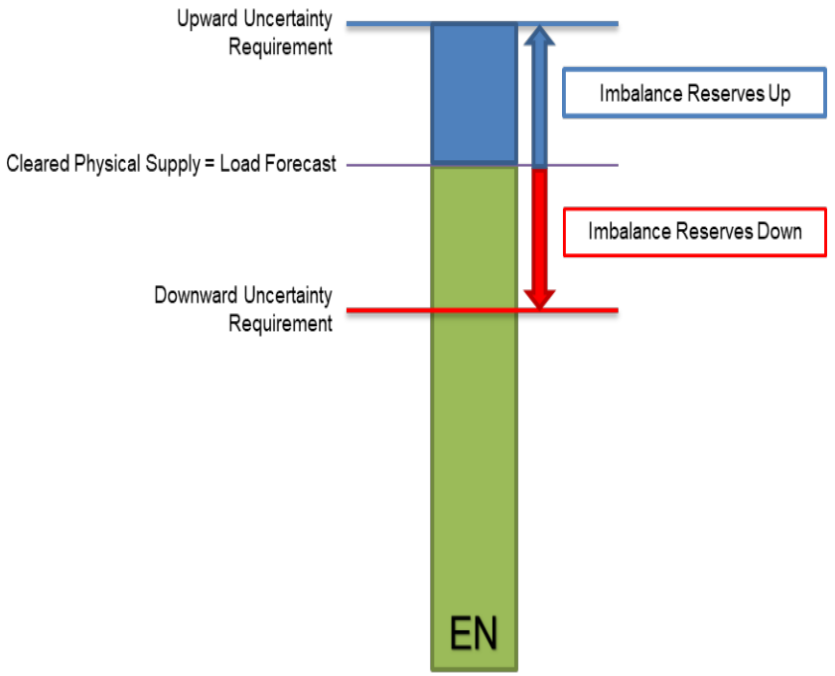
Imbalance Reserves

Imbalance Reserve Up

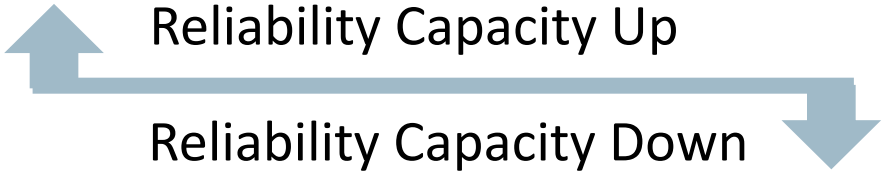
- Hourly evaluation determining that energy is needed in the trade hour.
- Commodities reserve capacity above the Day-Ahead Schedule (DAS) that must be available for dispatch in the Real-Time Market (RTM) to meet the demand forecast plus upward uncertainty.

Imbalance Reserve Down

- Commodities reserve capacity below the Day-Ahead Schedule (DAS) that must be available for dispatch in the Real-Time Market (RTM) to meet the demand forecast plus downward uncertainty.



Residual Unit Commitment (RUC) process procures reliability capacity products to ensure sufficient physical supply scheduled in day-ahead



- Today's RUC process procures additional capacity to meet forecasted demand.
- With EDAM, reliability capacity provides BAs with upward **or** downward dispatch capability, ensuring sufficient physical supply scheduled in day-ahead.
- Procurement of reliability capacity will be done on an hourly basis for each BA from the bids that are submitted by SCs across the EDAM footprint.
- SCs submit bids for **reliability capacity up** and **reliability capacity down** and may receive hourly awards for **only one** of the products.

Key Differences Between **Imbalance Reserves** and **Reliability Capacity**

Element	Imbalance Reserves	Reliability Capacity
Basis	Historical data	Specific to a unique trade date
Purpose	Manage uncertainty in load, wind, and solar forecasts	Ensure sufficient supply is purchased in day-ahead market
Requirement Type (at BAA level)	Up **and** down reserve requirement per hour	Up **or** down capacity requirement per hour
Market Awards to SCs	May receive hourly awards for **one or both** reserve types	May receive hourly award for **only one** capacity type

Similarities and Differences for Imbalance Reserve (IR) and Reliability (RC) Tier 1&2 Allocations

- Two tier allocation for both IR and RC
  - Imbalance Reserve Up/Down (IRU/IRD) and Reliability Capacity Up/Down (RCU/RCD) costs are allocated first to main contributors for the need to procure respective products.
  - Tier 1 is capped by the lower price between average or derived price per Balancing Authority Area (BAA).
    - Divides the total costs to procure the product by the total product award, or total Tier 1 allocation quantities, per BAA.

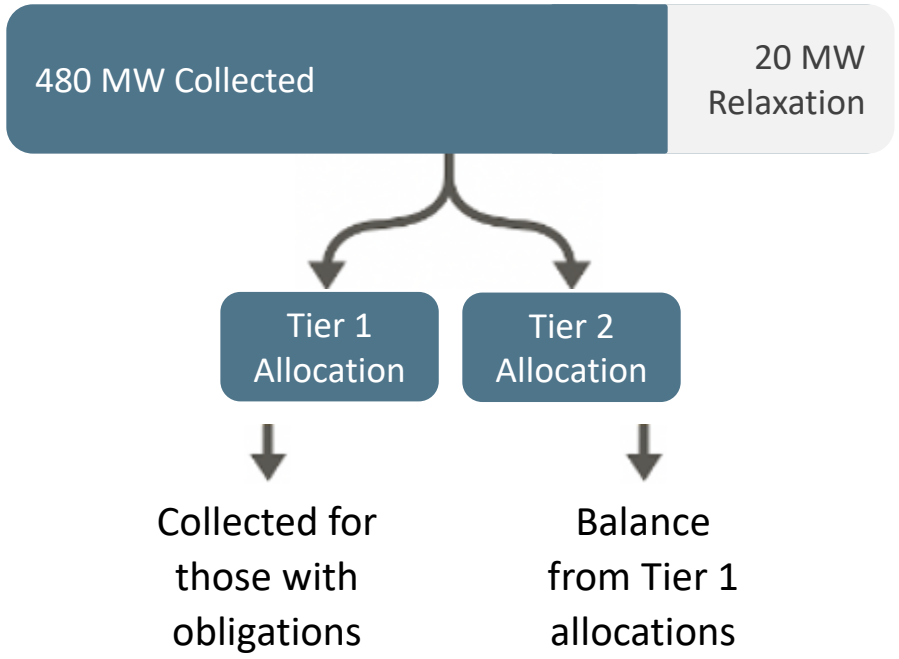
- The main contributors that would receive **Tier 1 allocations** include:
  - **Imbalance Reserve**: Generation, Imports, Exports & Load
  - **Reliability Capacity:** Net Virtual Awards and Uninstructed Imbalance Energy (UIE)

Similarities and Differences for Imbalance Reserve (IR) and Reliability (RC) Tier 1&2 Allocations (continued)

- Both IR and RC costs are reduced by No Pay for awards
  - The latter is the responsibility of resource owners who received the product awards

- Per BAA, after allocating to Tier 1, any remaining costs are allocated in Tier 2 which is spread to metered demand in the corresponding BAA.

Example of Imbalance Reserve Tier 2 and Tier 2 Allocation



System need: 500 MW Imbalance Reserve Up

- 480 MW Procured
- 20 MW Relaxed
- 480 MW Allocated through Tier 1 & Tier 2

Charge Code Overview: Imbalance Reserve Up & Down

- 8071 — Day Ahead Imbalance Reserve Up Settlement
- 8076 — Day Ahead Imbalance Reserve Up Tier 1 Allocation
- 8077 — Day Ahead Imbalance Reserve Up Tier 2 Allocation
- 8081 — Day Ahead Imbalance Reserve Down Settlement
- 8086 — Day Ahead Imbalance Reserve Down Tier 1 Allocation
- 8077 — Day Ahead Imbalance Reserve Down Tier 2 Allocation

Charge Code Overview: Reliabity Capacity Up & Down

8800 RUC Reliability Capacity Up Settlement

8806 RUC Reliability Capacity Up Tier 1 Allocation

8807 RUC Reliability Capacity Up Tier 2 Allocation

8810 RUC Reliability Capacity Down Settlement

8816 RUC Reliability Capacity Down Tier 1 Allocation

8817 RUC Reliability Capacity Down Tier 2 Allocation

Formulas: Imbalance Reserve Up Tier 1 and Tier 2 Allocation

- IRU tier 1 allocation
  - $IRUTier1Allocation_{j,t} = IRUTier1Qty_{j,t} \times \min\left(IRUReqPrice_{j,t}, IRUDerivedPrice_{j,t}\right)$
    - $IRUReqPrice_{j,t} = IRURCost_{j,t} / \left(IRUR_{j,t} - IRUS_{j,t}\right)$
    - $IRUDerivedPrice_{j,t} = IRURCost_{j,t} / IRUTier1Qty_{j,t}$
    - $IRUTier1Qty_{j,t} = \sum_{i \in BAA_j} \left(IRUGTier1Qty_{i,t} + IRUITier1Qty_{i,t} + IRUETier1Qty_{i,t} + IRULTier1Qty_{i,t}\right)$
      - » $IRUGTier1Qty_{i,t} = \max\left(0, DAEN_{i,t} - FMMMaxExCap_{i,t}\right)$
      - » $IRUITier1Qty_{i,t} = \max\left(0, FMMMaxExCap_{i,t} - DAEN_{i,t}\right)$
      - » $IRUETier1Qty_{i,t} = \max\left(0, FMMSS_{i,t} - DAEN_{i,t}\right)$
      - » $IRULTier1Qty_{i,t} = \max\left(0, -UIE_{i,t}\right)$
- IRU tier 2 allocation
  - $IRUTier2Allocation_{j,t} = \max\left(0, IRURCost_{j,t} - IRUTier1Allocation_{j,t}\right) \times \left(ML_{i,t} / ML_{j,t}\right)$
    - Generation-only BAA will be allocated to EDAM Entity

Formulas: Imbalance Reserve Down Tier 1 and Tier 2 Allocation

- IRD tier 1 allocation
  - $IRDTier1Allocation_{j,t} = IRDTier1Qty_{j,t} \times \min\left(IRDReqPrice_{j,t}, IRDDerivedPrice_{j,t}\right)$
    - $IRDReqPrice_{j,t} = IRDRCost_{j,t} / \left(IRDR_{j,t} - IRDS_{j,t}\right)$
    - $IRDDerivedPrice_{j,t} = IRDRCost_{j,t} / IRDTier1Qty_{j,t}$
    - $IRDTier1Qty_{j,t} = \sum_{i \in BAA_j} \left(IRDGTier1Qty_{i,t} + IRDITier1Qty_{i,t} + IRDETier1Qty_{i,t} + IRDLTier1Qty_{i,t}\right)$
      - » $IRDGTier1Qty_{i,t} = \max\left(0, FMMMaxExCap_{i,t} - DAEN_{i,t}\right)$
      - » $IRDITier1Qty_{i,t} = \max\left(0, FMMSS_{i,t} - DAEN_{i,t}\right)$
      - » $IRDETier1Qty_{i,t} = \max\left(0, DAEN_{i,t} - ETag_{i,t}\right)$
      - » $IRDLTier1Qty_{i,t} = \max\left(0, UIE_{i,t}\right)$
- IRD tier 2 allocation
  - $IRDTier2Allocation_{j,t} = \max\left(0, IRDRCost_{j,t} - IRDTier1Allocation_{j,t}\right) \times \left(ML_{i,t} / ML_{j,t}\right)$
    - Generation-only BAA will be allocated to EDAM Entity

Formulas: Reliability Capacity Settlement (Part Two)

- Reliability Capacity Up Allocation
  - RCU tier 1 allocation
    - $RCUTier1Allocation_{j,t} = RCUTier1Qty_{j,t} \times \min\left(RCUAvgPrice_{j,t}, RCUDerivedPrice_{j,t}\right)$
      - $RCURAvgPrice_{j,t} = RCUAwardPayment_{i,t} / \sum_{i \in BAA_j} RCU_{i,t}$
      - $RCUDerivedPrice_{j,t} = RCUAwardPayment_{i,t} / RCUTier1Qty_{j,t}$
      - $RCUTier1Qty_{\text{SC},j,t} = \sum_{i \in SC \cap BAA_j} \left(\max\left(0, VS_{i,t} - VD_{i,t}\right) + \max\left(0, -UIE_{i,t}\right)\right)$
  - RCU tier 2 allocation
    - $RCUTier2Allocation_{j,t} = \max\left(0, RCUAwardPayment_{i,t} - RCUTier1Allocation_{j,t}\right) \times \left(ML_{i,t} / ML_{j,t}\right)$
      - Generation-only BAA will be allocated to EDAM Entity

Formulas: Reliability Capacity Settlement (Part Four)

- Reliability Capacity Down Allocation
  - RCD tier 1 allocation
    - $RCDTier1Allocation_{j,t} = RCDTier1Qty_{j,t} \times \min\left(RCDAvgPrice_{j,t}, RCDDerivedPrice_{j,t}\right)$
      - $RCDAvgPrice_{j,t} = RCDAwardPayment_{i,t} / \sum_{i \in BAA_j} RCD_{i,t}$
      - $RCDDerivedPrice_{j,t} = RCDAwardPayment_{i,t} / RCDTier1Qty_{j,t}$
      - $RCDTier1Qty_{\text{SC},j,t} = \sum_{i \in SC \cap BAA_j} \left(\max\left(0, VD_{i,t} - VS_{i,t}\right) + \max\left(0, UIE_{i,t}\right)\right)$
  - RCD tier 2 allocation
    - $RCDTier2Allocation_{j,t} = \max\left(0, RCDAwardPayment_{i,t} - RCDTier1Allocation_{j,t}\right) \times \left(ML_{i,t} / ML_{j,t}\right)$
      - Generation-only BAA will be allocated to EDAM Entity

Sample Tier 1 and Tier 2 Allocation for IR & RC

Note: the resources with awards are likely different entities to those having Tier 1 or Tier 2 allocation quantity obligations

RCU Costs (C) , in $	1000
Total RCU Award (D), in MW	500
Total Tier 1 allocation quantities (E)	200
Avg Price (A = C/D)	2
Derived Price (B = C/E)	5
Tier 1 Price = Min (A, B) = (F)	2
Tier 1 allocation quantity by SC at each BAA (MWh):	
SC1 alloc qty	100
SC2 alloc qty	75
SC3 alloc qty	25
Total qty for all SC at each BAA	**200**
Tier 1 allocation COSTS by SC at each BAA ($):	
SC1 alloc cost	200
SC2 alloc cost	150
SC3 alloc cost	50
Total Tier 1 costs	400
Tier 2 Costs to be allocated to Metered Load	600
SC costs for Tier 2 is pro-rata of their ML to total ML for the BAA	

Imbalance Reserve & Reliability Capacity Summary

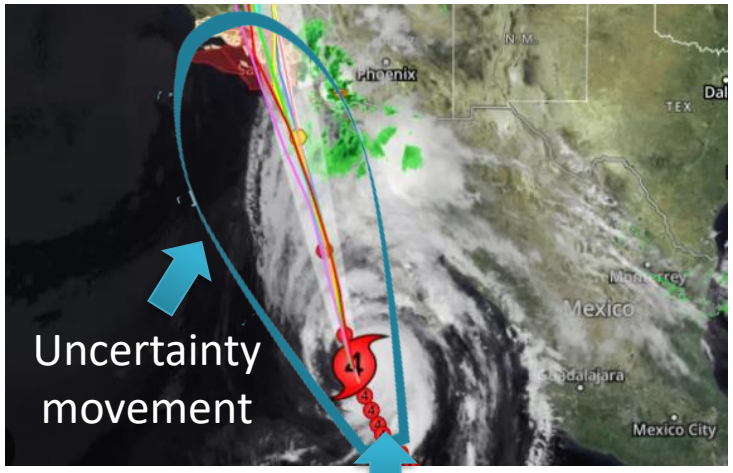
- Imbalance Reserves Up/Down are procured to meet uncertainty needs between the Day-Ahead and Real-Time Markets.
  - Costs are allocated through two-tiered settlements based on what is procured.

- Reliability Capacity Up/Down is procured to ensure there are enough resources committed to meet each BAA's demand forecast.
  - Costs are allocated through two-tiered settlements.

IMBALANCE RESERVE (IR) PORTION OF THE FLEXIBLE RAMP PRODUCT (FRP)

Relationship Between Imbalance Reserves and Flexible Ramping Product

The Flexible Ramping Product in real-time works like a hurricane path projection: there's a forecasted trajectory, but uncertainty remains because the actual path can still change. Imbalance Reserves do the same thing in the day-ahead.



- When we buy Imbalance Reserves (IR), we are procuring uncertainty.
  - Paying to keep extra capacity available in case things change unexpectedly.
- IR initially covers flex ramp uncertainty requirements.
  - In real-time uncertainty requirements are re-procured through the Flexible Ramping Product.

IR and FRP Interaction: Payment Logic and Settlement Rules

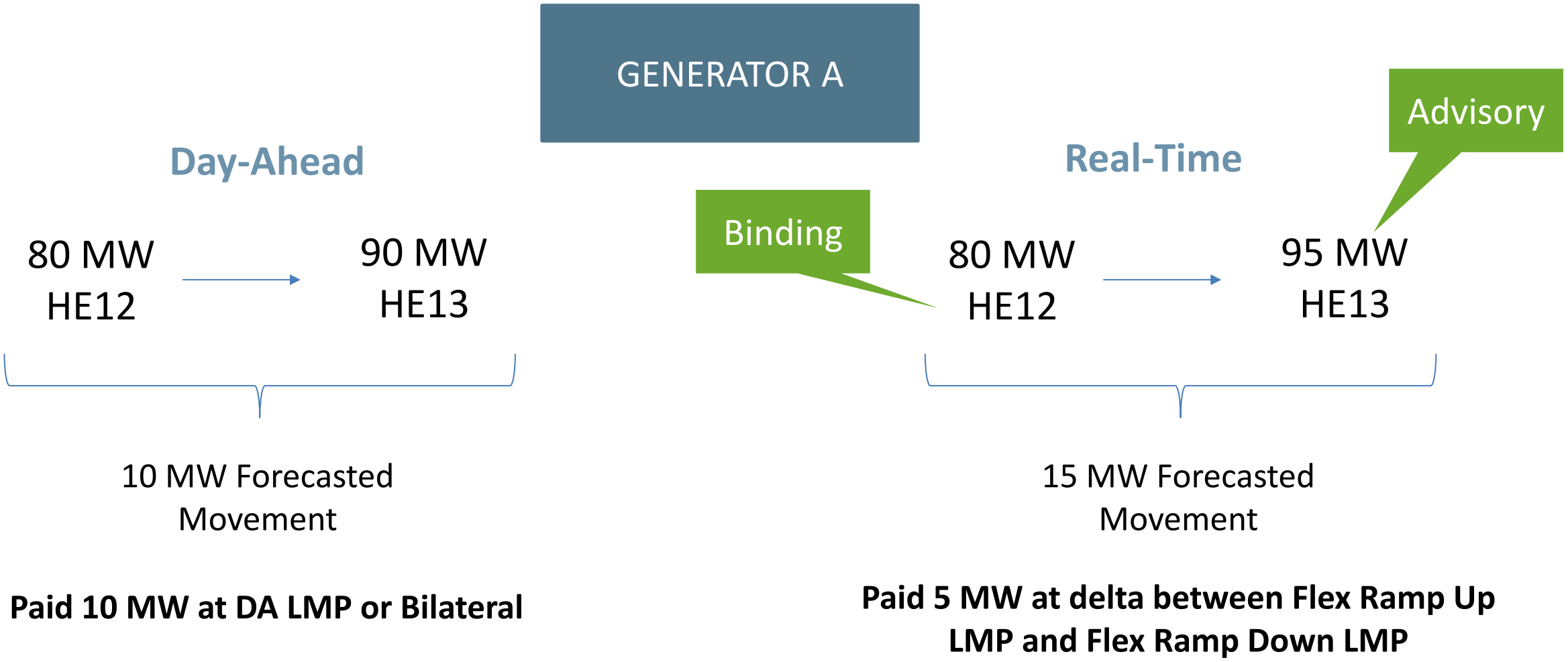
- Capacity procured day-ahead for IR should not be paid again when evaluated for FRP in real-time.
- A resource's 5-minute ramp capability can serve both IR (30-min product) and FRP (5-min product).
- If MWs remain unchanged between DA and RT, no additional payment occurs.
- If reserved MWs are released as energy, the resource is charged at the FRP price for deviation.
- Deviation settlement = MW released × higher of FRP or IR price due to replacement procurement.
- Same capacity used for IR and FRP results in a single payment; extra charges only occur when capacity is released and replaced.

Forecasting and Settlement: What Gets Paid

- Calculations used to determine what portion is due to Day-Ahead (DA) or Base Schedule.
  - Any DA forecasted movement is already incorporated into the DA LMP.
  - Base schedule forecasted movement is incorporated in the bilateral pricing.

- Fifteen-minute forecasting movement in Real-Time is based on total scheduled movement and subtracted off of the DA or Base portion.
  - Provides the FMM incremental forecasting movement which is what gets paid.

Forecasting and Settlement: What Gets Paid Example



Calculations

- FRU and IRU Awards: Flexible Ramp Up (FRU) and Imbalance Reserve Up (IRU) awards are settled below.
  - Flexible Ramp Up (FRU) Uncertainty Settlement to avoid double payment:
    $= (\textit{FRU Uncertainty qty} - \textit{FiveMinRampCapable IRU qty}) \; x \; FRU \; Price$
  - IRU Award Settlement (Imbalance Reserve Up) :
    $= (IRU \; Award \; Qty \times IRU \; Price)$
  - IRU Settlement for Non-compliance qty portion:
    $= IRU \; Noncomp\text{liance} \; Qty \times Max(IRU \; Price, FRUPrice)$

Charge Code Overview: Imbalance Reserve and Flexible Ramping Product

Imbalance Reserves

8071	Day Ahead Imbalance Reserve Up Settlement
8076	Day Ahead Imbalance Reserve Up Tier 1 Allocation
8077	Day Ahead Imbalance Reserve Up Tier 2 Allocation
8081	Day Ahead Imbalance Reserve Down Settlement
8086	Day Ahead Imbalance Reserve Down Tier 1 Allocation
8077	Day Ahead Imbalance Reserve Down Tier 2 Allocation

Flexible Ramp

7071	Flexible Ramp Up Uncertainty Award Settlement
8071	Flexible Ramp Down Uncertainty Award Settlement

DAY-AHEAD RESOURCE SUFFICIENCY EVALUATION

EDAM Day-Ahead Resource Sufficiency Evaluation (DA-RSE)

Purpose

- *Prevent Over-Reliance on Market Transfers*
- *Promote Fairness and Reliability*
- *Support Market Efficiency*

EDAM's DA RSE tests to ensure that each EDAM BAA has sufficient supply to meet its next-day expected obligations, including demand, uncertainty, and ancillary services

The DA-RSE pass/fail sets expectations for WEIM flexible ramp tests in the WEIM Resource Sufficiency Evaluation (WEIM-RSE).

DA-RSE Assesses:

- CAISO Balancing Authority Area (BAA)
- Each Extended Day-Ahead Market (EDAM) BAA

RT-RSE Assesses:

- Each Western Energy Imbalance Market (WEIM) BAA

Resource Sufficiency Evaluation: EDAM

The binding day-ahead RSE test occurs each day at 10:00am, prior to running the Day-Ahead Market. The Day-Ahead Market RSE evaluates three different aspects:

1

Bids: assesses whether there are sufficient energy bids or self-schedules to meet an EDAM entity's forecasted load needs.

2

Ancillary Services: ensures that a BA has sufficient contingency reserve capacity available per AS requirements.

3

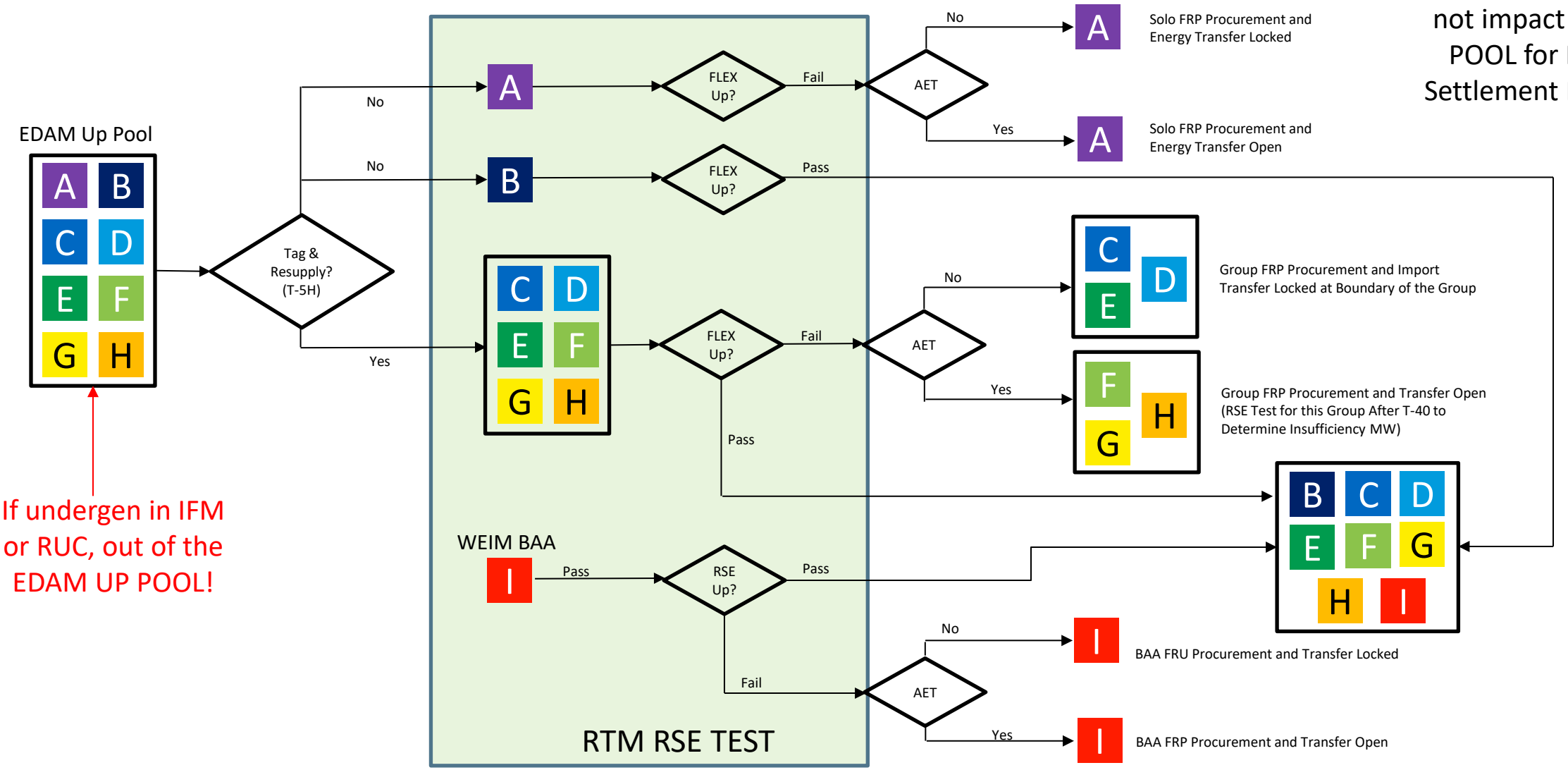
Imbalance Reserves: ensures the EDAM entity has sufficient bid-in capacity to meet uncertainty between day-ahead and real-time. Like real-time Flex Ramp Sufficiency test, with key differences

- **EDAM Entity:** bids in specific values for both Imbalance Reserve Up and Imbalance Reserve Down.
- **WEIM Entity:** value is determined by the market based on energy bids.

Evaluations covering 24-hour period

Tag, Resupply and Real-Time RSE Up Test

DA RSE test does not impact EDAM POOL for RTM! Settlement Penalty



Resource Sufficiency Evaluation Surcharge

What is the RSE Surcharge?

The Resource Sufficiency Evaluation Surcharge applies when a Balancing Authority Area (BAA) fails the Day-Ahead RSE test. This test checks if the BAA has enough resources to meet its obligations before the market runs. If they don't, they pay a surcharge.

Who does it apply to?

It applies to both the ISO BAA and EDAM BAAs. So, if any of these areas fail the sufficiency test, they're subject to penalties.

How Are Penalties Calculated?

- Three tiers of surcharges, based on two things:
  - The size of the failure (how many MW short).
  - The relevant price—either the Locational Marginal Price (LMP) or Trading Hub price.

How does the RSE settlement work?

- RSE Charge based on failed tests
  - Suballocated to metered demand; once you get to the BAA on surcharge and allocation based on ratio
- ISO Suballocation of the revenue
  - The ISO BAA sub-allocates the surcharge to its participants based on metered demand
- EDAM BAAs allocate their share to their entities

How does the RSE settlement work? (continued)

- RSE Revenue Distribution is where the net transfer comes in for BAAs, including ISO
  - For EDAM BAAs the surcharge revenue is distributed to those BAAs that passed the DA-RSE test, based on their Net Transfer System Resource (TSR) Export Ratio.
    - Allocated to those who pass the test, in the correct direction (up vs down failure)
  - The ISO BAA sub-allocates the surcharge revenue to its participants based on Metered Demand minus balanced ETC/TOR (Existing Transmission Contracts / Transmission Ownership Rights).
  - Then, EDAM BAAs allocate their share to their entities.

Charge Code Overview: Day-Ahead Resource Sufficiency Evaluation (DA-RSE)

8080

Resource Sufficiency Evaluation Surcharge Settlement applies to ISO BAA and EDAM BAA(s).

- This is the RSE surcharge, which is the penalty for failing.

8088

Resource Sufficiency Evaluation Surcharge Allocation applies to ISO BAA and EDAM BAA(s).

- This is the RSE surcharge allocation, which is the credit distributed to BAAs that passed the test, based on their export or import ratio depending on the direction.

Example – 3-tiered settlement

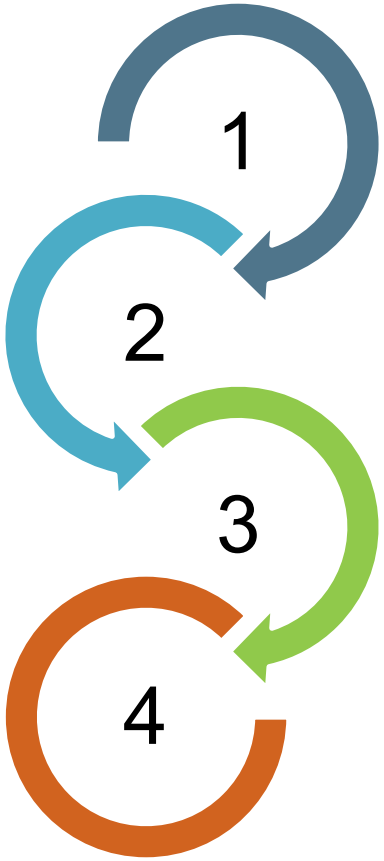
- BAA1 has an IR Requirement of 100 MW but only procures 50 MW in the DA RSE upward test for an hour. We have a deficiency quantity of 50 MW:
  - For a tier 1 failure in which the BAA failure is de minimis, defined as the higher of 10 MW or an amount less than or equal to one percent of the BAA's upward IR Requirement for that hour, the EDAM RSE On-Peak Upward Failure Insufficiency Surcharge will not be calculated.
  - In this example, we apply Tier 2 calculation, since the deficiency quantity is 50 MW and is 50% short. If greater than a de minimis threshold, but less than deficiency quantity Tier 2 applies at (50MW*$50/MW)* 1.25, that's $3,125.
  - If the deficiency quantity is more than 50% of the requirement quantity (e.g. 60 MW instead of 50 MW), Tier 3 applies at (60MW*$50/MW)*2.0, that's $6,000.

- Total collected surcharge revenue from CC 8080 goes into a pool to be allocated in CC 8088
  - EDAM BAAs that passed get a share of that pool through CC 8088 based on their net TSR export ratio for the upward test and net TSR import ratio for the downward test
  - If the CISO BAA passes, ISO suballocates their share of the revenue to participants based on metered demand

objective

EDAM SETTLEMENTS CONNECTIONS

How can you prepare?



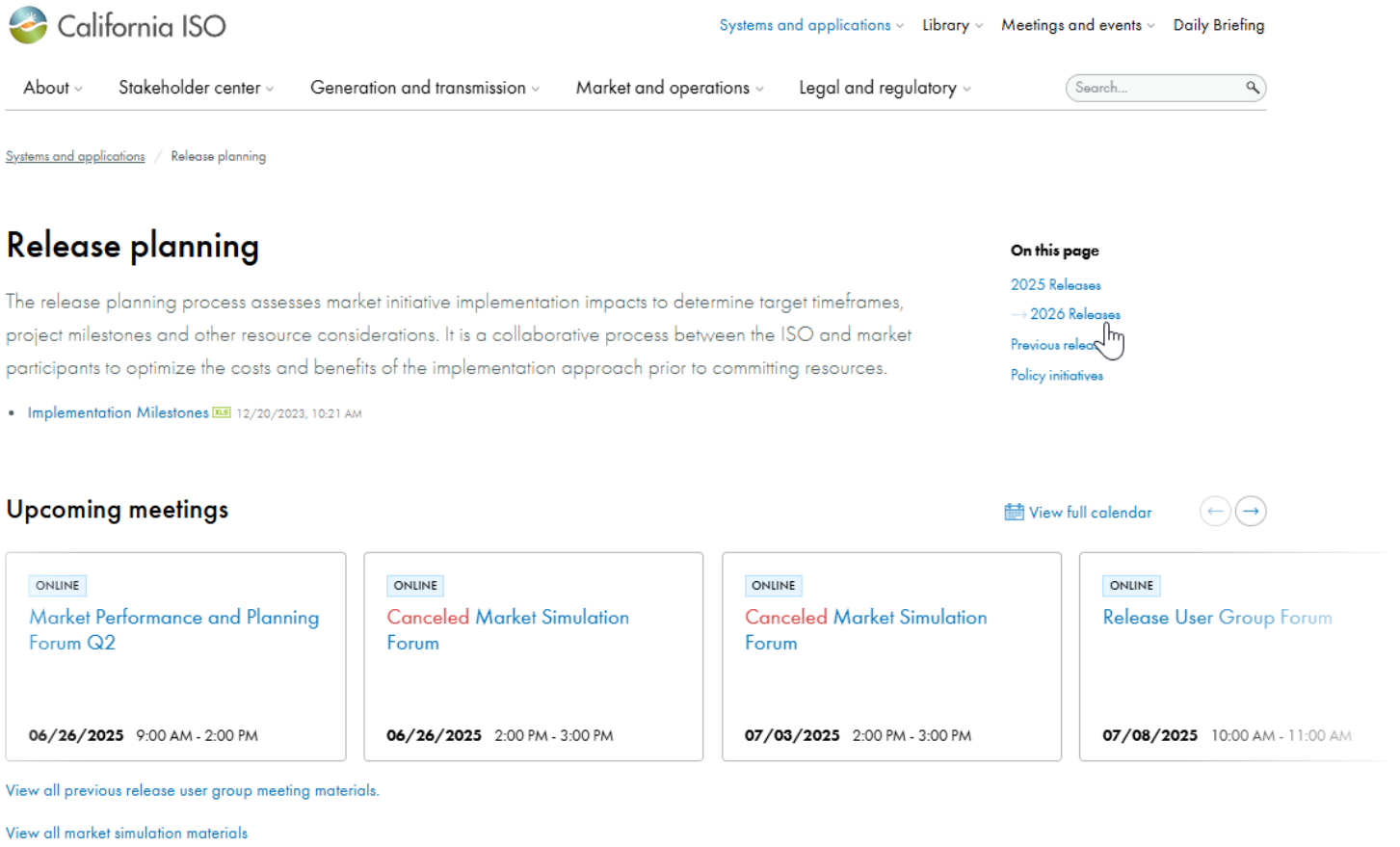
Participate in Settlement User Group and Onboarding Track Meetings.

Get to know the documents.

Participate in Market Simulation.

Participate in future training classes.

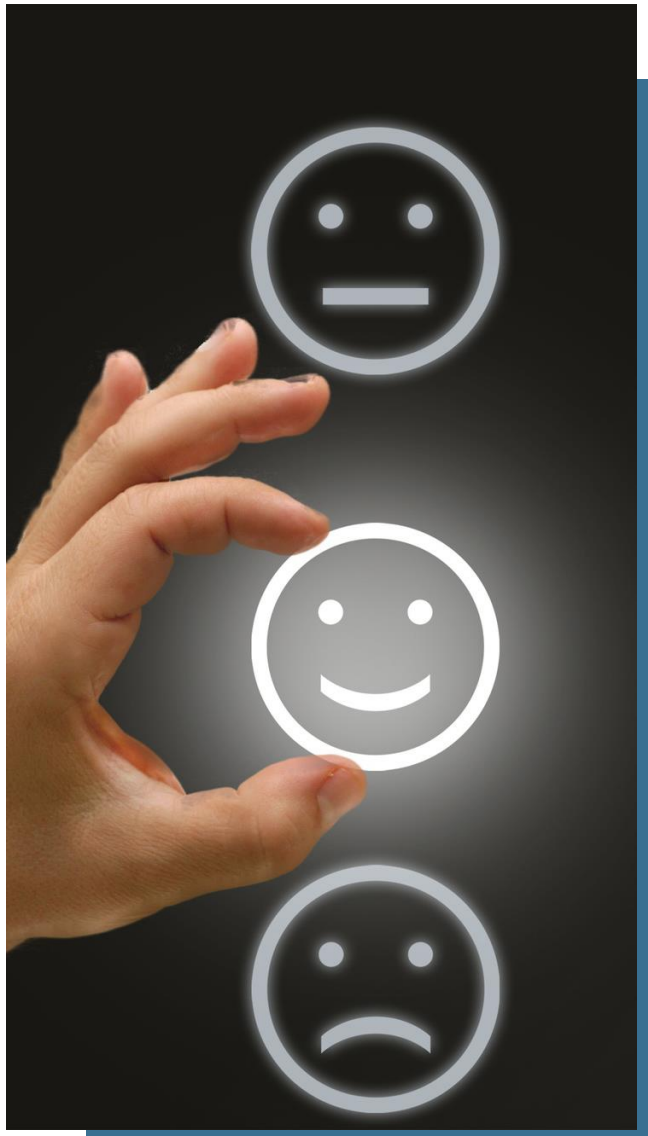
Visit the Release Planning page to view related documents



User group forums provide additional engagement opportunities

Release User Group (RUG)	Technical User Group (TUG)	Settlement User Group (SUG)	Market Simulation	Business Practice Manual (BPM)
Bi-weekly meeting to assesses market initiative implementation impacts to determine target timeframes, project milestones and other resource considerations.	**Bi-weekly** meeting to assesses process and technology design, implementation and evolution, and identifies and evaluates resolutions for technical issues.	**Bi-weekly** discussion forum for Market Participants and RC West customers to obtain information, provide input and ask questions on current ISO initiatives and activities affecting the settlement and invoicing processes.	**Weekly *(as needed)*** discussion forum for Market Participants to review market initiative implementation impacts, timeframes, millstones, and other relevant information.	**Monthly** meeting to discuss proposed revision requests on Business Practice Manuals (BPMs) that are in the initial and recommendation stages of the BPM change management stakeholder process.
Release User Group	ISO Developer Site	Settlement User Group	Release Planning Meetings	Business Practice Manual Meetings

Find recurring meeting dates on the ISO Calendar:
https://www.caiso.com/meetings-events/calendar



Tell us how we did

Takes 3-5 minutes to complete

Helps us improve future training

Link: https://www.surveymonkey.com/r/caisocoursesurvey

Thank you for your participation!

For clarification on anything presented in this training, send an email to: CustomerReadiness@caiso.com

For other questions or stakeholder specific questions or concerns use one of these methods:

- Submit a CIDI ticket
- Contact your Scheduling Coordinator
- Use the "Contact us" page on caiso.com to submit questions

objective

REFERENCE

Resources Tab

The section below provides helpful links during the onboarding process.

Title	Link
Settlements Process Computer Based Training Courses	https://www.caiso.com/stakeholder/training/settlements-and-metering
Draft Design Bill Determinant Standard and Convention Document	https://www.caiso.com/documents/draft-design-bill-determinant-standard-and-convention.docx
Draft of DAME and EDAM Charge Code Change Summary with Tariff Mapping	https://www.caiso.com/documents/dame-and-edam-charge-code-change-summary-with-tariff-mapping.xlsx
Charge Code Matrix - DRAFT	https://www.caiso.com/documents/draft-iso-charge-code-matrix.xlsx
DAME/EDAM/EDAM ISO BAA Settlements Calendar	https://www.caiso.com/documents/dame-edam-edam-caiso-baa-settlements-calendar-2025-2026.xlsx
Draft Market Simulation Plan Spring 2026 Document	https://www.caiso.com/documents/draft-market-simulation-plan-spring-2026-release.pdf
Release Planning Page	https://www.caiso.com/systems-applications/release-planning

Resources Tab

The section below provides helpful links that support topics covered in this course, as well as what will be available post go live.

Title	Link
Settlements Process Computer Based Training Courses	https://www.caiso.com/stakeholder/training/settlements-and-metering
Business Practice Manual for Settlements and Billing	https://bpmcm.caiso.com/Pages/SnBBPMDetails.aspx?BPM=Settlements%20and%20Billing
Draft Design Bill Determinant Standard and Convention Document	https://www.caiso.com/documents/draft-design-bill-determinant-standard-and-convention.docx
Draft of DAME and EDAM Charge Code Change Summary with Tariff Mapping	https://www.caiso.com/documents/dame-and-edam-charge-code-change-summary-with-tariff-mapping.xlsx
Settlements Webpage	https://www.caiso.com/market-operations/settlements
Charge Code Matrix - CURRENT	https://www.caiso.com/documents/iso-charge-code-matrix.xlsx
Payment Calendar	https://www.caiso.com/documents/california-iso-payments-calendar-2025.xlsx

Formulas: IRU Settlement

- Imbalance Reserve Up Settlement
  - Imbalance reserve up award settlement
    - $IRUAwardPayment_{i,t} = IRU_{i,t} \times IRUMP_{i,t} - IRUNoPayAmt_{i,t}$
    - $IRUNoPayAmt_{i,t} = IRUNoPayQuantity_{i,t} \times \max(IRUMP_{i,t}, FMMFRUMP_{i,t})$
    - $IRUNoPayQuantity_{i,t} = \min(IRU_{i,t} - IRU5_{i,t}, \max(DAEN_{i,t} + RU_{i,t} + SR_{i,t} + NR_{i,t} + IRU_{i,t} - FMMUEL_{i,t}))$
    - *LSE-RA true-up settlement (described in later slide)*
  - Imbalance reserve up requirement cost
    - $IRURCost_{j,t} = (IRUR_{j,t} - IRUS_{j,t}) \times IRURMP_{j,t} - IRUNoPayAmt_{j,t}$

Formulas: IRD Settlement

- Imbalance Reserve Down Settlement
  - Imbalance reserve down award settlement
    - $IRDAwardPayment_{i,t} = IRD_{i,t} \times IRDMP_{i,t} - IRDNoPayAmt_{i,t}$
    - $IRDNoPayAmt_{i,t} = IRDNoPayQuantity_{i,t} \times \max(IRDMP_{i,t}, FMMFRDMP_{i,t})$
    - $IRDNoPayQuantity_{i,t} = \min(IRD_{i,t} - IRD5_{i,t}, \max(0, FMMLEL_{i,t} + RD_{i,t} + IRD_{i,t} - DAEN_{i,t}))$
    - *LSE-RA true-up settlement (described in later slide)*
  - Imbalance reserve down requirement cost
    - $IRDRCost_{j,t} = (IRDR_{j,t} - IRDS_{j,t}) \times IRDRMP_{j,t} - IRDNoPayAmt_{j,t}$

Reliability Capacity Settlement (Part One)

- Reliability Capacity Up Settlement
  - Reliability capacity up award settlement
    - $RCUAwardPayment_{i,t} = \max(0, RCU_{i,t} \times RCUMP_{i,t} - RCUNoPayAmt_{i,t})$
    - $RCUNoPayAmt_{i,t} = RCUNoPayQuantity_{i,t} \times RCUMP_{i,t}$
    - $RCUNoPayQuantity_{i,t} = \min(RCU_{i,t}, \max(DAEN_{i,t} + RU_{i,t} + SR_{i,t} + NR_{i,t} + IRU_{i,t} + RCU_{i,t} - FMMUEL_{i,t}))$
      - excluding resources with proxy RCU awards

Reliability Capacity Settlement (Part Three)

- Reliability Capacity Down Settlement
  - Reliability capacity down award settlement
    - $RCDAwardPayment_{i,t} = \max\left(0, RCD_{i,t} \times RCDMP_{i,t} - RCDNoPayAmt_{i,t}\right)$
    - $RCDNoPayAmt_{i,t} = RCDNoPayQuantity_{i,t} \times RCDMP_{i,t}$
    - $RCDNoPayQuantity_{i,t} = \min\left(RCD_{i,t}, \max\left(FMMLEL_{i,t} + RD_{i,t} + IRD_{i,t} + RCD_{i,t} - DAEN_{i,t}\right)\right)$
      - excluding resources with proxy RCD awards

Tariff reference

Tariff section references, Section:

- 11.2.1.1, 11.2.3.1.3 – IR Payment
- 11.2.1.8 – IR No Pay
- 11.2.1.9 – IR Cost Allocation
- 11.2.6 – DAME Transition Period, LSE-RA True-Up Settlement
- 11.2.4.1 – IR Congestion charges
- 11.8.2.1, 11.8.2.1.8, 11.8.2.2.1 – BCR

Tariff section references, Section:

- 11.2.2.1 – RC Payment including No Pay
- 11.2.2.2.1 – RC No Pay Quantity
- 11.2.2.2.3, 11.8.6.5.3 – RC Cost Allocation
- 11.2.6 – DAME Transition Period, LSE-RA True-Up Settlement
- 11.8.3, 11.8.3.1.3, 11.8.3.2, 11.8.6.5 – BCR