



California ISO Release User Group

October 01, 2024

10:00 a.m.–11:00 a.m. (Pacific Time)

Web Conference Information	Conference Call Information
<p>Web Address: https://caiso.webex.com/caiso/j.php?MTID=m8f4dee2c7059898b3609c46be3cd2c20</p> <p>Audio connection instructions will be available after connecting to the web conference. When prompted, select "Call me" and enter the phone number you will use during the call. You will be called by the conference shortly.</p>	<p><i>1-844-621-3956 United States Toll Free</i> <i>+1-650-479-3208 United States Toll</i> <i>Meeting number (access code): 2491 042 7352</i></p>
<p>Calls and webinars are recorded for stakeholder convenience, allowing those who are unable to attend to listen to the recordings after the meetings. The recordings will be publicly available on the ISO web page for a limited time following the meetings. The recordings, and any related transcriptions, should not be reprinted without the ISO's permission.</p>	
<p>https://www.caiso.com/meetings-events/topics/release-users-group-rug</p>	
<p>http://www.caiso.com/informed/Pages/ReleasePlanning/Default.aspx</p>	

Release Plan Summary

Fall 2024 Settlements Release (No Projects)

Independent 2024 Releases

- FERC 2222 – Distributed Curtailment Resources
- Transmission Service & Market Scheduling Priorities Phase 2 – Resale Scope*
- FERC 2023 – Generator Interconnection Life Cycle
- Congestion Revenue Rights System Upgrade
- Highest Emergency Rating
- WEIM FAB Enhancements
- FERC 881 – Managing Transmission Line Ratings Track 2 – Operational/EMS Model Data & Applications*
- Enable Non-Generating Resources to Participate in Inter-SC Trade
- Modification of Maximum Import Bid Price Hourly Energy Shaping Factor

Independent 2025 Releases

- Hybrid Resources Phase 2C – RIMS*
- Transmission Exchange Agreement

Spring 2026 Release

- Day-Ahead Market Enhancements Activation*
- Extended Day-Ahead Market Activation*
- EDAM ISO BAA Participation Rules Track A*
- EDAM Onboarding PacifiCorp, BANC, PGE
- WEIM BHE Montana*

Future Release

- Subscriber Participating Transmission Owner Model*
- Settlement Upgrade Project – Next RUG/SUG quarterly update October 2024

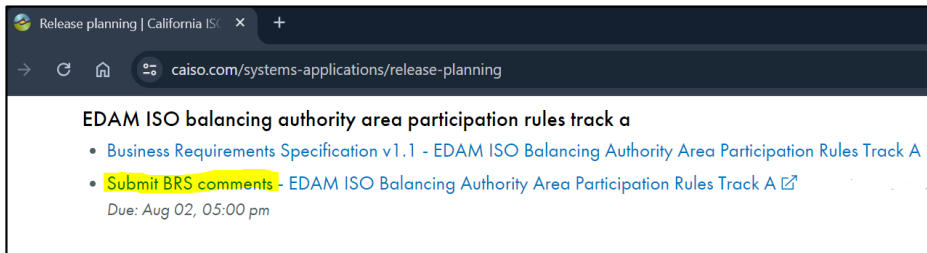
**Policy*

New: BRS Stakeholder Comments & Review Sessions

- **Stakeholders can now submit comments on Business Requirements Specifications**
 - BRS Comments open for:

Closed	Open	Upcoming
<ul style="list-style-type: none">• DAME v1.3 thru 9/30/24 5PM PT• EDAM v1.3 thru 9/30/24 5PM PT• Subscriber PTO thru 8/15/24 5PM PT• FERC Order 2222 thru 8/9/24 5PM PT<ul style="list-style-type: none">• Responses published• EDAM ISO BAA Participation Rules v1.0-1.1 thru 8/2/24 5PM PT	<ul style="list-style-type: none">• EDAM ISO BAA PR v1.2 – thru 10/9/24 5PM PT	<ul style="list-style-type: none">• EDAM ISO BAA PR v1.3

- Access from Release Planning at <http://www.caiso.com/informed/Pages/ReleasePlanning/Default.aspx> or access from [Policy](#) page
- **ISO will schedule BRS reviews as appropriate**
- **Learn how to use the commenting tool:**
 - [View presentation](#)
 - [View video](#)



Fall 2024 Settlements Release

– No Projects

Fall 2024 Settlements Release

- Scope as of 9/4/24 Communication:

Fall 2024 Settlements Release Component Summary

CHANGE SUMMARY	IMPACTS
FERC 2222 <ul style="list-style-type: none"> • <i>FERC Order 2222 seeks to remove barriers for DCR (Distributed Curtailment Resources) participation in RTO/ISO markets. The CAISO will amend its existing DER (Distributed Energy Resource) policy to accommodate FERC 2222, which will include reducing the maximum capacity requirement and introducing a new DERA resource type with underlying DCR.</i> 	No PRR required <ul style="list-style-type: none"> • There are no configuration/formulation changes, hence no tech doc or PRR/BPM posting. For information only. • Effective Start Date: 11/01/2024
COTP Loss <ul style="list-style-type: none"> • <i>Defect: Apply losses for the California Oregon Transmission Project (COTP) scheduled into the California Independent System Operator Corporation (CAISO) Balancing Authority Area using COTP capacity made available by Pacific Gas and Electric Company (PG&E) and the Transmission Agency of Northern California (TANC) consistent with the CAISO Tariff. This is an enhancement to implement an amended LOA among TANC, PG&E, WAPA. Instead of using average Day-Ahead Nodal prices for all nodes that includes the intertie (TRCYPOTPIISO), a five-year rolling average cost will be used as an alternative for comparison with an hourly MEAA – another agreement - price. The MEAA price is at the intertie TRCYPGAE and Apnode WAPAMEEA3_ON_ASR-APND.</i> 	PRR 1583 <ul style="list-style-type: none"> • For those with schedules tagged at the intertie TRCYPOTPIISO, the CAISO shall accumulate daily each scheduling coordinator's portion of COTP losses on an hourly basis and invoice each scheduling coordinator per payment calendar. • Effective Start Date: 11/01/2024
RC Config Change <ul style="list-style-type: none"> • <i>Defect: Issue with multiple BAA for Minimum RC Charge Flag. BA_RC_SVCS_NLOAD_TOP_MTH_EXMPT_FLAG has reference date "S" and needs to be updated to "T" to correctly be included in RC Settlement runs.</i> 	No PRR required <ul style="list-style-type: none"> • There are no configuration/formulation changes, hence no PRR/BPM posting. Updates is to reflect CAISO internal processing to ensure data is captured correctly. • Effective Start Date: 11/01/2024
RAAIM LESR change <ul style="list-style-type: none"> • <i>Defect: Revise the Generic Availability and Flexible Obligation calculations for Limited Energy Storage Resources (LESR) RA resources. Consistent with how generic obligation award is computed only for positive capacity, the generic availability will recognize only bids/availability for the capacity above zero. Conversely, since flexible obligation award allows for the full range – from negative Pmin to positive Pmax – the flexible obligation assessment shall recognize the negative capacity values, particularly for NGRs which can operate in the negative range.</i> 	PRR 1584 <ul style="list-style-type: none"> • This will directly impact non-generating resources (NGR) and LESR generic availability calculation and flexible obligation assessment. More likely, as a result of these resettlement, the other resources (non-NGRs, traditional generators and supply resources) may have more or less adjustments in the incentives they settled previously. The generic issue only occurs when the NGR resources has outage on its positive capacity. The flexible issue more likely will be a charge to NGRs for those with penalties, a slight uptick in incentives if they were previously getting incentives, and a likely net effect to non-NGRs to be an increase incentives. • Effective Start Date: 3/1/2023. This is retrospective going as far back at T+21M.

Fall 2024 Settlements Release (continued)

- Scope as of 9/4/24 Communication:

Fall 2024 Settlements Release Component Summary

CHANGE SUMMARY	IMPACTS
RMR <ul style="list-style-type: none"> • Defect: Fix a typo in BD with impact to CC 6470 design template. Typo correction will allow an RMR specific daily amount to be consumed by 7020 correctly. 	No PRR required <ul style="list-style-type: none"> • There are no configuration/formulation changes, hence no PRR/BPM posting. Update is for typo error clean-up only. • Effective Start Date: 11/1/2024.
BD Name Alias Change <ul style="list-style-type: none"> • Defect: Hierarchy Charge Names with Discrepant BILL_DETERMINANT_NAME & BILL_DETERMINANT_ALIAS Values. The BILL_DETERMINANT and ALIAS columns should be exact matches except that the enumeration in the BILL_DETERMINANT column should have an '@' sign in the name. The ALIAS enumeration will have an '_' (underscore) in the same position. As long as we do not plan to recalc the BD for any trade dates in the past that have calculated using the previous spelling in the enumeration column we can make the change prospective without causing calculation errors going forward. 	No PRR required <ul style="list-style-type: none"> • There are no configuration/formulation changes, hence no PRR/BPM posting. No financial impact because the impacted BDs (some PTB BDs) were never used. • Effective Start Date: 11/1/2024.
T vs. S: <ul style="list-style-type: none"> • Defect: Some Bill Determinants need to be updated from reference date "S" to "T" to align with best business practices. During review there were three bill determinants that had a different reference date than expected. While no settlements issues have been reported, to align the bill determinants with best practices, they will be updated prospectively. The following are the bill determinants impacted. RSRC_DAILY_APPLY_WHSL_CHG_FLAG, RSRC_DAILY_NGR_VER_FLAG, BA_5M_RSRC_TIE_DEV_EXEMPT_FLAG. 	No PRR required <ul style="list-style-type: none"> • There are no configuration/formulation changes, hence no PRR/BPM posting. Updates is to reflect CAISO internal processing to ensure data is captured correctly. • Effective Start Date: 11/1/2024.
TSMSP2: <ul style="list-style-type: none"> • When updates (with a 6/1/2024 Effective Date) associated with the TSMSP2 project were released to Production with the Summer 2024 Release a defect discovered that entities with ATC Reservations are seeing a doubling of the export quantities associated with that intertie. This occurred because the PriorityWheelThruPosition payload (which provides the ATC PWT Reservation Quantity derived in WebWheel) provides the CONTRACTRIGHT_MRID attribute and the DReAMS and MSDC team had believed this to be a renaming of the CONTRACT_REF_ID which we were expecting in existing configurations. This is causing conflicts with existing business drivers and leads to inaccurate calculations. 	PRR 1585 <ul style="list-style-type: none"> • A change is required to sum over this conflicting attribute in the configuration so that it not cause conflicts. Its purpose is informational and summing over it will not impact calculations. • Effective Start Date: 6/1/2024.

Draft of 2024 Fall Settlements Release Milestones

Release Milestones:

- ✓ **1st draft config output file + release component summary posted: 8/13/24**
- ✓ **PRR/BPM posting: 8/27/24**
- ✓ **2nd draft config output file + revised release component summary posted: 9/4/24**
- Market sim/sample statement window: **9/16 – 10/14**
 - Active in MAPSTAGE as of TD 8/1/24
 - Unstructured – Sample Settlements Statements for Tuesday & Thursday TDs 9/17/24 thru 10/10/24
 - First Sample Settlement TD is 9/17/24, to publish 9/24 for Daily Initial
- Pre-prod configuration output file + release artifact revisions targeting: **10/23**
- Anticipated prod activation effective trade date: **11/1**

Independent 2024 Releases

2024 – FERC 2222 – Distributed Curtailment Resources

Project Information

FERC Order 2222 seeks to remove barriers for DCR (Distributed Curtailment Resources) participation in RTO/ISO markets. Through its prior initiatives, CAISO already supports DER (Distributed Energy Resource) market participation. In this implementation, the CAISO will amend its existing DER policy to accommodate FERC Order 2222, which will include reducing the maximum capacity requirement and introducing a new DERA resource type with underlying DCR. In total, FERC Order 2222 requires RTOs/ISOs to revise the Tariff to establish a DERA participation model, which will:

- 1) Allow DERAs to participate in markets and establish DERAs as a type of market participant,
- 2) allow aggregators to register operational characteristics of a DERA,
- 3) establish maximum capacity requirements for DERAs,
- 4) address locational requirements,
- 5) address distribution and bidding,
- 6) address data and information,
- 7) allow for coordination between necessary entities,
- 8) address metering and telemetry,
- 9) address modifications to the list of resources in DERA, and
- 10) address market participation agreements.

The CAISO and its participating transmission owners have already gone to great lengths to ensure that DERs can easily access the wholesale markets for energy and ancillary services. These include ensuring that the CAISO does not prohibit any particular DER from participating in DERAs. This implementation now builds on this work by adding the DCR as an underlying resource type for the Distributed Energy Resource Aggregate (DERA). DERAs with any underlying DCR will be considered HDERA (given its capability to support both DER and DCR types) as opposed to the existing DERA (which only allows underlying DER). Demand response is considered a type of DCR in this context. Similarly, as with demand response, the metering performance of DCRs will be reflected as supply (or metering channel 4).

The existing CAISO Tariff already complies with most of FERC Order 2222; however, a few changes will be needed to align the tariff with the order by including a new resource classification, reducing the minimum allowable DER energy nameplate capacity limit (i.e. Pmax), and the creation of DCRs. Some of these changes will include:

- 1) Adapt small utility opt-in provision in its pro forma Demand Response Provider agreement for the CAISO's pro forma DERP Agreement, replacing Demand Response references with DER references.
- 2) Change definition of DER to align with the Commission's definition as found in section III B of the Order No. 2222 DERAs Compliance Filing.
- 3) CAISO proposes to implement a heterogeneous DERA model such that:
 - "Heterogeneous" DERAs must consist of at least one curtailment resource, and may comprise of the aggregate's underlying capacity in part or total.
 - Heterogeneous DERAs will provide a net response of energy, demand curtailment or both at its PNode(s). Settlements for heterogeneous DERAs will be based on the net service provided to the CAISO. This will be a sum of the net energy and the demand curtailment provided by the aggregate.
- 4) Define "Distributed Curtailment Resource" as a DER providing demand curtailment in a heterogeneous DERA.
- 5) Settle heterogeneous DERAs as a single supply resource, as a sum of net energy provided by DERs and the demand curtailed from DCRs.
- 6) The CAISO will apply a net benefits test to determine a threshold Market Clearing Price for Demand Response Providers and the new HDERA resource type.
- 7) Provision against double counting for any possible future scenarios, prevents a DER from participating in a DERA where the DER already participates in a retail net energy metering program that does not expressly permit wholesale market participation, requiring the distribution company to confer regarding any double-counting concerns.
- 8) Reduce the minimum aggregate capacity limit of DERs from 500kW to 100kW for a DERA.
- 9) Revise Tariff to require DERP to notify the CAISO whenever DERA information changes due to the removal, addition or modification of a DER within a DERA.

2024 – FERC 2222 – Distributed Curtailment Resources

Project Information	Details/Date
Description	<p>The proposed changes amend the CAISO's Tariff to comply with FERC Order 2222. FERC Order 2222 requires that all RTOs/ISOs allow for Distributed Curtailment Resources (DCRs) that can provide a minimum qualified aggregate Pmax value of at least 100kW to participate in all markets. The CAISO already allows for DER participation but will have to make some adjustments to ensure compliance with FERC 2222.</p> <p>Key Notes:</p> <ul style="list-style-type: none"> • Reduces DERA and HDERA minimum participation capacity to 100kW • Introduction of HDERA Resource, aggregate with underlying DCR • Settlements for HDERAs • Same Net Benefit testing as PDR for HDERAs
Scope	<ul style="list-style-type: none"> ➢ RIMS add new Interconnection Customer display to process HDERA/DERA resource project details during NRI; change Pmax limit from 500 kW to 100 kW ➢ Master File GRDT, API Web Service update to accommodate HDERA_YN flag, + HDERA/DERA attributes receive (read-only, may only submit HDERA MF data through Concurrence Letter Attachment A submission and successful NRI process) ➢ SIBR enhancements to recognize HDERA resources, apply them to NBT with PDR prices, update rules to allow hourly GDF submission with bids ➢ IFM/RTM markets will model HDERA as generic NGR with NREM ➢ MRI-S extension of meter submission support for HDERA resources ➢ Settlements will configure HDERA charges and payments to settle as generic NGR with NREM (no new charge codes) ➢ Process Only (no system impact): Internal ISO process will track HDERA SQMD and monitoring data submission to ensure compliance; ISO will contact SCs with delinquent submissions
BPM	<ul style="list-style-type: none"> ➢ Definitions and Acronyms: Include HDERA, DCR terms ➢ Demand Response: Elaboration of net benefit testing ➢ Distributed Generation for Deliverability: Addition of the HDERA resource type. ➢ Generator Management: Inclusion of DCR in DERPAs, Schedule 1, and Concurrence Letter A template (add HDERA language) ➢ Market Instruments: Revision to minimum allowed Pmax limit; and HDERA (aggregate includes both DER and DCR child units, models as an aggregate generic NGR, bidshave NBT applied, may submit GDFs with bids else default used) ➢ Market Operations: Revision to minimum allowed Pmax limit; and HDERA (aggregate includes both DER and DCR child units, models as an aggregate generic NGR, bidshave NBT applied, may submit GDFs with bids else default used) ➢ Metering: New HDERA resource type includes net energy meter submission for DERA, as well as monitoring requirement data from DCR and underlying consumption/energy data used with metering basis for baseline determination); HDERA monitoring ➢ Settlements and Billing: Impacts on settlements for HDERAs
Tariff Changes	<p>§ 4.17.7 § 11.6.5.1 § 30.5.2.6 § 4.6.3.2 (existing)</p> <p>Appdx K: A 1.1 B 1.1 C 1.1 (existing)</p>
Impacted Systems	RIMS, Master File, SIBR, MRI-S, Settlements

2024 – FERC 2222 – Distributed Curtailment Resources

Milestone Type	Milestone Name	Dates	Status
Tariff	FERC Filing ER21-2455	Jul 19, 2021	✓
	FERC Filing ER21-2455 Amend Effective Date NLT Nov 01, 2024	Aug 15, 2022	✓
	FERC Order Accepting ER 21-2455	May 18, 2023	✓
BRS	Publish BRS 1.2	Jul 01, 2024	✓
	BRS comment period open thru Aug 09, 2024 05:00 pm (PT)	Closed	✓
	Responses to BRS Comments published	Sep 09, 2024	✓
Tech Spec	MF Generator RDT v6: Add HDERA flag and baseline methodology attributes (read-only): Validation: values must be read-only; cannot be submitted via: Generator RDT excel template or SubmitGeneratorRDT_MFRD SubmitGeneratorRDT_MFRD_DocAttach	Aug 08, 2024	✓
	RDT Definitions Draft	Aug 16, 2024	✓
	Definitions and Acronyms	Yes	
BPM	Demand Response PRR 1588	Aug 23, 2024	✓
	<i>Distributed Generation for Deliverability– Not applicable</i>	NA	NA
	Generator Management	Yes	
	Market Instruments PRR 1586	Aug 21, 2024	✓
	Market Operations PRR 1590	Sep 03, 2024	✓
	<i>Metering– Not applicable</i>	NA	NA
	<i>Settlements and Billing– Not applicable</i>	NA	NA
Operating Procedures	5330 – Resource Testing Guidelines	Yes	
Training	Training	Sep 12, 2024 9-10 AM PT	✓
Market Simulation	Market Simulation Scenarios	Jul 22, 2024	✓
	Market Simulation – Unstructured	Sep 16 – Oct 11, 2024	
Production	FERC 2222 – Distributed Curtailment Resources	Nov 01, 2024	

2024 – Transmission Service & Market Scheduling Priorities Phase 2

Project Information	Details
High Level Business Need	<p>Presents a long-term, durable framework to establish wheeling through scheduling priorities in the ISO markets that can further evolve with operational experience. It does not focus on, nor does it change, the processes for wheeling out or exporting from the ISO BAA.</p> <p>This project introduces a design to identify Available Transfer Capability (ATC) that can be allocated to Priority-Wheeling-Through (PWT) across the ISO system. This project also provides opportunity for external entities to drive transmission upgrades across the ISO system to support a wheeling-through. Will result in updates to the Wheel Export Quantity PC. The Original Wheeling Priority SC should be charged WAC for the Maximum of Wheeling Priority Quantity and scheduled export. If a resale should occur the purchaser of the resale Wheeling Priority Quantity should be assessed WAC on the maximum of schedule export less purchased Wheeling priority MW and zero.</p>
High Level Project Scope	<p>The following are the key design elements for Priority-Wheeling-Through (PWT) :</p> <ul style="list-style-type: none"> • Calculating PWT Available Transfer Capability (ATC) • Awarding PWT ATC to PWT Requests • Using PWT Awards in Market Operations • Settling PWT Awards and Schedules • Transmission Planning for PWT Capacity
BPM Changes	<ul style="list-style-type: none"> • Market Instruments – MF & SIBR Changes • Market Operations – ITS, DAM, RTM Changes • Reliability Requirements – Internal System Changes • Settlements and Billing – Settlements Changes • Transmission Planning Process – Impact for long term ATC • Generator Interconnection and Deliverability Allocation Procedures – Impact for long term ATC
Tariff Changes	<ul style="list-style-type: none"> • §23.1, §23.2, §23.3, §23.4, §23.5, §23.6, §23.7 • §26.1.4.5 • §30.5.1 • §34.12.3 • §Appendix A • §Appendix L • §Appendix DD • § New Appendix GG Long-Term Transmission Service & Market Scheduling Priorities
Impacted Systems	<ul style="list-style-type: none"> • AIM • CIRA • MF • New system for ATC calculation, access, and reservation • SIBR • RTM • Settlements • OASIS • RIMS

2024 – Transmission Service & Market Scheduling Priorities Phase 2

Milestone	Milestone Name	Dates	Status
Board Approval	Obtain Board of Governors Approval	Feb 01, 2023	✓
External BRS	Post External BRS Post External BRS – Resale Scope	Jan 31, 2024 Oct 2024	✓
Settlements Config Guides	Tech Doc	Feb 12, 2024	✓
	1 st Draft Config File & Release Component Summary	March 4, 2024	✓
Tech Spec	Create ISO Interface Specifications – OASIS Create ISO Interface Specifications – OASIS	Jan 12, 2024 Oct 04, 2024	✓
	Filed ER23-2510 for Wheeling Through	Jul 28, 2023	✓
	FERC Acceptance of ER 23-2510 (calculation of available transfer capability (ATC) and the process for establishing market scheduling priority for wheeling through the ISO transmission system)	Oct 30, 2023	✓
	Compliance Filing	Nov 29, 2023	✓
Tariff	Petition for Limited Waiver for resale or assignment of monthly Wheeling Through Priority	Apr 12, 2024	✓
	Order Granting Petition for Limited Waiver ER 23-2510 NLT Dec 17, 2024	Jul 08, 2024	✓
	Track 2 DTL	Jul 14, 2023	✓
	Track 2 Revised DTL	Oct 05, 2023	✓
	Track 2 Final DTL	Dec 19, 2023	✓
	Draft BPM changes – Market Instruments (PRR1558)	Mar 20, 2024	✓
	Draft BPM changes – Market Operations (PRR1548)	Jan 16, 2024	✓
	Draft BPM changes – Market Operations (Automation) (PRR 1570)	Apr 19, 2024	✓
BPMs	Draft BPM changes – Reliability Requirements		
	Draft BPM changes – Settlements and Billing (PRR1560)	Mar 20, 2024	✓
	Draft BPM changes – Transmission Planning Process		
	Draft BPM changes – Generator Interconnection and Deliverability Allocation Procedures		
Market Sim	Market Simulation – Resale Scope	Oct 21 – Nov 01, 2024	
	Implementation of wheeling through priority process supports load service planning for Summer 2024		
	ISO begin implementation thru manual processes		
	- Publication of Monthly ATC values for June 2024 to January 2025 (13-month horizon)	Jan 16, 2024	✓
	- Request window opened (Submit via CID)	Jan 18 – Jan 31, 2024	✓
	- Results communicated	Feb 5, 2024	✓
Production Activation	Monthly Scope: New automation functionality available to support reservation of Monthly and Daily ATC in June 2024 and beyond	Apr 19, 2024	✓
	Daily Scope: Transmission Service & Market Scheduling Priorities Phase 2 – Activate daily and long-term increment calculations	May 24 for Jun 01, 2024	✓
	Resale Scope: Resale or Assignment of Monthly Wheeling Through Priority	Nov 07, 2024	
	2024 Monthly Wheeling Through Priority Request Due Dates		

FERC 2023 – Generator Interconnection Life Cycle

Project Information	Details/Date
High Level Business Problem or Need	Effective with Cluster 15, the Generation Interconnection process will transition to maintain compliance with FERC Order 2023 using a new cloud platform from Grid Unity. This mandate will streamline the intake, study processes for generator interconnection requests, contracting and management of the queue.
High Level Project Scope	Align the following Cluster 15 Generation Interconnection processes with FERC Order 2023 tariff provisions: <ul style="list-style-type: none"> - Enhanced interconnection information for public access (Interactive Heatmap, Cluster Study Status Report) - Transition from GIDAP to new RIS Interconnection Procedures - Initiate IR submission, Customer Engagement Window, Cluster Request Window Cluster 14 and prior will initially remain in RIMS but will migrate to GridUnity next year
BPM Changes	Definitions and Acronyms (new) Resource Interconnection Standards (applies Tariff Appendix KK procedures) Generator Interconnection Procedures Generator Management Transmission Planning Process
Tariff Changes	Section 25: 25.1, 25.4, 25.5 Appendices A, B.23 (removed), DD, KK (new), LL (LGIA), MM (SGIA)
Impacted Systems	RIMS, Market Participant Portal, CAISO Public Website

FERC 2023 – Generator Interconnection Life Cycle

Milestone Type	Milestone Name	Dates	Status
Policy	FERC Order 2023 is a mandate, but the project will additionally implement scope from the Interconnection Process Enhancements (IPE) 2023 initiative.	NA	NA
Board Approval	FERC Order 2023 compliance filing does not require Board approval. IPE 2023 Track 1 and 2 have been approved by the Board.	NA	NA
BRS	<p>No BRS will be provided.</p> <p>Effective with Cluster 15, business processes shall align with the new Resource Interconnection Standards per FERC Order No. 2023 (ER24-2042). This will be implemented in a new cloud-based platform – Grid Resource Interconnection Portal (GRIP). This is separate from RIMS, which will initially remain to administer procedures for Cluster 14 and back.</p> <p>During the Resource Interconnection Standards Fair, stakeholders will receive training on FERC Order 2023 compliance and procedures as performed in the new GRIP.</p>	NA	NA
Settlements Config Guides	Settlements Config Guides	NA	NA
Tech Spec	Publish Technical Specifications	NA	NA
Tariff	File Tariff Amendment – Interconnection Process Enhancements 2024 (ER24-2671)	Aug 01, 2024	✓
	FERC Acceptance	Sep 30, 2024	✓
	Compliance Filing regarding FERC Order No. 2023 (ER24-2042)	May 16, 2024	✓
BPMs	Post Draft - Definitions and Acronyms Post Draft - Resource Interconnection Standards (applies Tariff Appendix KK procedures) – Post Draft BPM – Generator Interconnection Procedure Post Draft BPM – Generator Management Post Draft BPM – Transmission Planning Process	TBD – will proceed now that FERC Approval received Sep 30, 2024	
Training	Resource Interconnection Standards Fair	Sep 17, 2024	✓
	New Interconnection Management Platform: Grid Resource Interconnection Portal (GRIP) Available *See Interconnection Request & Study Page	Oct 01, 2024	✓
Production Activation	<p>Production Activation will be delivered in alignment with the Cluster 15 Resource Interconnection Standards process within the following deliverables:</p> <ul style="list-style-type: none"> - Cluster Application Window* - Cluster Study Process - Infrastructure Coordination <p>*Note: CAISO will provide customers a 60-day period to input their interconnection request (versus the standard 15 days) to allow extra time to familiarize with the new GRIP.</p>	<p>Oct 01, 2024 (Cluster 15 Application Window Initiates)</p> <p>April 15, 2025 (Cluster Study Process Initiates)</p> <p>October 15, 2025 (Infrastructure Coordination Initiates)</p>	

2024 - Congestion Revenue Rights (CRR) Upgrade

Project Information	Details/Date
High Level Project Scope	<p>The Congestion Revenue Rights (CRR) system was implemented by CAISO in 2008 as part of the Market Redesign and Technology Upgrade (MRTU) implementation. The current CRR system is at its end of life, does not have the flexibility to accommodate future policy changes and requires the ISO to calculate data and run processes manually outside the current system to produce a successful CRR Auction.</p> <p>The CAISO has decided on a significant upgrade of the existing CRR system and adopt the latest technology stack aligned with CAISO's technology standards, consolidate all CRR related functions, minimize human errors, reduce processing time, eliminate manual workarounds, and positions the system to accommodate policy changes down the road.</p> <p>Congestion Revenue Rights (CRR) system replacement project scope is the roll-out of a:</p> <ul style="list-style-type: none"> • Brand new user-interface (UI) system with an updated new look -and-feel, to replace the existing legacy system implemented during the MRTU 2008 go-live and brought up to current ISO technology standards • Set of application-programming interfaces (APIs) to enable integration between ISO and market participant systems <p>Overall, to support the following in one consolidated CRR external-facing system:</p> <ul style="list-style-type: none"> • Annual/Monthly Auction and Allocation market participant bid submission and results retrieval • Load data submission by CRR LSEs, CEC • Load migration data submission by CRR UDCs • Secured "Congestion Revenue Rights Full Network Model" information access • Private and public access of CRR market input and output information
BPM Changes	<p>Congestion Revenue Rights</p> <ul style="list-style-type: none"> • Enhancements made to the new CRR product. • Automatic publishing of CRR market results. • Automatic CRR notification. • New CRR schedule calendar. • New CRR FNM access. • New CRR data submission and download interface UI/API. • New CRR market results interface. • Load Migration
Tariff Change	No
Impacted Systems	CRR, AIM, CMRI, OASIS, CTS, Market Clearing, EMMS, IFM/RTN, MQS, Master File, MPP, Settlements, WebOMS, ETCC.

2024 - Congestion Revenue Rights (CRR) Upgrade

System	High Level Changes
CRR	<p>Significant system upgrade including:</p> <ul style="list-style-type: none"> • Enhancements made to the new CRR application. • Automatic publishing of CRR market results. • Automatic CRR notification. • New CRR schedule calendar. • New CRR FNM access. • New CRR data submission and download interface UI/API. • Other TBDs identified through BRS development.
AIM	<ul style="list-style-type: none"> • New users and roles to support new CRR functionality
CMRI	<ul style="list-style-type: none"> • Full and incremental Payload publishing • Publish CRR Awards payload on event-driven, ad-hoc or scheduled basis • Publish CRR Awards payload on event-driven, ad-hoc or scheduled basis
OASIS	<ul style="list-style-type: none"> • Publish CRR Calendar, and all available CRR market names, and credit margin information, 3 year historical expected value.. • Allow authorized users to publish CRR inventory payloads • Broadcast the following: set aside values, the results of all CRR markets, retired pnode/anode mapping, binding constraints, initial and updated CRR source and sink list for each CRR market,
CTS	<ul style="list-style-type: none"> • Broadcast
EMMS	<ul style="list-style-type: none"> • CRR will consume data from EMMS
IFM/RTN	<ul style="list-style-type: none"> • CRR will consume data from IFM/RTN
MQS	<ul style="list-style-type: none"> • MQS will consume and process SCID in a new format • MQS will consume ownership payload in bulk
Master File	<ul style="list-style-type: none"> • Master File will be modified as needed to support the new CRR functionality
MPP	<ul style="list-style-type: none"> • CRR will provide pre-configured external reports
Settlement	<ul style="list-style-type: none"> • Settlements will be modified as needed to support the new CRR functionality
WebOMS	<ul style="list-style-type: none"> • CRR will consume data from WebOMS
ETCC	<ul style="list-style-type: none"> • CRR will consume data from ETCC

2024 - Congestion Revenue Rights (CRR) Upgrade

Milestone Type	Milestone Name	Dates	Status
Board Approval	Obtain Board of Governors Approval	NA	
External BRS	Publish External BRS BRS Revision v1.3	Nov 16, 2022 Mar 29, 2023	✓ ✓
Config Guides	Post Draft Config Guides	Yes	
Tech Spec	Publish Technical Specification	Feb 24, 2023	✓
Deployment Plan	Draft Deployment Plan	Yes	
Training	Training	Yes	
Customer Partnership Group	Last CPG	Sep 26, 2024	✓
	Next CPG	Oct 24, 2024	

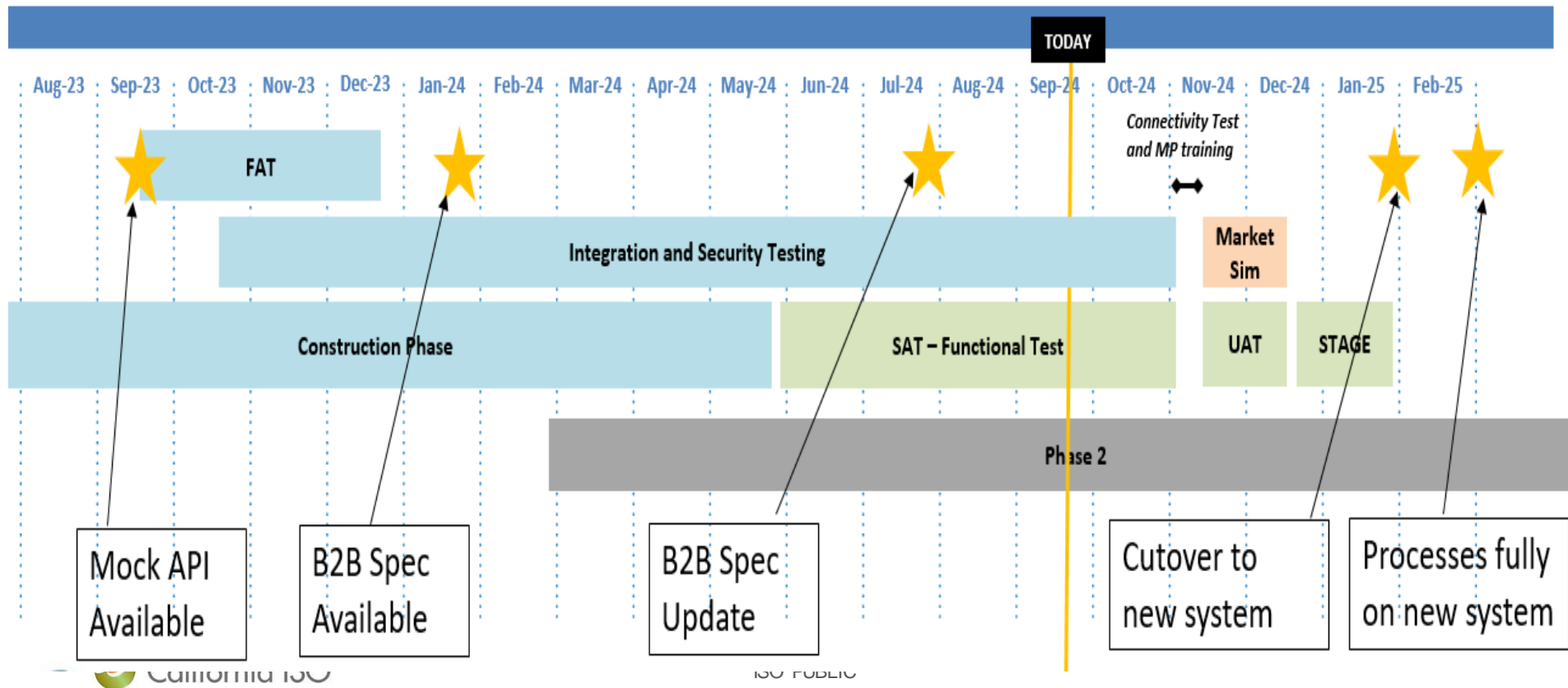
CRR System Upgrade

- **Register by 9/30/24**
- 11/4 – 11/8: Connectivity: ***UI & APIs available***
- 11/11: Start Market Simulation
 - 3 weeks Structured
 - 2 weeks Unstructured
- Access Provisioning: Upcoming; will announce when AIM is ready for access provisioning for MAPSTAGE
- Reminder: OASIS Tech Specs include the new & modified reports (<https://developer.caiso.com>)

2024 - Congestion Revenue Rights (CRR) Upgrade

Updated September 2024

- Functional UI Site Acceptance Testing and integration testing continues. UI test cases are 92% passed.
- **Connectivity Testing – 1 week after above testing, starting November 4th, just before Market SIM**
- **Training – 2 weeks before Market SIM in late October**
- **Market SIM - 3 weeks structured, then 2 weeks unstructured starting on November 11th**
- 2025 Annual Cycle, carried out in 2024, will occur on the current Production CRR application
- 1 week Cutover to new CRR application 1/27/25 to 1/30/25
- March is first month with processes fully on the new system



2024 - CRR System Upgrade – Get Connected

- CRR meetings:
 - **Bi-weekly Technical User Group (TUG)** Tue 10 AM, alternates with RUG.
 - Meetings available on the CAISO calendar on www.caiso.com
 - Meeting details and presentation materials are available on the CAISO Developer site at www.developer.caiso.com , which requires an account to be setup for access
 - **CRR Customer Partnership Group**
 - **Last CPG Sep 26, 2024; [recording available](#)**
 - **Next CPG meeting is Thursday, Oct 24, 2024**
 - Monthly
 - Meetings available on the CAISO calendar on www.caiso.com
 - Meeting details and presentation materials are available on <https://www.caiso.com/meetings-events/topics/congestion-revenue-rights-crr-settlement-upgrade-project-customer-partnership-group>

2024 - CRR System Upgrade – Calendar References

- Calendar layout of proposed CRR monthly and Annual Market Sim plan
- DRAFT - CRR 2024 & 2025 Allocation and Auction Markets Calendar

2024 - CRR System Upgrade – Calendar References

Market Sim 2024

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
<p>week 1</p> <p>T-2w - Connectivity</p> <p>Prior to Market Sim - Kickoff and Overview</p> <ul style="list-style-type: none"> Market Sim Plan High level overview of new system Uploading and Downloading <ul style="list-style-type: none"> Manual Entry, File Upload, API Public/Private Downloads Messages Sorting and Filtering Documentation and Resources Contact Information 	<p>Miscellaneous process</p> <ol style="list-style-type: none"> UDC Load Migration Submissions and post (N-hour) LT Re-nomination Secondary Market TOR conversion submission <p>Allocation Monthly Participants</p> <ol style="list-style-type: none"> CEC Load Forecast Submissions Submit Historical Load Submit Forecast Load <p>Allocation Annual Participants</p> <p>Submit AN Historical Load for 2024</p> <p>Public/Private messages</p> <p>Public/Private downloads (existing CRRs)</p> <p>Market Sim Webex</p>	<p>Miscellaneous process</p> <ol style="list-style-type: none"> UDC Load Migration Submissions Open Secondary Market TOR conversion approval <p>Allocation Monthly Participants</p> <p>Post Monthly nomination cap (MEQ T1)</p> <p>Allocation Annual Participants</p> <p>Post Annual nomination cap (SEQ T1, SEQ LT, UB, SS T1, SS LT)</p> <p>Public/Private messages</p> <p>Market Sim Webex</p>	<p>Miscellaneous process</p> <ol style="list-style-type: none"> UDC Load Migration Submissions close and post Secondary Market <p>Market Sim Webex 3-4pm PST</p>	<p>Reserved for CRR team data processing and participant responses</p> <p>Environment Patching</p>

2024 - CRR System Upgrade – Calendar References

Market Sim 2024

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
<p>week 2</p> <p>Reserved for CRR team data processing and participant responses</p> <p>CRR team setup for Monthly Markets</p>	<p><u>Allocation Monthly Participants</u></p> <ol style="list-style-type: none"> 1. Submit Nominations for Tier 1 Monthly Market 2. Windows Close on <u>Wednesday</u> 3. Download Nomination Cap data 4. Download Allocation Market MN V0 ETC and T1 model results(NDA user) <p><u>Auction Monthly Participants</u></p> <ol style="list-style-type: none"> 1. Submit Auction Portfolios Monthly Auction Market <ul style="list-style-type: none"> • Buy Bids, Sell Offers • Credit - provide \$10mil to all MPs for testing 2. Windows Close on <u>Thursday</u> 3. Download Auction market model results(NDA user) <p>Market Sim Webex</p>	<p><u>Allocation Monthly Participants</u></p> <ol style="list-style-type: none"> 1. Download Allocation Market T1 Results 2. Submit Nominations for Tier 2 Monthly Market 3. Windows Close on <u>Thursday</u> 4. Download Nomination Cap T2 data 5. Download Allocation Market T2 model results(NDA user) <p>Market Sim Webex</p>	<p><u>Allocation Monthly Participants</u></p> <p>Review results</p> <p><u>Auction Monthly Participants</u></p> <p>Review results</p> <p>Market Sim Webex 3-4pm PST</p>	<p>Reserved for CRR team data processing and participant responses</p> <p>Environment Patching</p>

2024 - CRR System Upgrade – Calendar References

Market Sim 2024

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
<p>week 3</p> <p>Reserved for CRR team data processing and participant responses</p> <p>CRR team setup for Annual markets</p>	<p><u>Allocation Annual Participants</u></p> <ol style="list-style-type: none"> 1. Submit Nominations for Tier 1 Annual Market 2. Windows Close on <u>Wednesday</u> 3. Download Nomination Cap data 4. Download Allocation Market AN V0 V1 and T1 model results(NDA user) <p>1. Submit Nominations for LT Annual Market</p> <ol style="list-style-type: none"> 2. Windows Close on <u>Wednesday</u> 3. Download Nomination Cap data 4. Download Allocation Market ETC and LT model results(NDA user) <p><u>Auction Annual Participants</u></p> <ol style="list-style-type: none"> 1. Submit Auction Portfolios Annual Auction Market <ul style="list-style-type: none"> • Buy Bids, Sell Offers • Credit - provide \$10mil to all MPs for testing 2. Re-submit for any processes or scenarios which had issues previously 3. Windows Close on <u>Thursday</u> 4. Download Auction market model results(NDA user) <p>Market Sim Webex</p>	<p><u>Allocation Annual Participants</u></p> <ol style="list-style-type: none"> 1. Submit Nominations for Tier 2 Annual Market 2. Windows Close on <u>Thursday</u> 3. Download Nomination Cap T2 data 4. Download Allocation Market T1 Results <p>Market Participant Webex 3-4pm PST</p>	<p><u>Allocation Annual Participants</u></p> <p>Review results</p> <p><u>Auction Annual Participants</u></p> <p>Review results</p> <p><u>Miscellaneous Annual process</u></p> <ol style="list-style-type: none"> 1. Submit Auction Portfolios for Participant requested scenarios <p>Market Sim Webex</p>	<p>Reserved for Q&A sessions, issue reporting, etc.</p> <p>Environment Patching</p>




2024 - CRR System Upgrade – Calendar References

Market Sim 2024

	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
week 4		Unstructured <ul style="list-style-type: none"> Re-submit for any process of scenarios for customer specific testing Market Sim Webex	Unstructured	Unstructured Market Sim Webex	Reserved for CRR team data processing and participant responses Environment Patching
week 5		Unstructured Cont.	Unstructured Cont.	Unstructured Cont. Market Sim Webex	Reserved for CRR team data processing and participant responses Environment Patching

2024 - CRR System Upgrade – Calendar References

November 2024

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
 Annual	 December  January  Market Sim/Cutover			1 2025 Auction Open
4 Dec List of outages post by 5P Post January Source/Sink List 2025 Auction Closes 5P	5 Dec Incr. Update by 5P Market Sim – Week 1	6 Market Sim – Week 1	7 Dec Tier 1 Opens 1A Dec Tier 1 Closes 5P Jan Hist Load Wind Opens 1A Jan Hist Load Wind Closes 5P Market Sim – Week 1	8 Jan Frcst Load Wind Opens 1A Market Sim – Week 1
11 Dec Post Tier 1 Results by 5P Post 2025 Auction Results by 5P Jan Frcst Load Wind Closes 5P	12 Dec Post Set-Aside Dec Tier 2 MEQ Market Sim – Week 2	13 Dec Tier 2 Opens 1A Dec Tier 2 Closes 5P Market Sim – Week 2	14 Market Sim – Week 2	15 Dec Post Tier 2 Results by 5P Market Sim – Week 2
18 Market Sim – Week 3	19 Dec Auction Opens 1A Market Sim – Week 3	20 Dec Auction Closes 5P Dec UDCs submit LM data by 12P Market Sim – Week 3	21 Market Sim – Week 3	22 Dec Auction results post by 5P Market Sim – Week 3
25 Jan Post CRR FNM by 5P Market Sim – Week 3	26 Market Sim – Week 3	27 Jan Post MEQ Market Sim – Week 3	28 Holiday (Thanksgiving)	29 Holiday (Thanksgiving)

2024 - CRR System Upgrade – Calendar References

December 2024					
MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	
2 Post February Source/Sink List	3 Market Sim – Week 4	4 Market Sim – Week 4	5 Market Sim – Week 4	6 Jan List of outages post by SP	
9 Feb Hist Load Wind Opens 1A Feb Hist Load Wind Closes 5P	10 Jan Incr. Update by SP Feb Forecast Load Wind Open 1A Market Sim – Week 5	11 Feb Forecast Load Wind Closes 5P Market Sim – Week 5	12 Jan Tier 1 Opens 1A Jan Tier 1 Closes 5P Market Sim – Week 5	13 Jan Post Tier 1 Results by SP	
16 Jan Post Set-Aside Jan Tier 2 MEQ	17 Jan Tier 2 Opens 1A Jan Tier 2 Closes 5P	18	19 Jan Post Tier 2 Results by 5P	20 Jan UDCs submit LM data by 12P	
23 Jan Auction Opens 1A	24 Jan Auction Closes 5P	25	26 Feb Post CRR FNM by SP	27 Jan Auction results post by SP	
30 Feb Post MEQ	31			<div>  January </div> <div>  February </div> <div>  Market Sim/Cutover </div>	

2024 - CRR System Upgrade – Calendar References

January 2025

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
 February  March  Market Sim/Cutover		1 Holiday (New Year's Day)	2	3 Feb List of outages post by 5P
6 Post March Source/Sink List	7 Feb Incr. Update by 5P	8 Mar Hist Load Wind Opens 1A Mar Hist Load Wind Closes 5P (Entered in current system, will be migrated to new System)	9 Feb Tier 1 Opens 1A Feb Tier 1 Closes 5P Mar Frcst Load Wind Opens 1A	10 Mar Frcst Load Wind Closes 5P
13 Feb Post Tier 1 Results by 5P	14 Feb Post Set-Aside Feb Tier 2 MEQ	15 Feb Tier 2 Opens 1A Feb Tier 2 Closes 5P	16	17 Feb UDCs submit LM data by 12P Feb Post Tier 2 Results by 5P
20 Holiday (Martin Luther King's B-Day)	21	22 Feb Auction Opens 1A	23 Feb Auction Closes 5P	24
27 Feb Auction results post by 5P	28 Mar Post CRR FNM by 5P – on SFTP site Production Deployment –Phase 1 cutover	29 Production Deployment –Phase 1 cutover	30 Production Deployment –Phase 1 cutover	31 Production Deployment – Phase 1 cutover Complete

2024 - CRR System Upgrade – Calendar References

February 2025					
	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
	 March  April				
	3 New System Online Mar Post MEQ Post April Source/Sink List	4	5 Apr CEC Load Wind Opens 1A Apr CEC Load Wind Closes 5P	6 Mar List of outages post by 5P Mar Incr. Update by 5P Apr <u>Hist</u> Load Wind Opens 1A Apr <u>Hist</u> Load Wind Closes 5P	7 Mar Tier 1 Opens 1A Mar Tier 1 Closes 5P Apr <u>Frcst</u> Load Wind Opens 1A
	10 Apr <u>Frcst</u> Load Wind Closes 5P	11 Mar Post Tier 1 Results by 5P	12 Mar Post Set-Aside Mar Tier 2 MEQ	13 Mar Tier 2 Opens 1A Mar Tier 2 Closes 5P	14
	17 Holiday Presidents Day	18 Mar Post Tier 2 Results by 5P	19	20 Mar UDCs submit LM data by 12P Mar Auction Opens 1A	21 Mar Auction Closes 5P Apr Post CRR FNM by 5P
	24	25 Mar Auction results post by 5P	26 Apr Post MEQ	27	28

2024 – Highest Emergency Rating

Project Information		Details/Date		
High Level Business Problem or Need		The project aims to primarily improve market robustness, performance, and the technology foundation for system grid reliability by updating functionality and interfaces to reduce workarounds, automating manual processes and addressing minor defects or functionality enhancements identified in by the business units.		
High Level Project Scope		<p>This enhancement focuses specifically on internal ISO users and RC Customers having the capability to adjust the HER and ER duration in OMS.</p> <p>Step 1 – HER data cleanup</p> <ul style="list-style-type: none">• Load HER in EMMS in one of the existing slots• Transfer HER to RTCA during the network model build process <p>Step 2 – Use RTCA to update HER</p> <ul style="list-style-type: none">• For interim changes to HER in between models, change the data directly in RTCA• Make the ER and HER duration and value fields editable• Include validation to make sure HER is not less than the emergency rating <p>Step 3 – WebOMS changes</p> <ul style="list-style-type: none">• Work with OATI to include a new field for HER• HER can be updated in WebOMS in between model promotions• Updates to HER will be sent to downstream systems		
BPM Changes		Not Impacted		
Tariff Changes		Not Impacted		
Impacted Systems		webOMS, HANA, Market		
Milestone Type		Milestone Name	Dates	Status
Board		Board	NA	
BRS		BRS BRS 1.1	Feb 15, 2024 Apr 10, 2024	✓ ✓
Tech Spec		Present OMS in TUG OMS	Feb 27, 2024 Aug 19, 2024	✓ ✓
Training		Training	Late Oct	
Market Simulation		Market Simulation	Early Nov	
Production		Production	Q4 2024	

2024 - Highest Emergency Rating - OMS

- Three new fields will be added on the current OMS Derate User Interface and user will have capability to adjust the values through UI and API:
 - “Emergency Rating Duration” as integer, set in minutes.
 - “Highest Emergency Rating” as a numeric input.
 - “Highest Emergency Rating Duration” as integer, set in minutes.

The screenshot shows the 'Equipment Picker' interface with tabs for 'Notes' and 'RIMS'. On the left, there are dropdown menus for 'Station', 'Voltage Level', 'Equipment Type', and 'Equipment:'. The main area contains three tables:

- Equipment Table:** Columns include Station, Name, Voltage, Type, Switch Modeling Complete, Use Facility Model, and ID.
- Switches Table:** Columns include Station, Name, Voltage, Type, Status, Start Date/Time, End Date/Time, ID, and Is Trumped.
- Equipment Rating Changes Table:** Columns include Name, Voltage, Normal Rating (MVA), Seasonal Normal Rating, Emergency Rating (MVA), Seasonal Emergency Rating, Start Date/Time, and End Date/Time.

Red arrows point to the 'Emergency Rating (MVA)' column in the 'Equipment Rating Changes' table, labeled 'Emergency Rating Duration'. Another red arrow points to the 'Seasonal Emergency Rating' column, labeled 'HER'. A third red arrow points to the 'End Date/Time' column, labeled 'HER Duration'.

WebOMS will give validation error if below conditions are not satisfied:

Rating Limits and Durations are not defined for ERC.

Highest Emergency Rating is less than active Emergency Rating.

Highest Emergency Duration is greater than Emergency Rating Duration.

If HER Limit and Duration values are partially complete.

If user want to enter ER greater than the current HER then would first have to adjust HER then update ER.

- If neither HER Limit and Duration values are defined, system should auto-fill the HER Limit and Duration values to match their associated Emergency Rating Limit and Duration values.
- Emergency Rating (ERC) flows to Market, RTCA, and EMS; and HER only flows to RTCA, and EMS. WebOMS will display a pop-up notification on submitting the ERC or HER through UI, API akin to SUCCESS message
- There will be XSD update on below services :
 - SubmitTransmissionOutage_v3-Regular and DocAttach
 - SubmitTransmissionOutageChangeRequest_v3-Regular and DocAttach
 - RetrieveTransmissionOutage_v3 - Regular and DocAttach
 - RetrieveTransmissionOutageChangeRequest_v3 - Regular and DocAttach.

2024 – WEIM Fab Enhancements

Business Opportunity/Problem Statement:

What:	<p>WEIM FAB Enhancements consist of three enhancements and one improvement. This project aims to improve RTM robustness, minimize Market Isolations, modernize tools for Support Control Center, provide accurate, accessible, and clear information to ensure customer preparedness and to deepen understanding about the reliability needs of the grid.”</p> <p>WEIM Fab-Enhancements:</p> <ul style="list-style-type: none">✓ 1) Congestion Management Full Transparency2) Hourly Base ETSR Schedule Redundancy (project, RTM payload). Note: This item is being pursued as its own stand alone project.3) External WEIM Commitment Override (BAAOP UI)4) Dynamic ETSR Limits – Safety Net5) System Net ITC Definitions
Who does this opportunity/problem impact:	<p>WEIM entities, WEIM BA Operators (CAISO included), RTMO</p>

2024 – WEIM Fab Enhancements: Congestion Management Transparency

(Implemented June 2024)

Project Information	Details
High Level Business Problem or Need	<ul style="list-style-type: none">The Congestion Management Transparency enhancement seeks to provide WEIM entities with highly accurate, easily accessible, and transparent information to enhance customer preparedness and grid reliability visibility. <p>✓ <i>This enhancement was implemented June 2024.</i></p>
High Level Project Scope	<ul style="list-style-type: none">Currently, WEIM Operators can see their own flowgates and resources on the RTM UI but cannot see: 1) Why their resource(s) are being moved if it is for constraint(s) outside of their BAA, and 2) what resources outside of their BAA are being moved to mitigate their BAA's constraints.WEIM Operators must have the capability to see and select their BAA's resources that are impacted by congestion as well as others' resources they are impacting with congestion (even if outside of their BAA). This enhancement is for the following tables within the RTM UI: Congested Resources Table, Binding Transmission Constraints Flowgates, and Binding Transmission Constraints Nomograms.<i>Warning: "WEIM Operators are responsible for ensuring this information is handled within their own organizations consistent with FERC's Standards of Conduct for Transmission Providers. The CAISO is not requiring any additional attestations from WEIM Operators or imposing additional access controls within the BAAOP system."</i>
BPM Changes	Market Operations
Tariff Changes	N/A
Impacted Systems	<p>Transmission Resource Congestion: RTM – RTD, RTPD, STUC</p> <p>Binding Transmission Constraints Flowgates: RTM – RTD, RTPD, STUC</p> <p>Binding Transmission Constraints Nomograms: RTM – RTD, RTPD, STUC</p>

2024 – WEIM Fab Enhancements: Congestion Management Transparency Transmission Resource Congestion (Implemented June 2024)

IFM/RTN: Operations > Transmission > Resource Congestion

BAAOP: EIM > Transmission > Resource Congestion

This requirement is for RTD/RTPD/STUC UIs

The CAISO or WEIM entity should only be able to see their BAA's resources in the "Congested Resources" table (left side).

They should be able to select any resource from the left side table and on the "Constraints causing Congestion" table (right side) they should see any constraint in the system that is moving their resource, not just within their own BAA.

[illegible]

2024 – WEIM Fab Enhancements: Congestion Management Transparency

Binding Transmission Constraints Flowgates (Implemented June 2024)

IFM/RTN: Operations > Transmission > Binding Transmission Constraints - Flowgates
BAAOP: EIM > Transmission > Binding Transmission Constraints - Flowgates
This requirement is for RTD/RTPD/STUC UIs

In this UI, the CAISO or WEIM entity should only be able to see their BAA constraints in the "Binding Transmission Constraints - Flowgates" table (left side).

They should be able to select any constraint from the left side table and on the "Resource Participation" table (right side) they should see any resource in the system that is being moved due to congestion, not just resources within their own BAA.

* Add new column "BAA" to Resource Participation table

EIMAdmin

EIMTransmissionInputSystemNAComing Soon – Live Data

EIMTransmissionBinding Transmission Constraints - FlowgatesRTD

BAA[ALL]Interval End[ALL]NACase[ALL]Flowgate Name[ALL]PassRTDScenario Type[ALL]

ApplyReset

Binding Transmission Constraints - Flowgates

BAA	Interval End	Case ID	NA Case	Station Name	Voltage Level	Flowgate Name	Dir	Base Flow	Binding Limit	Cleared Value	Leading Limit	Flag	Optimized	Prising Scenario	Type	Base Cost	Cost	Cost	Cost
	02/26/2024 13:45	0	Base Case	FROM-DIR	P	501.6	501.6	501.6	100.0	Maximum	70.01	Base	88.00	88.00					
	02/26/2024 13:50	0	Base Case	FROM-DIR	P	501.6	501.6	501.6	100.0	Maximum	69.81	Base	88.00	88.00					
	02/26/2024 13:55	0	Base Case	FROM-DIR	P	501.6	501.6	501.6	100.0	Maximum	71.03	Base	88.00	88.00					
	02/26/2024 14:00	0	Base Case	FROM-DIR	P	501.6	501.6	501.6	100.0	Maximum	0.00	FRU	88.00	88.00					
	02/26/2024 14:05	0	Base Case	FROM-DIR	P	501.6	501.6	501.6	100.0	Maximum	62.26	Base	88.00	88.00					
	02/26/2024 14:10	0	Base Case	FROM-DIR	P	501.6	501.6	501.6	100.0	Maximum	62.25	Base	88.00	88.00					
	02/26/2024 14:15	0	Base Case	FROM-DIR	P	501.6	501.6	501.6	100.0	Maximum	62.25	Base	88.00	88.00					
	02/26/2024 14:20	0	Base Case	FROM-DIR	P	501.6	501.6	501.6	100.0	Maximum	62.80	Base	88.00	88.00					
	02/26/2024 14:25	0	Base Case	FROM-DIR	P	501.6	501.6	501.6	100.0	Maximum	64.77	Base	88.00	88.00					
	02/26/2024 14:30	0	Base Case	FROM-DIR	P	501.6	501.6	501.6	100.0	Maximum	66.31	Base	88.00	88.00					

Resource Participation

Resource	Relief [MW]	Shift Factor	Net Movement [MW]	Previous [MW]	Current [MW]	Delta [MW]	SE [MW]	Telem [MW]
BAA	0.060	0.9990	0.0600	135.9500	136.2200	0.2700	136.0997	134.3400
	4.495	0.9990	4.5000	228.8800	228.6600	-0.2200	228.8536	228.0100
	0.512	0.9990	0.5130	68.1300	65.8700	-2.2600	67.0490	
	-5.067	0.9990	-5.0725	118.6538	120.0338	1.3800	120.9004	118.8600

Please add a new column "BAA" for the resource to the right side table.

2024 – WEIM Fab Enhancements: Congestion Management Transparency

Binding Transmission Constraints Nomograms (Implemented June 2024)

IFM/RTN: Operations > Transmission > Binding Transmission Constraints - Nomograms
BAAOP: EIM > Transmission > Binding Transmission Constraints - Nomograms
This requirement is for RTD/RTPD/STUC UIs

In this UI, the CAISO or WEIM entity should only be able to see their BAA Nomograms in the "Binding Transmission Constraints - Nomograms" table (left side).

They should be able to select any Nomogram from the left side table and on the "Resource Participation" table (right side) they should see any resource in the system that is being moved due to congestion, not just resources within their own BAA.

* Add new column "BAA" to Resource Participation table

GenerationTransmissionSchedulesRenewablesSystem

Operations > Transmission > Binding Transmission Constraints - Nomograms > RTD

BAA [ALL] Interval End [ALL] Nomogram Name [ALL] % of Binding Threshold 100.00 Scenario Type [ALL]

ApplyResetPass RTD

Binding Transmission Constraints - Nomograms

BAA	Interval End	Nomogram Name	Curve ID	Segment ID	Limit	% of Binding Threshold	Flow	Shadow Price	Base Point	Muststart	Threshold	Scenario Type	Monitor Only
	03/01/2024 07:55		1	1	310	100.0	310	-29.87	0.00	0.00	Base		
	03/01/2024 08:00		1	1	310	100.0	310	0.00	0.00	0.00	FRD		
	03/01/2024 08:00		1	1	310	100.0	310	0.00	0.00	0.00	FRU		
	03/01/2024 08:20		2	1	164	100.0	164	-3.74	0.00	0.00	Base		
	03/01/2024 08:20		2	1	164	100.0	164	0.00	0.00	0.00	FRU		
	03/01/2024 07:55		2	1	607	100.0	607	-29.49	0.00	0.00	Base		
	03/01/2024 08:00		2	1	607	100.0	607	-29.51	0.00	0.00	Base		
	03/01/2024 08:05		2	1	607	100.0	607	-2.60	0.00	0.00	Base		
	03/01/2024 08:10		2	1	607	100.0	607	-3.28	0.00	0.00	Base		
	03/01/2024 08:15		2	1	607	100.0	607	-3.28	0.00	0.00	Base		
	03/01/2024 08:20		2	1	607	100.0	607	-3.23	0.00	0.00	Base		
	03/01/2024 08:20		2	1	607	100.0	607	0.00	0.00	0.00	FRU		
	03/01/2024 08:25		2	1	607	100.0	607	-15.41	0.00	0.00	Base		
	03/01/2024 08:30		2	1	607	100.0	607	-15.35	0.00	0.00	Base		
	03/01/2024 08:35		2	1	607	100.0	607	-13.21	0.00	0.00	Base		
	03/01/2024 08:40		2	1	607	100.0	607	-12.78	0.00	0.00	Base		
	03/01/2024 08:40		2	1	607	100.0	607	0.00	0.00	0.00	FRU		

Resource Participation

Resource	Relief	Shift Factor	Net Movement	Previous	Current	Delta	SE	Telem
[MW]	[MW]		[MW]	[MW]	[MW]	[MW]	[MW]	[MW]
BAA	0.003	-0.0050	-0.5840	6.8950	10.9560	4.2610	4.9170	8.9000
	-0.009	-0.0058	1.5610	11.6240	12.0140	0.3900	9.9767	10.6000
	0.738	0.0378	19.5410	110.6900	118.0500	7.3600	81.6623	100.8000
	2.372	0.4093	5.7950	31.8490	33.4920	1.6430		29.8400
	0.012	-0.0050	-2.3840	1.3160	0.9230	-0.3930	1.0099	0.7500
	0.006	-0.0050	-1.1250	8.3800	6.1320	-2.2480	8.0173	5.1000
	0.009	-0.0058	-1.4830	13.5000	12.8000	-0.7000	13.8868	12.8000
	-0.006	-0.0058	1.0400	17.7000	16.9000	-0.8000	17.2778	16.9000
	0.022	-0.0058	-3.7500	9.8000	11.0000	1.2000	9.3262	11.0000
	-0.009	-0.0058	1.5000	33.0000	29.0000	-4.0000	32.8623	29.0000
	0.004	-0.0058	-0.6800	13.9000	12.9000	-1.0000	13.5314	12.9000
	0.059	-0.0058	-10.1870	16.2000	13.0000	-3.2000	15.3453	13.0000
	0.015	-0.0058	-2.6630	2.0000	2.8000	0.8000	1.6501	2.8000
	-0.029	-0.0058	4.9800	13.3000	14.9000	1.6000	11.1506	14.9000
	0.011	-0.0058	-1.8800	11.6000	13.3000	1.7000	13.1930	13.3000
	0.087	-0.0058	-15.1500	0.0000	0.0000	0.0000	0.0000	0.0000
	0.067	-0.0058	-11.6800	9.7200	9.0800	-0.6400	9.6502	9.0800
	-0.032	0.0213	-1.4900	7.7100	6.3300	-1.3800	9.6497	6.3300
	0.021	0.0213	0.9670	42.9800	45.0300	2.0500	0.0000	45.0300
	0.224	0.3548	0.6310	15.4830	16.3310	0.8480		15.8200
	4.696	0.3608	13.0160	32.5800	34.1630	1.5830		30.5100
	-0.029	0.0390	-0.7350	107.2920	112.4660	5.1760		105.1000
	-0.006	-0.0050	1.2630	7.5650	8.0000	0.4350	6.3625	6.9900
	-0.005	-0.0050	0.9850	4.7910	4.9620	0.1710	3.8855	4.2900

Please add a new column "BAA" for the resource to the right side table.

2024 – WEIM Fab Enhancements: External WEIM Commitment Override

Project Information	Details
High Level Business Problem or Need	<ul style="list-style-type: none">• The External WEIM Commitment Override enhancement seeks to modernize WEIM operator tools for Support Control Center Operations as well as to enhance customer preparedness and grid reliability visibility.• This enhancement is currently slated for 2024. Timeline updates to be provided in future meetings.
High Level Project Scope	<ul style="list-style-type: none">• Currently, WEIM Operators call the RTMO to request the commitment override and RTMO enters the override into the RTM via BAAOP. RTMO do not have the authority to deny the request from the external WEIM entity.• This enhancement shall provide WEIM Operators with the ability to enter WEIM Commitment Overrides directly in the RTM Market UI themselves.• This enhancement applies to any WEIM BAA with existing access to RTM. Currently, no additional access provisioning or roles are required in AIM.
BPM Changes	Market Operations
Tariff Changes	N/A
Impacted Systems	RTM - BAAOP

Market Simulation target October 2024

WEIM Enhancements: WEIM Commitment Override – BAAOP UI

- October – Unstructured Market Simulation

ID#	Guidance on Market Participant Impacts	Source System	Sink System	Reason for Potential Scenario
MKT - 010	Unstructured Market Sim – WEIM External Commitment Override External WEIM BA Operators must have the capability within RTM - BAAOP to enter commitment overrides directly in the RTM Market UI. Note: See BRQ030.	N/A	<i>RTM – BAAOP</i>	Changes to UI

ID#	Business Feature	Req. Type	Potential Application(s) Impacted
<i>FAB – BRQ03</i>	<i>External WEIM Commitment Override</i> System (RTM) within BAAOP, must have the capability for external WEIM BA Operators to enter commitment overrides directly in the RTM Market UI. Implementation note: This would be similar functionality as CAISO BA Operations (Generation Dispatcher) having this ability. Implementation note: use the External BAA Operator role for BAAOP. Implementation note: Currently, external WEIM entities call the RTMO to request the commitment override and the RTMO enters the override into the RTM via BAAOP. The RTMOs do not have the authority to deny the request from the external WEIM entity. Implementation note: This requirement applies to any WEIM BAA with existing access to RTM. No new access provisioning needed in AIM, no updates to roles needed in AIM. Implementation note: UI updates only Impacted: BPM, UIs, Unstructured Market Sim	<i>Core</i>	<i>RTM - BAAOP</i>

2024 – WEIM Fab Enhancements: System NET ITC Definitions

Project Information	Details
High Level Business Problem or Need	<ul style="list-style-type: none">Currently, the System NET ITC Definitions are updated directly during new WEIM onboarding. As there are several existing WEIM entities that were onboarded prior to the addition of this business process the request is to update System NET ITC Definitions for existing WEIM entities.This enhancement is currently slated for 2024. Timeline updates to be provided in future meetings.
High Level Project Scope	<ul style="list-style-type: none">Internal ISO team to update System NET ITC Definitions for existing WEIM entities.This enhancement item is being disclosed for WEIM entities visibility purposes only.No action is required for this enhancement by WEIM entities at this time.
BPM Changes	N/A
Tariff Changes	N/A
Impacted Systems	MasterFile

ISO testing underway

2024 – WEIM Fab Enhancements: Dynamic ETSR Limits Safety Net

Project Information	Details
High Level Business Problem or Need	<ul style="list-style-type: none">• The Dynamic ETSR Limits Safety Net seeks to resolve a known reliability issue for numerous WEIMs.• This enhancement is currently slated for 2024. Timeline updates to be provided in future meetings.
High Level Project Scope	<ul style="list-style-type: none">• This enhancement seeks to define and introduce a safety net in the event the Dynamic Limits Interface (DLI) has an issue with send/receive payload or null values in RTM.• CAISO is actively scoping this enhancement to ensure WEIM alignment prior to proposing an agreed upon solution. This item shall be more thoroughly disclosed in future WEIM meetings.
BPM Changes	TBD
Tariff Changes	N/A
Impacted Systems	RTM - BAAOP

2024 – FERC 881 – Managing Transmission Line Ratings

Project Information	Details/Date
High Level Project Scope	<p>This initiative will address the California ISO's compliance with FERC Order No. 881 in establishing new transmission line rating requirements</p> <p>Order No. 881 establishes new transmission line rating requirements for public utility transmission providers</p> <ul style="list-style-type: none"> Establish and use ambient-adjusted ratings and seasonal ratings for all transmission lines unless excepted <ul style="list-style-type: none"> Use AARs for near-term transmission service requests Use seasonal rating for long-term transmission service requests RTOs/ISOs must implement systems and procedures to allow transmission owners to electronically update transmission line ratings at least hourly Use uniquely determined emergency ratings for contingency analysis in the operations horizon and in post-contingency simulations of constraints Implement transparency reform

Milestone Type	Milestone Name	Dates	Status
Tariff	Draft Tariff Language	May 20, 2022	✓
	Revised Draft Tariff Language	Jun 23, 2022	✓
	FERC Filing ER22-2362	Jun 16, 2022	✓
	FERC Acceptance ER22-2362	Apr 20, 2023	✓
	FERC Acceptance Tariff Revisions	Dec 13, 2023	✓
BRS	Publish BRS – Track 1	Jan 30, 2024	✓
	Publish BRS – Track 1 (Updates & Added FAC-011)	Jun 11, 2024	✓
	Publish BRS – Track 2	By end of Sep 2024	
Market Simulation	Market Simulation	NA	
Production	Track 1 Real-Time Reliability Applications	Apr 1, 2024	✓
	Track 2 Operational/EMS Model Data & Applications	2024/early 2025	

FERC 881 Project Timelines by Tracks



- **Track 1 – Real Time Reliability Applications**
 - Delays in application deliver timeline with FAC-11 additions to the project.
 - Utilization of AAR in real time reliability applications.
 - Estimated - Target Capability to be ready by Q3 2024 . Originally Q2.
- **Track 2 – Operational/EMS Model Data and Applications**
 - OATI WeblineR product will be utilized for receiving Look ahead ratings.
 - Finalizing OATI functional specification document.
 - Estimated - Target Capability to be ready early 2025
- **Track 3 – Market Application and Look Ahead Applications**
 - Requirements phase started and should be complete by September 2024.
 - Based on requirements gathering and vendor/internal resources constraints potential for delay in some aspects of implementation.
 - Estimated - Target Capability to be ready in Q2 2025.

Modification of Maximum Import Bid Price Hourly Energy Shaping Factor

Project Information	Details/Date
High Level Project Scope	<p>Modify MIBP Energy Price Hourly Shaping Factor</p> <p>The new formula for shaping factor is based on the high-priced day SMEC only. Use high-priced day SMEC shape to adjust Electric Hub price of the trading day. This is a change from current one that using the SMEC of trade hour in trading day or the same hour of the closest prior day if trading day DAM is not run yet.</p>

Milestone Type	Milestone Name	Dates	Status
Workshop	Maximum Import Bid Price Workshop	May 28, 2024	✓
BPM	Market Instruments – PRR 1591	Sep 25, 2024	✓
Production	Activation	Nov 14, 2024	

Enable Non-Generating Resources to Participate in Inter-SC Trade

Information	Details
Source	2024 Annual Policy Initiatives Roadmap Process
Category	Storage
Submission	Enable non-generating resources to participate in inter-SC trade
Summary	Allow non-generating resources to participate in inter-SC trade and offer physical energy product in order to continue effective integration of higher capacities of energy storage and meet RA and GHG compliance goals.
Description	In the current market design, standalone battery storage projects are not available to be selected in the "location" dropdown list for transactive physicals in IST. To continue effective integration of higher capacities of energy storage and meet RA and GHG compliance goals, the ISO should allow NGRs to participate in inter-SC trade and offer physical energy product. Enabling battery storage to participate in physical IST would increase market efficiency and reduce uncertainty in the preschedule window, and would allow battery storage to offer supplemental capacity or replacement energy through IST.
Presentation	May 15, 2024
System Impacts	Scheduling Infrastructure & Business Rules (SIBR)

Milestone Type	Milestone Name	Dates	Status
BPM	Publish PRR: Market Instruments		
SIBR Release Notes	Publish SIBR Release Notes		
SIBR Rules	Publish Inter-SC Trades Rules		
SIBR SC User Guide	Update to allow NGR for Physical Trades		
SIBR Inter-SC Trades (IST) Tutorial	Update to allow NGR for Physical Trades		
Market Simulation	Market Simulation		
Production	Activation		

**This effort is separate from the "Inter-SC Trades in Regional Markets" policy initiative*

Independent 2025 Releases

2025 – Hybrid Resources 2C RIMS

Project Information	Details/Date
High Level Business Problem or Need	<p>The ISO launched this stakeholder initiative to identify new or enhanced market rules and business processes needed to accommodate hybrid resources, resources that consist of two sets of market rule changes that will facilitate mixed-fuel type (hybrid and co-located resources) project participation in the ISO markets.</p> <p>Prior to this initiative, Phase 1 identified a first set of modifications generally concerned with setting up and operating co-located resources.</p> <p>Building on phase 1, Phase 2 focuses on modifications that will explore how hybrid generation resources can be registered and configured to operate within the ISO market. The initiative will further develop solutions allowing developers to maximize the benefits of their resource's configuration. Additionally, hybrid resource configurations also raise new operational and forecasting challenges that the ISO plans to address during this initiative.</p>
High Level Project Scope	<p>With this initiative, there's an opportunity to increase storage and the number of hybrid resources that can connect to the ISO grid. Currently the interconnection queue includes more than 24,000 MW of mixed fuel projects and nearly 20,000 MW of storage which represents roughly half of all generation in the current interconnection queue.</p>
BPM Changes	Settlements & Billing
Impacted Systems	<p>Summer 2023: Settlements</p> <p>Fall 2023: Metered Quantities for Hybrids</p> <p>Independent 2025: RIMS</p> <p>Completed: Today's Outlook, ISO Today Mobile Application, Reports</p>
Requirements	http://www.caiso.com/Documents/BusinessRequirementsSpecifications-HybridResourcesPhase2.pdf

2025 – Hybrid Resources 2C RIMS

Milestone Type	Milestone Name	Dates	Status
External BRS	Publish External BRS	Jan 31, 2023	✓
	Revision – Add 4 Market Simulation Business Requirements	Jan 04, 2024	✓
Settlements Config Guides	NA for RIMS	NA	
Tech Spec	Create and Publish ISO Interface Spec (Tech Specs)	NA	
Market Sim	Market Sim Window – RIMS	Early 2025	
Shapefile	Shapefile requirements and samples will be presented in future RUG & TUG forums	Early 2025	
Production Activation	Hybrid Resources 2C – RIMS	2025	

2025 – Transmission Exchange Agreement

Project Information	Details/Date
High Level Business Problem or Need	<p>The ISO is committed to develop a process or system that allows Western Area Power Administration – Sierra Nevada Region (“WAPA”) to resell some or all of their 400 MW ownership rights on the PAC#1 line to other SCIDs and retain the perfect hedge and scheduling priority to further contract negotiations to extend the term of the Transmission Exchange Agreement.</p> <p>The Transmission Exchange Agreement (“TEA”) with WAPA-SNR, PG&E and ISO is scheduled to expire 9/30/2024. A term of the original agreement executed in 2004, was that the ISO would develop a system that allowed WAPA to sell their unused capacity on their line. This project provides solution to the scheduling issue which needs to be in place by June 2024 to ensure that the ISO has solved the problem and support filing an amendment and extension of the TEA at FERC.</p>
High Level Project Scope	<ul style="list-style-type: none"> • WAPA needs functionality to sell their TOR to other parties on their OASIS. • If the TOR rights are sold then WAPA will notify the CAISO to provide the purchaser the hedging and scheduling priority opportunity provided all ETCs/TORs. • The market and settlement systems need to be able to “move” the Contract Reference Number (“CRN”) from the WAPA CRN to the purchaser SCIDs so that the settlement to the purchaser SCID reverses the costs of the transmission access charge and congestion (aka the perfect hedge) and provides a high scheduling priority in the IFM and RTM. • WAPA will not take on the obligation to settle with their purchaser. • WAPA can sell any increments of MWs up to their 400 MW ownership rights. Therefore, the solution needs to be flexible enough to allow the “existing” TORs to vary the MWs capabilities. [Note: The MW increments to be sold can be no less than 5 MW.] • WAPA’s functionality allows them to schedule between Malin and Round Mountain, Malin and PG&E DLAP, and Malin and Tracy. This would be the source and sink that that functionality needs to provide. • If there are outages on the line, the curtailment should be consistent with current practice.
BPM Changes	Settlements Configuration Guides
Tariff Changes	N/A
Impacted Systems	AIM, MF, CMRI

2025 – Transmission Exchange Agreement

Milestone Type	Milestone Name	Dates	Status
External BRS	Post External BRS	Sep 03, 2024	✓
BRS	Provide to WAPA	Jan 23, 2024	✓
Settlements Config Guides	Tech Doc	Feb 12, 2024	✓
	1st Draft Config File & Release Component Summary	Mar 04, 2024	✓
Tech Spec	Create ISO Interface Specifications – CMRI	Mar 26, 2024	✓
	UI: The current CMRI CRN report is not being changed. WAPA will be able to see Sub CRNs mapped to its own Parent CRN		
Tariff	NA	NA	
BPMs	Draft BPM changes – Settlements & Billing PRR 1559	Mar 20, 2024	✓
Market Simulation	Market Simulation – WAPA	Feb 2025	
Production Activation	Transmission Exchange Agreement Renegotiation	2025	

Spring 2026 Release

Day Ahead Market Enhancements

Project Information	Details/Date
High Level Business Problem or Need	<p>In recent years, Variable Energy Resource (VER) have gained significant traction in the energy grid, playing a crucial role in achieving renewable energy targets and reducing greenhouse gas emissions. However, their increasing presence has introduced a new challenge energy imbalances between the Day Ahead and Real Time markets.</p> <p>Another reason for the energy imbalance is the day-ahead market operates on hourly time increments, whereas real-time market schedules energy in 15 and 5-minute intervals. This discrepancy in granularity results imbalances since the real-time market schedules fluctuate within the hour while day-ahead market schedules remain fixed for the entire hour.</p> <p>These imbalances necessitates out-of-market interventions by operators, such as forecast biasing and dispatches, to uphold grid reliability. However, this situation presents an opportunity to improve our market software, enabling us to achieve a more efficient and economical solution while addressing the variability and reliability concerns within the market.</p>
High Level Project Scope	<p>Enhance the California ISO's (CAISO's) day-ahead market by:</p> <ul style="list-style-type: none"> • Introducing an imbalance reserve (IRU/IRD) product to provide flexible capacity to account for real-time ramping needs • Enhancing the residual unit commitment process to also ensure there is sufficient downward dispatch capability (RCU/RCD) • Enhancing the day-ahead market to maximize benefits of greater West-wide diversity in the day-ahead optimization for Western Energy Imbalance Market participants
BPM Changes	Settlements and Billing, Market Instruments & Market Operations
Tariff Changes	Sections 27, 31, 34, 39
Impacted Systems	MF, SIBR, DAM, OASIS, CMRI, Settlements & Internal Systems

Day Ahead Market Enhancements

System	High Level Changes
MF	<ul style="list-style-type: none"> • Define IRU, IRD, RCU, RCD eligibility for the resource ID in MF.
SIBR	<ul style="list-style-type: none"> • IRU,IRD,RCU,RCD bid rules
DAM	<ul style="list-style-type: none"> • Calculate IRU/IRD requirements • MPM: Market Power Mitigation for IRU/IRD • IFM: procure IRU/IRD • IRU/IRD deployment scenarios • IRU/IRD requirement distribution • IRU/IRD in NA-AC power flow • Include IRU/IRD in constraints • RCU/RCD procurement • RUC-MPM pass • Impact on RUC performance with additional MPM pass • LMP for EN, IRU/IRD, RCU/RCD
OASIS	<ul style="list-style-type: none"> • IRU, IRC, RCU,RCD related public reports
CMRI	<ul style="list-style-type: none"> • IRU, IRC, RCU,RCD related private reports
Settlements	<ul style="list-style-type: none"> • IRU, IRC, RCU,RCD Settlements

Day Ahead Market Enhancements

Milestone Type	Milestone Name	Dates	Status
Board Approval	Board briefing/approval	May 17, 2023	✓
External BRS	Publish External BRS v1.0	Jul 25, 2023	✓
	Publish External BRS v1.1	Dec 22, 2023	✓
	Publish External BRS v1.2	Apr 24, 2024	✓
	Publish External BRS v1.3	Aug 02, 2024	✓
Settlements Config Guides	Post Draft Config Guides - First set of charge codes	Jan 16, 2024	✓
	Post Draft Config Guides - Second set of charge codes	Mar 26, 2024	✓
	Post Draft Config Guides - Third set of charge codes & updates to First & Second sets	Aug 26, 2024	✓
Tech Spec	Publish Technical Specifications - OASIS	Nov 09, 2023	✓
	Publish Technical Specifications – MF	Nov 21, 2023	✓
	Publish MF GRDT v19.0 DRAFT		
	Publish Technical Specifications - SIBR	Nov 28, 2023	✓
	SIBR/BSAP/RCBSAP Rules Release Notes	Mar 05, 2024	✓
	SIBR SC User Guide	Mar 05, 2024	✓
Tariff	Publish Technical Specifications - CMRI	Dec 15, 2023	✓
	First Draft Tariff Posting	Jun 02, 2023	✓
	Second Draft Tariff Posting	Jul 11, 2023	✓
	FERC Filing	Aug 22, 2023	✓
	Receive FERC order – Acceptance in part	Dec 20, 2023	✓
	Draft Compliance Filing Posting	Feb 05, 2024	✓
	Compliance Filing	Feb 16, 2024	✓
BPMs	Business Practice Summary (New)	Apr 25, 2024	✓
	Post Draft BPM – Market Instruments	Apr 15, 2025	
	Post Draft BPM – Market Operations	Apr 15, 2025	
	Post Draft BPM – Settlements and Billing	Apr 15, 2025	
	Post Draft BPM – Definitions and Acronyms	Apr 15, 2025	
Implementation meeting	Configurable Parameters Implementation Working Group	Aug 07, 2024	✓
External Training	External User Training	May 08, 2025	
Market Sim	Fall 2025 Release Market Simulation Plan	Jan 24, 2024	✓
	Market Sim Scenarios	Aug 04, 2023	✓
	Market Sim Window	Jun 02, 2025 - Aug 22, 2025	
Production Deployment	Day Ahead Market Enhancements (Inactive)	Oct 01, 2025	
Production Activation	Day Ahead Market Enhancements (Financially Binding)	May 01, 2026	

Extended Day Ahead Market (EDAM) Implementation

Project Information	Details/Date
High Level Business Problem or Need	<p>The purpose of this initiative is to create a comprehensive extended day-ahead market that extends over multiple balancing authority areas (BAAs) participating in the Western Energy Imbalance Market (WEIM). EDAM is a voluntary day-ahead electricity market with the potential to deliver significant economic, environmental, and reliability benefits for participants across the West. EDAM will more efficiently and effectively integrate renewable resources and address the significant operational challenges presented by a rapidly changing resource mix, emerging technologies, and the impacts of climate change. EDAM will enable procurement of robust supply and flexible capacity that will position EDAM participants to effectively address changes in conditions from day-ahead to real-time, improving their response to potential reliability challenges. EDAM builds upon the proven ability of the WEIM to increase regional coordination, support state policy goals, and cost effectively meet demand.</p>
High Level Project Scope	<p>The EDAM design leverages existing features of the ISO day-ahead market that are common in other day-ahead markets across the country. The design also considers enhancements proposed in contemporaneous stakeholder initiatives that will harness flexibility across the larger footprint by incorporating an imbalance reserve product that will enhance price formation. EDAM introduces new products, imbalance reserve and reliability capacity, as well as new penalties, and a Resource Sufficiency Evaluation (RSE) surcharge.</p>
BPM Changes	<p>Definitions and Acronyms Energy Imbalance Market (EIM) Market Instruments Market Operations Settlements and Billing EDAM</p>
Impacted Systems	<p>MF, ALFS, ALFS-SOA, SIBR, RTSI, RTBS, BSAP, DAM (IFM and RUC), DA-RSE (new), RTM (RTPD and RTD), STUC, MPM, ITS, BARC, GHG Pass (new), Settlements, CMRI, OASIS, ADS, WebOMS, Internal ISO Systems</p>

Extended Day Ahead Market (EDAM) Implementation

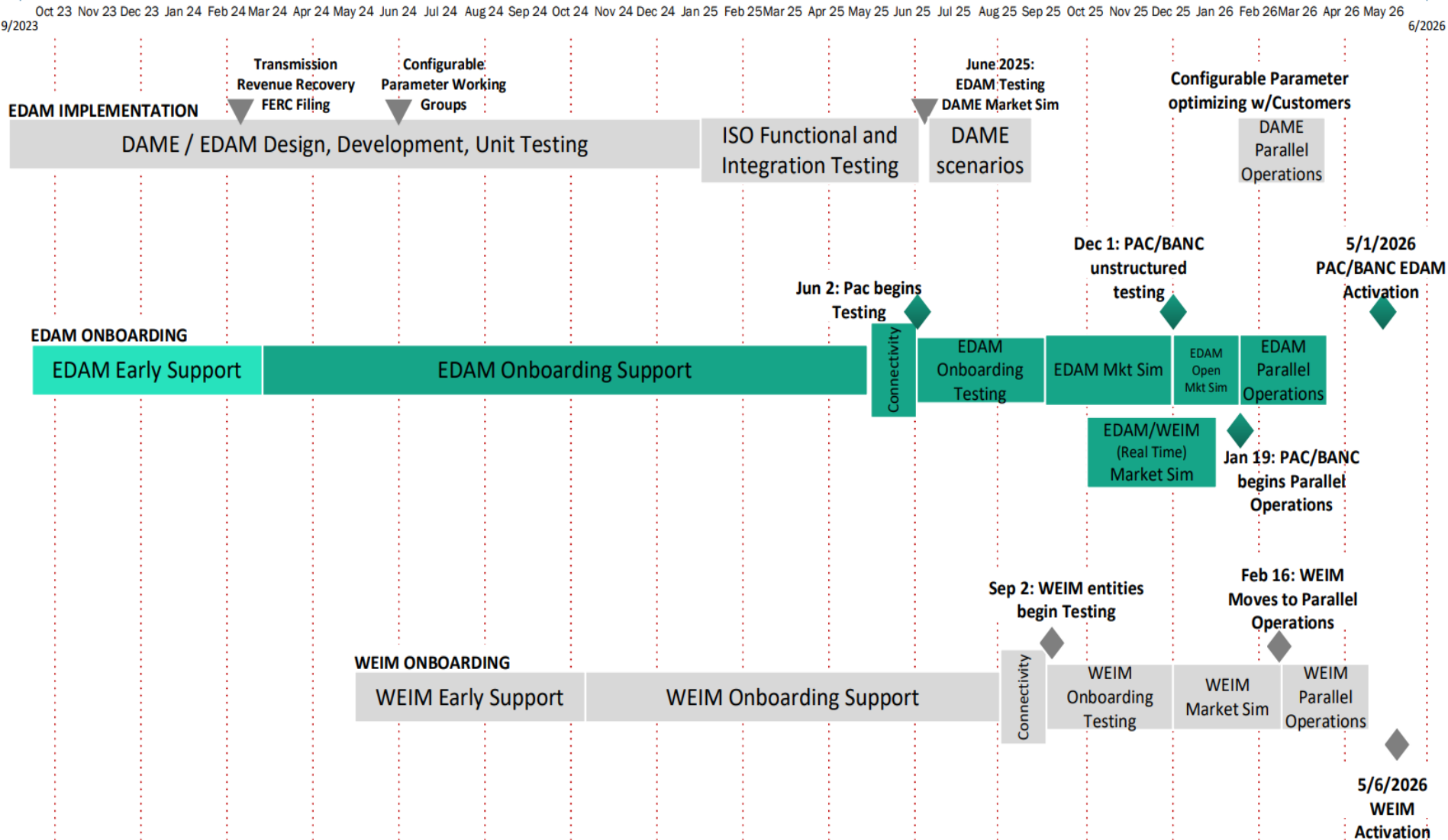
Milestone Type	Milestone Name	Dates	Status
Board Approval	Board approval	Feb 01, 2023	✓
External BRS	Publish External BRS v1.0	Aug 02, 2023	✓
	Publish External BRS v1.1	Dec 22, 2023	✓
	Publish External BRS v1.2	Apr 25, 2024	✓
	Publish External BRS v1.3	Aug 05, 2024	✓
Tariff	Draft Tariff Language	Mar 30, 2023	✓
	Revised Draft Tariff Language	Jun 08, 2023	✓
	Updated Revised Draft Tariff Language	Jul 25, 2023	✓
	FERC Filing	Aug 22, 2023	✓
	Receive FERC order – Acceptance in part	Dec 20, 2023	✓
	Requested effective date for tariff changes for EDAM agreements and onboarding provisions	Dec 21, 2023	✓
	Draft Compliance Filing Posting	Feb 05, 2024	✓
	Compliance Filing; accepted Apr 30, 2024	Feb 16, 2024	✓
	Filing for EDAM access charge	Apr 12, 2024	✓
Settlements Config Guides	Receive FERC order accepting EDAM Access Charge Design (EDAM Tariff fully approved)	Jun 11, 2024	✓
	Post Draft Config Guides - First set of charge codes	Jan 16, 2024	✓
	Post Draft Config Guides - Second set of charge codes	Mar 26, 2024	✓
	Post Draft Config Guides - Third set of charge codes & updates to First & Second sets	Aug 26, 2024	✓
Tech Spec	Publish Technical Specifications – RTSI	Dec 5, 2023	✓
	Publish Technical Specifications – MF	Jan 4, 2024	✓
	Publish Technical Specifications – SIBR	Mar 21, 2024	✓
	Publish Technical Specifications – OASIS	Apr 12, 2024	✓
	Publish Technical Specifications – CMRI	Apr 12, 2024	✓
	Publish Technical Specifications – PLC	Jul 19, 2024	✓
	Publish Technical Specifications – ALFS	NA	
	Publish Technical Specifications – OMS	NA	
BPMs	Business Practice Summary	Jul 10, 2024	✓
	Post Draft BPM – Energy Imbalance Market (EIM)		
	Post Draft BPM – Market Instruments		
	Post Draft BPM – Market Operations	TBD	
	Post Draft BPM – Settlements and Billing		
	Post Draft BPM – EDAM		
Market Sim	Post Draft BPM – Definitions and Acronyms		
	Fall 2025 Release Market Simulation Plan	Jan 24, 2024	✓
	Market Sim Scenarios	Jan 29, 2024	✓
	Market Sim Scenarios v1.1	Feb 15, 2024	✓
Parallel Operations	EDAM Onboarding Market Sim	Sep 01, 2025 – Jan 16, 2026	
	Draft Parallel Operations Plan	Apr 15, 2024	✓
Production	EDAM Production Deployment - Inactive	Oct 01, 2025	
	EDAM Onboarding (Financially Binding) & Activation (PacifiCorp & BANC)	May 01, 2026	
	EDAM Onboarding – PGE	Fall 2026	

EDAM & DAME Activation May 1, 2026

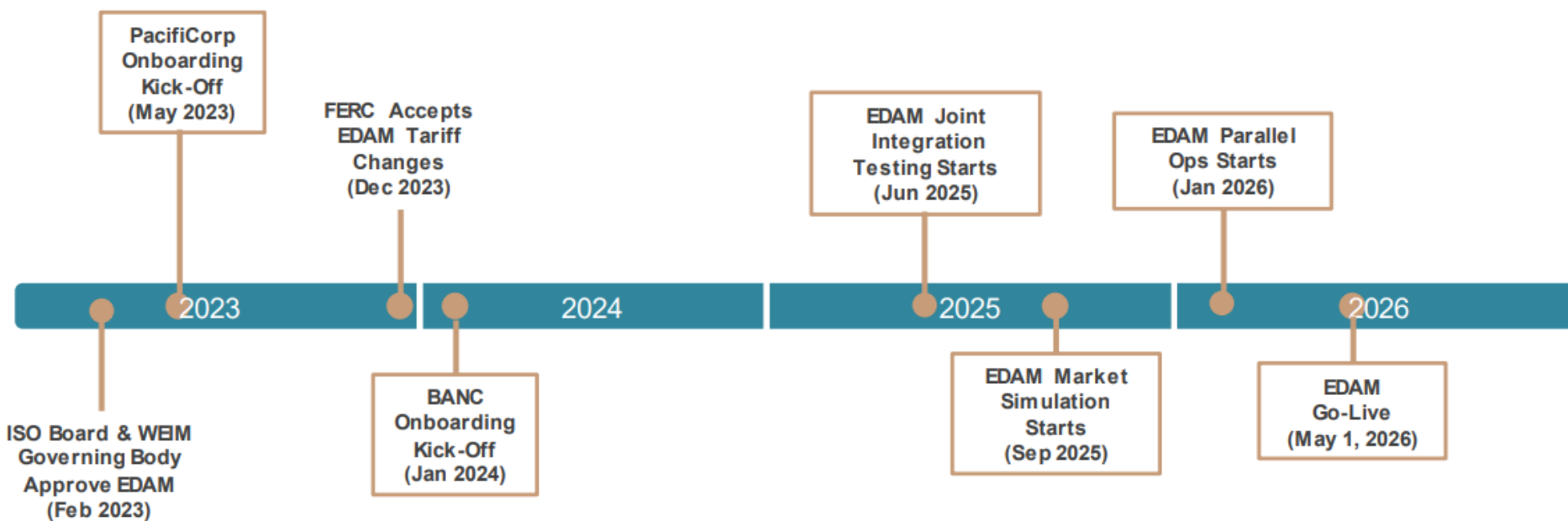
1/24/2023

EDAM Onboarding Timeline (w/implementation and WEIM) - *proposed*

9/2/2023 - 6/1/2026



Key EDAM Onboarding Milestones to Date



Spring 2026 – EDAM ISO BAA Participation Rules

Project Information	Details/Date
Policy Scope	<p>The purpose of this initiative was to define the unique aspects of how the ISO Balancing Authority Area (BAA) will participate in the Extended Day-Ahead Market (EDAM). The policy addressed how to settle Transfer Resources and Transfer Revenue, the criteria to set ISO BAA's net EDAM Export Transfer constraint, how to allocate ISO BAA resource sufficiency evaluation (RSE) failure surcharges and revenues, and the process for calculating historical revenue recovery amounts.</p> <p>Previously labeled EDAM ISO BAA participation Rules Track A1, or Track A. Going forward label to be simply EDAM ISO BAA Participation Rules</p>
Tariff Changes	<p>FERC Filing ER24-379 – Sections 11, 26, and 27</p> <p>Approved Tariff Changes:</p> <ul style="list-style-type: none"> ➤ To allow for the settlement of all Transfer System Resources in the CAISO BA. ➤ To allow for the settlement of EDAM Transfer revenue allocated to the CAISO BA, inclusive of EDAM Transfer revenue and EIM Transfer revenue ➤ To allow the CAISO BA to enable the Net EDAM Export Transfer Constraint, a voluntary, and optional, mechanism that each EDAM Balancing Authority may enable to preserve sufficient supply to meet its projected needs, while managing reliability based on conditions and circumstances anticipated within its balancing area. ➤ To allow an interim solution for the CAISO to distribute all CAISO BA revenues and surcharges for the EDAM RSE Failure Surcharge. <p>Unapproved Tariff Changes (pending refiling):</p> <ul style="list-style-type: none"> ➤ To set forth the calculations for the EDAM Historical Revenue Recovery amounts for transmission owners in the CAISO BA – referenced as “EDAM Access Charge for CAISO BAA”
High Level Project Scope	Based on current approved Tariff changes
Impacted Systems	Internal ISO Systems, Settlement configuration changes

Spring 2026 – EDAM ISO BAA Participation Rules

Milestone Type	Milestone Name	Dates	Status
Policy	Track A1 Final Proposal	Aug 31, 2023	✓
Board Approval	Board approval	Sep 21, 2023	✓
Tariff	Draft Tariff Language	Aug 25, 2023	✓
	Revised Tariff Language	Oct 11, 2023	✓
	FERC Filing (CAISO BA Participation in EDAM ER24-379)	Nov 13, 2023	✓
	FERC Order (DAME/EDAM in ER23-2686): <i>didn't accept EDAM Access Charge</i>	Dec 20, 2023	✓
	FERC Order (CAISO BA Participation in EDAM ER24-379): <i>acceptance in part, mooted</i> EDAM Access Charge for CAISO BAA	Mar 7, 2024	✓
	FERC Filing (EDAM Access Charge ER24-1746)	Apr 12, 2024	✓
	FERC Order (EDAM Access Charge ER24-1746): <i>acceptance</i>	Jun 11, 2024	✓
External BRS	<u>EDAM Access Charge for CAISO BAA</u>		
	Draft Tariff Language	Sep 30, 2024	
	Stakeholder Meeting	Oct 7, 2024	
	FERC Filing	Nov 19, 2024	
	Publish External BRS	Jun 18, 2024	
Settlement Config Guides	Publish External BRS v1.2: <i>Clarifications, corrections, adding market sim requirements</i>	Sep 17, 2024	
	BRS comment period open thru Oct 09, 2024 05:00 pm (PT)	Open	
	Publish External BRS v1.n: <i>EDAM Access Charge for CAISO BAA tariff dependency</i>	TBD	
	Post Draft Config Guides - second set of charge codes - <i>revised on Aug 26, 2024</i>	Mar 26, 2024	✓
Tech Spec	Part of EDAM framework (if applicable)		
	Post Draft Config Guides - third set of charge codes: <i>includes anticipated logic re: EDAM Access Charge for CAISO BAA</i>	Aug 23, 2024	✓
BPMs	Post Draft Config Guide Revisions – <i>additional modifications if needed for EDAM Access Charge for CAISO BAA tariff and BRS</i>	TBD	✓
External Training	Training	TBD	
Market Sim	Fall 2025 Release Market Simulation Plan v1.1	TBD	
	Market Sim Scenarios	TBD	
	EDAM Onboarding Market Sim	Sep 01, 2025 – Jan 16, 2026	
Production	EDAM Production Deployment - Inactive	Oct 01, 2025	
	EDAM Onboarding (Financially Binding) & Activation	May 01, 2026	

Spring 2026 – WEIM BHE Montana

Project Info	Details/Date
Application Software Changes	System modifications as needed to accommodate any unique Berkshire Hathaway Energy Montana needs to support their WEIM onboarding.
BPM Changes	WEIM BPM will be updated if needed to reflect changes identified during the onboarding and as required to reflect the unique processes of Berkshire Hathaway Energy Montana.
Market Simulation	December 2025 thru January 2026
Parallel Operations	February 2026 thru March 2026

Milestone Type	Milestone Name	Dates
Market Sim	Market Sim Window	Dec 2025 thru Jan 2026
Parallel Operations	Parallel Operations	Feb 2026 thru Mar 2026
Tariff	File Implementation Agreement FERC acceptance of Implementation Agreement File Readiness Certification	✓ Mar 27, 2024 ✓ May 17, 2024 Mar 2026
Production	Activation	May 2026

Future Releases

Subscriber Participating Transmission Ownership Model

Project Information	Details/Date
High Level Business Problem or Need	<p>The Subscriber Participating Transmission Owner (Subscriber PTO) model is a new transmission development option available for transmission projects with generation development opportunities outside the CAISO balancing area to bring generation to meet California's policy initiatives. The model specifically supports CPUC generation portfolios required by the memorandum of understanding with the California State agencies and the CAISO. Accordingly, the Subscriber PTO model allows for additional transmission to be developed to connect the CAISO BAA with out-of-state generation that currently lack the necessary transmission to provide electricity to the CAISO BAA. The Subscriber PTO model thereby provides an option for projects not chosen in the transmission planning process to solicit Subscribers who then pay for the project (generation and transmission) and join the CAISO balancing area.</p> <p>The new Subscriber PTO Model enables a subscriber PTO to develop its project without recovering the costs for its project through a transmission revenue requirement. At the same time, those who have paid for the project, <i>i.e.</i>, the subscribers, are exempt from congestion and other related costs on the subscriber PTO line because the subscribers will receive similar treatment and priority to existing contract rights holders (ETCs). Additionally, the Subscriber PTO model provides a mechanism for subscribers that financed the project and associated network upgrades the ability to receive reimbursement for those costs from non-subscribers that use the Subscriber PTO transmission facilities.</p>
High Level Project Scope	<ul style="list-style-type: none"> • Develop Subscriber PTO Model: account for a new PTO model that does not increase the Transmission Revenue Requirement (TRR) of the Transmission Access Charge / Wheeling Access Charge (TAC/WAC)) and provides those who funded the project ("subscribers") with Existing Transmission Contract (ETC) designation to account for their rights on the CAISO controlled grid • Revise the TAC allocation process to fund the non-Subscriber usage payment amount ahead of allocation to the non-load serving PTOs • Charge non-subscribers for use of the Subscriber PTO line the applicable non-subscriber usage rate (\$/MWh) • Create a mechanism that allows for the payment to the Subscriber PTO for non-subscriber usage of the Subscriber PTO transmission facility: <ul style="list-style-type: none"> ○ Compare the Non-Subscriber Usage rate(s) (\$/MWh rate approved by FERC) to the TAC rate and pay the Subscriber PTO the lower of the two values ○ Create a flag to denote when the Non-Subscriber Usage Rate is higher than the TAC rate and publish results in the ISO bill determinant file <ul style="list-style-type: none"> ▪ Indicate monthly gross exports and imports for Non-Subscriber usage of the Subscriber PTO transmission line ○ Indicate the TAC rate and the Non-Subscriber Usage Rate(s) as part of the Settlements TAC reports • Develop methodology to address economic BAA to BAA transfers at new scheduling points created by Subscriber PTO transmission lines

Subscriber Participating Transmission Ownership Model

System	High Level Changes
BPM Changes	<ul style="list-style-type: none"> • Definitions and Acronyms • Generator Interconnection and Deliverability Allocation Procedures • Market Instruments • Market Operations • Reliability Requirements • Settlements & Billing • Transmission Planning Process
Tariff Changes	<ul style="list-style-type: none"> • Section 4: Roles and Responsibilities • Section 16: Existing Contracts • Section 24: Comprehensive Transmission Planning Process • Section 25: Interconnection of Generating Units and Facilities • Section 26: Transmission Rates and Charges • Appendix A: Master Definition Supplement • Appendix F: Rate Schedules • Appendix DD: Generator Interconnection Deliverability Allocation Procedures
Impacted Systems	
MF	<ul style="list-style-type: none"> • Develop Subscriber PTO model: including new participant type, new TAC area, new UDC, new WAC rules, and mapping
CIRA	<ul style="list-style-type: none"> • Identify resources subject to MIC and establish MIC at Sub PTO scheduling points/interties • Define RA obligation
SIBR	<ul style="list-style-type: none"> • Receive ETC designation and support bidding rules for subscriber generating resources (existing functionality)
ITS	<ul style="list-style-type: none"> • Consume new tie points and/or ITCs • Add Subscriber PTO loss resource IDs to loss table
IFM/RTM	<ul style="list-style-type: none"> • Calculate ASRS • Consume all hourly MSSC values
Settlements/ DReAMS	<ul style="list-style-type: none"> • Develop new bill determinants • Calculate financial loss return • Apply existing ETC rules • Update TAC/WAC revenue allocation process to include non-subscriber usage rate • Update configuration guides and bill determinants • Exclude Subscriber PTO UDC areas from UFE

Subscriber Participating Transmission Ownership Model

Milestone Type	Milestone Name	Dates	Status
Policy	Straw Proposal	Feb 13, 2023	✓
	Draft Final Proposal	Apr 10, 2023	✓
	Revised Draft Final Proposal	May 15, 2023	✓
	Final Proposal	Jun 22, 2023	✓
Tariff	First Draft Tariff Posting	Jun 22, 2023	✓
	Second Draft Tariff Posting	August 08, 2023	✓
Board Approval	Board approval	July 20, 2023	✓
BRS	Publish BRS v1.0	Jul 26, 2024	✓
Settlements Config Guides	Post Draft Configuration Guide	Yes	
Tech Spec	Publish Technical Specifications	Yes	
BPMs	Post Draft BPM – Definitions and Acronyms	Yes	
	Post Draft BPM – Generator Interconnection and Deliverability Allocation Procedures		
	Post Draft BPM – Market Instruments		
	Post Draft BPM – Market Operations		
	Post Draft BPM – Reliability Requirements		
	Post Draft BPM – Settlements and Billing		
	Post Draft BPM – Transmission Planning Process		
Training	Training	Yes	
Market Sim	Market Sim Scenarios	Yes	
	Market Sim Window	Yes	
Deployment	Production Deployment	TBD	
Activation	Production Activation	TBD	



California ISO

Settlement Upgrade Project

Jul 23, 2024

Settlement Upgrade Project – Overview

- The current settlement system, implemented in 2008 as part of the Market Redesign and Technology Upgrade (MRTU) implementation, is nearing its end of life. The CAISO is upgrading existing settlement applications to approved architectural and information security standards.
- Benefits for our customers include:
 - Improved business efficiency
 - Better gathering and analysis for data and front-end improvements for customers interacting with CAISO Settlement Systems
 - Increased transparency for some calculations
 - Accommodating data processing increases resulting from new market products and an increase in market participants
 - Ability to perform complex settlement calculations

Settlement Upgrade Project – Targeted Goals

- The ISO will work closely with our market participants to ensure seamless transition from e-terra 2.5 to 3.0 configuration output file.
- The ISO will leverage the Settlement User Group and Technical User Group for participants to ask more technical questions.
- The ISO will provide an environment with production-like data allowing customers to validate changes.
- The system will provide settlement outputs in various file formats, allowing all customers to access and use the data in day-to-day operations.
- The ISO will strive to make formulas and inputs transparent to enable market participants to monitor and/or validate settlement results.
- The ISO will provide market participants with an extended market simulation and timely support to the market participants and their vendors during the testing phase.

Settlement Upgrade Project – Targeted Goals (continued)

- From a vendor perspective:
- ISO will provide third party vendors with support during the transition period.
- ISO will provide an extended market simulation and/or parallel statements and invoices during the transition period so vendors can resolve defects on their systems.
- ISO will provide open communications to resolve settlement differences through a customer forum.

Settlement Upgrade Project – Status

- The ISO is reviewing the overall schedule for implementation. The current schedule is colliding with EDAM and DAME implementation.
- In order to allow customers to have the time to focus on the Settlement Upgrade Project, as well as EDAM and DAME, a new schedule will be developed.
- ISO will provide quarterly updates for the implementation for now and will ultimately increase the frequency of updates and the depth of information provided accordingly as we proceed
- The updates will be provided in the Release User Group and Settlement User Group
- To help ensure alignment of our communications between these two (2) forums, this same update was provided in the next Settlement User Group call
- The next Settlement Upgrade Project update will be in October 2024
- For comments or questions, please submit CIDI cases

Stay Informed

Ways to participate in releases

- Visit the Release Planning page
 - <http://www.caiso.com/informed/Pages/ReleasePlanning/Default.aspx>
- Attend meetings
 - Release Users Group (RUG) bi-weekly meetings
 - Initiative status updates
 - System change updates on releases
 - Market Simulation calls
 - Visit the ISO calendar at www.caiso.com for meeting dates and times and add events to your calendar
 - Typically held on Mondays and Thursdays
 - Market Performance and Planning Forum
 - Quarterly review of market performance topics
 - High level discussion of release planning, implementation and new market enhancements

RUG Calendar 2024

January						
S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

February						
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March						
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31						

April						
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28	29	30				

May						
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June						
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30						

July						
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August						
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September						
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29	30					

October						
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November						
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December						
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15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

 CAISO Holiday

 RUG Forum

Contact

- tvo@caiso.com
- release@caiso.com
- CIDI
 - Functional Environment (Area)
 - “Release”
 - “Market Simulation”