



California ISO

Release User Group Agenda

March 21, 2023

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/informed/Pages/MeetingsEvents/UserGroupsRecurringMeetings/Default.aspx#RUG</p>	
<p>http://www.caiso.com/informed/Pages/ReleasePlanning/Default.aspx</p>	

ISO Training Schedule

Training Course	Date and time
ISO Workshop: ISO Settlements (session is full - waitlist only)	March 21 and 22 9am – 12pm PPT
ISO Workshop: Introduction to ISO Markets	August 8 and 9 9am – 12pm PPT
ISO Workshop: Market Transactions	August 15 and 16 9am – 12pm PPT
ISO Workshop: ISO Settlements	August 22 and 23 9am – 12pm PPT

Are you looking for more training?

The ISO Learning Center has computer based training available for lots of topics. Check out the Learning Center: <http://www.caiso.com/participate/Pages/LearningCenter/default.aspx>



Release Plan Summary

WEIM Spring 2023 Release

WEIM 2023 – Avangrid

WEIM 2023 – El Paso Electric

WEIM 2023 – WAPA Desert Southwest Region

2023 Independent

WEIM Enhancements: ETSR UI; April 2023

WEIM Enhancements: Shared Ramping Constraint

Washington WEIM Greenhouse Gas Enhancements

Congestion Revenue Rights System Replacement (2023-2024)

2023 Summer Release

Ancillary Service State of Charge Constraint

Energy Storage Enhancements Phase 1 Track 1 – Ancillary Services & Exceptional Dispatch

WEIM Resource Sufficiency Evaluation Enhancements Phase 2 Track 1

Hybrid Resources Phase 2C - Settlements

Future Release – Tentative, under further assessment

Transmission Service & Market Scheduling Priorities Phase 2

Day-Ahead Market Enhancements

Extended Day-Ahead Market

Congestion Revenue Rights System Replacement (2023-2024)

WEIM Spring 2023 Release

WEIM Spring 2023 – WEIM integrations for Avangrid, El Paso Electric, and WAPA Desert Southwest Region

Project Info	Details/Date
Application Software Changes	System modifications as needed to accommodate any unique Avangrid, El Paso Electric, and WAPA Desert Southwest Region 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 Avangrid, El Paso Electric, and WAPA Desert Southwest Region.
Market Simulation	December 2022 thru January 2023
Parallel Operations	February 2023 thru March 2023

Milestone Type	Milestone Name	Dates		
		Avangrid	El Paso Electric	WAPA Desert Southwest Region
Market Sim	Market Sim Window		✓ Dec 2022 thru Jan 2023	
Parallel Operations	Parallel Operations		Feb 2023 thru Mar 2023	
Tariff	File Readiness Certification		✓ Mar 3, 2023	
Production	Activation		Apr 5, 2023	

Independent 2023 Releases

WEIM Enhancements

Project Information	Details/Date
High Level Business Problem or Need	To collectively address important issues identified by WEIM market participants through Customer Inquiry, Dispute and Information system (CIDI) requests to improve the visibility, functions and features in Energy Imbalance Market (WEIM).
High Level Project Scope	<ul style="list-style-type: none"> BAAOP: ETSR detail screen will be available to BOTH RTMO and WEIMs. (First drop for testing will only be available to RTMO). BAAOP: WEIM shared ramping constraint IS NOT editable through UI.
BPM Changes	WEIM, Market Instruments
Tariff Change	Section 29.4
Impacted Systems	RTM/BAAOP, RTM/Integration

System	High Level Changes
Real-Time Market (RTM)	<p>BAAOP: WEIM shared ramping constraint IS NOT editable through UI. 2023</p> <ul style="list-style-type: none"> Shared ramping capability constraint UI for WEIM entity input parameters for ramp sharing Use in the optimization for each resource based on BAA ramp share parameters
Real-Time Market (RTM)	<p>BAAOP: ETSR detail screen April 2023</p> <ul style="list-style-type: none"> ETSR detail screen will be available to BOTH RTMO and WEIMs. (First drop for testing will only be available to RTMO). New ETSR detail screens Currently in "Coming Soon"

2023 Summer, and Future Releases

Overview - Tentative

Release	Project	BOG	Tariff	BRS	Settlements CG	Settlements Effective Date	Production Activation
2023	Washington WEIM Greenhouse Gas Enhancements	Oct 2022 - Approved	Filed 11/21/22 Accepted 02/10/23 Filed Amendment 03/13/23	02/06/23	N/A	N/A	2023
2023 Summer	Ancillary Service State of Charge Constraint		Filed 09/19/22 Accepted 11/18/22	02/09/23	Tech Doc 2/13 1st Draft CG 3/15 2nd DCG week of 4/3 or 4/10	Retroactive to 09/20/22	2023
	Energy Storage Enhancements Phase 1 Track 1 – Ancillary Services & Exceptional Dispatch	Dec 2022 - Approved	Draft 02/10/23 Revised DTL 03/15/23 File Apr 2023	02/08/23	Tech Doc 2/17 1st Draft CG 3/15 2nd DCG week of 4/3 or 4/10	1st of the month; new CCs	2023
	WEIM Resource Sufficiency Evaluation Enhancements Phase 2 Track 1	Dec 2022 - Approved	Revised 12/12/22 Final Revised DTL 03/07/23 File Mar 2023	02/10/23	Tech Doc 2/17 1st Draft CG 3/15 2nd DCG week of 4/3 or 4/10	1st of the month; new CCs	2023
	Hybrid Resources Phase 2C			01/31/23	Tech Doc 2/13 1st Draft CG 3/15 2nd DCG week of 4/3 or 4/10	1st of the month	2023
Future Release	Transmission Service & Market Scheduling Priorities Phase 2	Feb 2023 - Approved					Summer 2024
	Day-Ahead Market Enhancements	Feb 2023 – Briefing May 17, 2023 – Decision					Fall 2024
	Extended Day-Ahead Market	Feb 2023 – Approved	File Jul 2023				Fall 2024
	On-Boarding						Spring 2025

Overview – System Impacts

Project	ADS	CMRI	Master File	MF RDT	OASIS	RIMS	Settlements	Market	SIBR
WA WEIM GHG Enhancements		X	X	X*	X*		X	X	X
Ancillary Service State of Charge Constraint		X*					X	X	
Energy Storage Enhancements Phase 1 Track 1 AS & ED	X	X*			X		X	X	X
WEIM Resource Sufficiency Evaluation Enhancements Phase 2 Track 1			X		X*		X	X	
Hybrid Resources2C						X (Independent 2023)	X (Summer 2023)		

X* = Technical Specifications

Overview – System Interface Changes

System	Project	UI	API	Data
ADS	ESE1T1	Existing	Existing	New ED Reason Codes: “SOC Hold” and “SOC Charge”
CMRI	ESE1T1	New report to display Exceptional Dispatch Hold State of Charge	New: Retrieve Exceptional Dispatch Hold State of Charge v1 New: Retrieve Exceptional Dispatch Hold State of Charge v1 DocAttach	
CMRI	ASSOCC	New report to display ASSOC binding constraints	New: RetrieveStateOfChargeConstraint_CMRIv1 RetrieveStateOfChargeConstraint_CMRIv1_DocAttach	Data retroactive to 9/20/22
CMRI	WA WEIM GHGE	Existing	Existing	New Attributes/Records to indicate state/include GHG index price for each state
OASIS	ESE1T1	Existing: Energy > System > Operator-Initiated Commitment report	Existing: System > Operator-Initiated Commitment report	New ED type Reason Code: “SOC Hold” and “SOC Charge”
OASIS	RSEE2T1	New: Public Bids > Market Bid Caps	New: Public Bids > Market Bid Caps	
OASIS	RSEE2T1	Existing: Energy > EIM > WEIM RSE Capacity Tests	Existing: Energy > EIM > WEIM RSE Capacity Tests	> Original data publishing is existing system functionality. > Corrected data publishing is new system functionality that will be published on same existing report as original data. >BAA RSE Capacity Test Failure Upward/Downward Capacity (15-min granularity)
OASIS	RSEE2T1	Existing: Energy > Flexible Ramping > Flexible Ramp Requirements Inputs and Outputs (WEIM RSE Flexible Ramping Tests)	Existing: Energy > Flexible Ramping > Flexible Ramp Requirements Inputs and Outputs (WEIM RSE Flexible Ramping Tests)	> Original data publishing is existing system functionality. > Corrected data publishing is new system functionality that will be published on same existing report as original data. >BAA RSE Flexible Ramp Test Failure Upward/Downward Capacity (15-min granularity)
OASIS	WA WEIM GHGE	Existing: Prices > Index Prices > Greenhouse Gas Allowance Index Prices	Existing – Prices > Index Prices > Greenhouse Gas Allowance Index Prices	Add WA GHG index prices, display average of daily WA GHG price indices

Overview – System Interface Changes

System	Project	UI	API	Data
MF	RSEE2T1	Existing	Existing	BAA Assistance Energy Transfer Opt In/Out Flag
MF RDT	RSEE2	Add a new Resource-Specific Capacity Test Failed-to-Start Rule Exemption flag	Add a new Resource-Specific Capacity Test Failed-to-Start Rule Exemption flag	Track 2 for Fall 2023
MF RDT	WA WEIM GHGE	Add a new BAA level attribute to identify BAAs associated with Washington State	SubmitGeneratorRDT_MFRDv5 SubmitGeneratorRDT_MFRDv5_DocAttach RetrieveGeneratorRDT_MFRDv5 RetrieveGeneratorRDT_MFRDv5_DocAttach	Add a new BAA level attribute to identify BAAs associated with Washington State
SIBR	ESE1T1	Existing	Existing	Rules Only
SIBR	WA WEIM GHGE	Existing	Existing	Consume WA GHG adders
RIMS	ESE1T1	Existing: Existing > App & Study > Equipment Configuration tab > Generation as Modeled and Implemented grid	NA	> Pull storage resource MWh from MF > Add new field for calculated MWh > Add new field for storage resource duration in hours
ITS	RSEE2T1	Existing	NA	Exports e-Tagging Submission Requirement > SCs shall be required to e-tag the following as “Firm Provisional Energy (G-FP)”, via utilizing Misc. field: <ul style="list-style-type: none"> o RT economic (RTECON) exports that clear HASP o DA economic (DAECON) exports that clear both RUC and HASP o RTLPT exports that clear HASP o DALPT exports that clear both RUC and HASP > SCs shall be required to e-tag the following as “Firm Energy (G-F)”: <ul style="list-style-type: none"> o RTPT exports that clear HASP o DAPT exports that clear both RUC and HASP

Independent 2023 – WA WEIM GHG Enhancements - Overview

Project Information	Details/Date
High Level Business Problem or Need	<p>Pursuant to State of Washington’s recently revised Clean Air Act and beginning in 2023, Washington (WA) will require reporting of emissions associated with Western Energy Imbalance Market (WEIM) transactions. Emissions reporting is a key element of Washington’s new cap-and-invest program that sets a limit on overall carbon emissions in Washington and requires emitters to obtain allowances equal to their covered GHG emissions.</p> <p>This initiative comprises the first phase of enhancements to support reporting WEIM transactions for emissions year 2022. As reporting rules continue to develop, additional enhancements outside of the scope of this initiative will likely be necessary.</p>
High Level Project Scope	<ul style="list-style-type: none"> • Identify resources within WA State boundary • Update WA State associated resources’ greenhouse gas (GHG) reference levels with dynamic pricing using vendor-provided indices <ul style="list-style-type: none"> • Note: while Tariff stipulates use of static pricing as an interim measure prior to the first Washington allowance auction, due to implementation timing, this is not anticipated to be necessary. This first auction is scheduled for February 28, 2023. • Calculate and publish monthly projected GHG prices for Washington State • Develop reports to support WEIM Entity annual reporting to Washington State
BPM Changes	Energy Imbalance Market (EIM), Market Instruments
Tariff Changes	Sections 30.4.4.5, 30.4.5.2, 39.6.1.6.2, 39.7.1.1.1.1, 39.7.1.1.1.2, 39.7.1.1.1.4
Impacted Systems	MF, Internal System, SIBR, OASIS

Independent 2023 – WA WEIM GHG Enhancements - Overview

System	High Level Changes
MF	<ul style="list-style-type: none"> • New rule to verify that relevant resources within WA State must provide resource specified GHG emission rate • New attribute at the BAA level to identify BAAs associated with Washington State • New attribute to associate resources within WA State with the State of WA to identify resources with GHG obligation <ul style="list-style-type: none"> • Exception: BPA—not subject to WA reporting rule
Internal System	<ul style="list-style-type: none"> • Reference level (commitment costs/DEBs) changes to reflect GHG costs <ul style="list-style-type: none"> • DEBs to include GHG components for generators inside WA State • Update GHG startup cost curve for resources inside WA State • Update Greenhouse Gas Minimum Load Cost Allowance • Differentiate between CA and WA resources • Capture WA GHG price in the resource-specific minimum load and startup GHG adders for the purposes of commitment cost calculations
SIBR	<ul style="list-style-type: none"> • Receive startup GHG adders for the purposes of commitment cost calculations for WA State resources • Confirm GHG curves generated for WEIM resources within WA State are successfully received and processed
OASIS	<ul style="list-style-type: none"> • Add WA GHG index prices to existing GHG Index Price OASIS report <ul style="list-style-type: none"> • Only applicable for dynamic GHG pricing

Independent 2023 – WA WEIM GHG Enhancements

Milestone Type	Milestone Name	Dates	Status
Board Approval	Obtain Board of Governors Approval	Oct 26, 2022	✓
	WEIM Governing Board Approval	Oct 26, 2022	✓
External BRS	Publish External BRS	Feb 06, 2023	✓
Settlements Config Guides	Settlements Config Guides	N/A	
Tech Spec	MFRDT OASIS	Apr 2023	
Tariff	File Tariff ER23-474	Nov 21, 2022	✓
	Tariff Accepted	Feb 10, 2023	✓
	Filed Amendment	Mar 13, 2023	✓
BPMs	Publish Draft Business Practice Manuals – WEIM		
	Publish Draft Business Practice Manuals – Market Instruments		
Market Sim	Market Sim Window	N/A	
Production Activation	WA WEIM GHG Enhancements	2023	

Summer 2023 – Ancillary Services State of Charge Constraint

Project Information	Details/Date
High Level Business Problem or Need	In spring of 2022, the Department of Market Monitoring (DMM) discovered undue market outcomes resulting from regulation down awards to or self-provisions by storage resources for long periods when paired with high energy bids from those resources. Both DMM and the CAISO have concluded that these excess bid cost recovery payments under these conditions cannot be justified by the principles underlying bid cost recovery.
High Level Project Scope	<p>Make storage resources ineligible for Bid Cost Recovery (BCR) uplift for certain market intervals in real time:</p> <ul style="list-style-type: none"> • When the market state of charge (SOC) constraint is binding due to AS Awards causing the market to dispatch resource energy uneconomically. • Retroactively settle relevant intervals (beginning with effective date of 09/20/2022)
BPM Changes	Market Instruments, Market Operations, Settlements and Billing
Tariff Changes	Sections 8.4.3, 8.4.1.1(g), 11.6.6 Note: Tariff filing completed on 09/19/2022
Impacted Systems	RTM, Settlements, CMRI
System	High Level Changes
Real Time Markets (RTM)	Capture RTD/RTPD AS SOC binding constraint shadow price data
Settlements	Design new bill determinants and configurations using the RTD/RTPD AS SOC binding constraint shadow price data for calculation of BCR ineligibility
CAISO Market Results Interface (CMRI)	Develop new external report to inform on AS SOC binding constraint for settlement purposes (resource specific—private report)

Summer 2023 – Ancillary Services State of Charge Constraint

Milestone Type	Milestone Name	Dates	Status
External BRS	Publish External BRS	Feb 09, 2023	✓
Settlements Config Guides	First Draft Technical Documents	Feb 13, 2023	✓
	First Draft Configuration Output File + Draft Release Artifacts	Mar 15, 2023	✓
	Second Draft Configuration Output File	Week of Apr 3, 2023	
Tech Spec	Create and Publish ISO Interface Spec (Tech Specs) – CMRI	Apr 2023	
Tariff	File Tariff ER22-2881	Sep 19, 2022	✓
	Tariff Accepted	Nov 18, 2022	✓
BPMs	Publish Draft Business Practice Manual – Market Instruments		
	Publish Draft Business Practice Manual – Market Operations		
	Publish Draft Business Practice Manual – Settlements & Billing		
Market Sim	Market Sim Window	Yes	
Production	Ancillary Service State of Charge Constraint – Deployment	Summer 2023	
	Ancillary Service State of Charge Constraint – Effective Date Retroactive	Sep 20, 2022	

Summer 2023 – Energy Storage Enhancements Phase 1 Track 1 AS & ED

Project Information	Details
High Level Business Problem or Need	<p>This initiative includes enhancements to reliability processes and tools to better manage energy storage resource state of charge. The initiative also includes day-ahead storage resource DEB updates to better capture storage resource opportunity costs.</p>
High Level Project Scope	<p>Reliability Enhancements</p> <ul style="list-style-type: none"> • Include expected impacts from regulation in State of Charge (SOC) • Require storage to bid energy in the opposite direction of Ancillary Service (AS) awards <ul style="list-style-type: none"> • A resource providing reserves, regulation up, or regulation down must have energy bids to charge/discharge (respectively) • Energy bids must be 50% of AS awards • Include lost opportunity from not generating in storage compensation due to hold Exceptional Dispatch (ED) to hold SOC (i.e. 0 MW ED) <ul style="list-style-type: none"> • Calculate counterfactual energy revenues with and without the SOC hold ED • If prices are below bids counterfactuals will not include discharges • Use actual LMPs (the ISO will not generate counterfactual LMPs) • Include SOC hold ED period through the end of the day in time horizon <p>Reference Level Enhancements</p> <ul style="list-style-type: none"> • Update DA storage resource default energy bid (DEB) to include storage specific opportunity cost
BPM Changes	Market Instruments, Market Operations, Settlements and Billing
Impacted Systems	SIBR, Market, ADS, Settlements, CMRI, OASIS

Summer 2023 – Energy Storage Enhancements Phase 1 Track 1 AS & ED

System	High Level Changes
SIBR	New rules to require storage resources to bid energy in the RT market in the opposite direction of their DA AS awards (applies to all AS awards—spin/non-spin, regulation up, and regulation down)
Market	<ul style="list-style-type: none"> • Update state of charge (SOC) to include Regulation Up and Regulation Down awards (includes multipliers) • Allow operator to enter exceptional dispatch (ED) in the market to allow for EDs of storage resources by SOC in addition to capacity • Update the definition of EDs to allow the operator to enter EDs for storage resources identified with two new Reason Codes under Instruction Type: System Emergency (“SYSEMR”) • Update storage resource DA DEB to include Opportunity Cost
ADS	ADS consumes new ED Reason Codes (“SOC Hold” and “SOC Charge”) applicable to storage resources
Settlements	<ul style="list-style-type: none"> • New rules to align with Tariff settlement language for SOC formula • New inputs for the storage resource ED opportunity cost values • Design and configure new charge code for the allocation of ED SOC uplift • Modify real-time bid cost recovery (BCR) charge code to account for revenue from storage resources ED SOC uplift • Configure No Pay rules and assessment for ED SOC
CMRI	Receive and shall publish the ED SOC information using new UI and API on a new report entitled “Exceptional Dispatch Hold State of Charge”
OASIS	Receive and publish new ED reason Codes (“SOC Hold” and “SOC Charge”) under System Emergency Instruction Type as “Reason” on the Operator Initiated Commitment OASIS Report

Summer 2023 – Energy Storage Enhancements Phase 1 Track 1 AS & ED

Milestone Type	Milestone Name	Dates	Status
Board Approval	Obtain Board of Governors Approval WEIM Governing Board Approval	Dec 14, 2022	✓
External BRS	Post External BRS Post External BRS 1.1	Feb 08, 2023 Mar 20, 2023	✓
Settlements Config Guides	First Draft Technical Documents First Draft Configuration Output File + Draft Release Artifacts Second Draft Configuration Output File	Feb 17, 2023 Mar 15, 2023 Week of Apr 3, 2023	✓ ✓
Tech Spec	Create ISO Interface Spec (Tech spec) – CMRI	Apr 2023	
Tariff	Draft Tariff Language Revised Draft Tariff Language File Tariff Tariff Accepted	Feb 10, 2023 Mar 15, 2023 Apr 2023	✓ ✓
BPMs	Draft BPM changes – Market Instruments Draft BPM changes – Market Operations Draft BPM changes – Settlements & Billing		
Market Sim	Market Sim Window	Yes	
Production Activation	Energy Storage Enhancements Phase 1 Track 1 AS & ED	Summer 2023	

Summer 2023 – WEIM Resource Sufficiency Evaluation Enhancements

Phase 2 Track 1

Project Information	Details
High Level Project Scope	<ul style="list-style-type: none"> • Exclude RTLPT exports and RT economic (RTECON) exports that are associated with latest RTPD run from the following RSE tests for CAISO BAA <ul style="list-style-type: none"> • Capacity Test (Upward and Downward) • Flexible Ramping Sufficiency Upward Test • Facilitate assistance energy transfer between WEIM BAAs into the WEIM BAAs that failed RSE upward test: <ul style="list-style-type: none"> • Added as ex-post surcharge through Settlements. • Market broadcasts needed data to Settlements. • Clarification of Post-HASP Block Hour Low-Priority Export <ul style="list-style-type: none"> • Require DALPT and DA economic (DAECON) export that clears both RUC and HASP, RTLPT and RT economic (RTECON) export that clears HASP be e-tagged as “Firm Provisional Energy (G-FP)”
BPM Changes	Western Energy Imbalance Market, Market Operations, Settlements and Billing
Tariff Changes	Sections 29.11, 29.34
Impacted Systems	MF, Market, Settlements, OASIS

Summer 2023 – WEIM Resource Sufficiency Evaluation Enhancements

Phase 2 Track 1

System	High Level Changes
MF	<ul style="list-style-type: none"> Define Assistance Energy Transfer Opt In/Out flag for each WEIM BAA receipt of assistance energy transfer Make BAA Assistance Energy Transfer Opt In/Out Flag accessible to downstream systems.
Market	<ul style="list-style-type: none"> Exclude RTLPT Exports and RTECON Exports Associated with Latest RTPD Run from RSE Tests for CAISO BAA Only Opted-Out / Opted-Inn Assistance Energy Transfer
Settlements	<ul style="list-style-type: none"> Calculate RT Assistance Energy Transfer Ex-Post Surcharge for Insufficient WEIM BAAs. Allocate Collected RT Assistance Energy Transfer Ex-Post Surcharge Revenue from Insufficient WEIM BAAs to all other WEIM BAAs that Pass Upward RSE Tests Pro Rata to their Net Exports. BAA Sub-Allocation of Charged Assistance Energy Transfer Ex-Post Surcharge Cost to Measured Demand for CISO BAA. <ul style="list-style-type: none"> WEIM Entities sub allocation of the charged assistance energy transfer ex-post surcharge cost will be performed per their defined OATT of these WEIM Entities (outside CAISO’s Settlements system). BAA Sub-Allocation of Received Assistance Energy Transfer Ex-Post Surcharge Revenue to SCs Providing Incremental RT Imbalance Energy for CISO BAA. <ul style="list-style-type: none"> WEIM Entities sub allocation of the received assistance energy transfer ex-post surcharge revenue will be performed per their defined OATT of these WEIM Entities (outside CAISO’s Settlements system).
OASIS	<ul style="list-style-type: none"> Consume RTM Bid Cap from SIBR. Consume corrected RSE Failure Capacities Publish RTM Bid Cap. Publish corrected values of RSE Failure Capacities.

Summer 2023 – WEIM Resource Sufficiency Evaluation Enhancements Phase 2 Track 1

Milestone Type	Milestone Name	Dates	Status
Board Approval	Obtain Board of Governors Approval WEIM Governing Board Approval	Dec 14, 2022	✓
External BRS	Post External BRS	Mar 10, 2023	✓
Settlements Config Guides	First Draft Technical Documents	Feb 17, 2023	✓
	First Draft Configuration Output File + Draft Release Artifacts	Mar 15, 2023	✓
	Second Draft Configuration Output File	Week of Apr 3, 2023	
Tech Spec	Create ISO Interface Spec (Tech spec) – OASIS	Apr 2023	
Tariff	Revised Tariff	Dec 12, 2022	✓
	Final Revised Draft Tariff Language	Mar 07, 2023	✓
BPMs	Draft BPM changes – WEIM Draft BPM changes – Market Operations Draft BPM changes – Settlements & Billing		
Market Sim	Market Sim Window	Yes	
Production Activation	Resource Sufficiency Evaluation Enhancements Phase 2 Track 1	Summer 2023	

Summer 2023 – Hybrid Resources 2C

Project Information	Details/Date
<p>High Level Business Problem or Need</p>	<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>
<p>High Level Project Scope</p>	<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>
<p>BPM Changes</p>	<p>Direct Telemetry, Market Instruments, Metering, Settlements & Billing</p>
<p>Impacted Systems</p>	<p>Summer 2023: Settlements Independent 2023: RIMS Completed: Today’s Outlook, ISO Today Mobile Application, Reports</p>
<p>Requirements</p>	<p>http://www.caiso.com/Documents/BusinessRequirementsSpecifications-HybridResourcesPhase2.pdf</p>

Summer 2023 – Hybrid Resources 2C

Milestone Type	Milestone Name	Dates	Status
External BRS	Publish External BRS	Jan 31, 2023	
Settlements Config Guides	First Draft Technical Documents First Draft Configuration Output File + Draft Release Artifacts Second Draft Configuration Output File	Feb 17, 2023 Mar 15, 2023 Week of Apr 3, 2023	✓ ✓
Tech Spec	Create and Publish ISO Interface Spec (Tech Specs)	N/A	
Market Sim	Market Sim Window - Settlements	Yes	
Production Activation	Hybrid Resources 2C – Settlements Hybrid Resources 2C – RIMS	Summer 2023 Independent 2023	

2023-2024 CRR System Upgrade

2023 – 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>
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.

2023 – 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

2023 – 2024 Congestion Revenue Rights (CRR) Upgrade

Milestone Type	Milestone Name	Dates	Status
Board Approval	Obtain Board of Governors Approval	N/A	
External BRS	Publish External BRS BRS Revision	Nov 16, 2022 TBD	✓
Config Guides	Post Draft Config Guides	Yes	
Tech Spec	Publish Technical Specification	Feb 24, 2023	✓
Deployment Plan	Draft Deployment Plan	TBD	
Training	Training	May – Jun, 2023	
Market Sim	Market Sim	Sep 2023	
Parallel Operations	Parallel Operations	October 2023	
Production	Phase 1 Go-Live	Nov 1, 2023	
Production	Effective Trade Date	Jan 1, 2024	
Production	Phase 2 Go-Live	Apr 3, 2024	
Customer Partnership Group	Next CPG	Mar 22, 2023 Apr 19, 2023	

2023 - 2024 CRR System Upgrade – Get Connected

- CRR External 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**
 - **Next CPG meeting is Wed, 3/22 4/19 @ 10 AM**
 - Monthly
 - Meetings available on the CAISO calendar on www.caiso.com
 - Meeting details and presentation materials are available on www.caiso.com > Stay Informed > Meetings & Events > Customer Partnership Groups

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 independent 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
 - Bi-monthly review of market performance issues
 - High level discussion of release planning, implementation and new market enhancements

What to look for on the calendar...

Calendar of Meetings, Training and Events

Month: February Year: 2018 Calendar View List View Print View

February 2018						
Sun	Mon	Tue	Wed	Thu	Fri	Sat
	5	6	7	8	9	10
	<p>Market Sim →</p> <p>WebCONF: Market Simulation 2:00pm - 3:00pm</p>	<p>Training: Get to Know the ISO - Day 1 9:00am - 4:00pm</p> <p>WebCONF: Imbalance Conformance Enhancements 10:00am - 12:00pm</p> <p>WebCONF: Technical User Group 10:00am - 11:00am</p>	<p>Deadline: Comments - Interconnection Process Enhancements 2018 - Issue Paper and Meeting Discussion 9:00am - 4:00pm</p> <p>Training: Get to Know the ISO - Day 2 9:00am - 4:00pm</p> <p>Meeting: Flexible Resource Adequacy Criteria Must Offer Obligation Phase 2 - Revised Draft Flexible Capacity Framework 10:00am - 4:00pm</p> <p>WebCONF: Market Settlement User Group 10:00am - 11:00am</p>	<p>Meeting: Audit Committee Teleconference (Executive) 3:30pm - 6:30pm</p> <p>Training: Settlements 101 9:00am - 4:00pm</p> <p>Meeting: 2017-2018 Transmission Planning Process 10:00am - 4:00pm</p> <p>Market Sim ←</p> <p>WebCONF: Market Simulation 2:00pm - 3:00pm</p>	<p>Training: Settlements 201 9:00am - 4:00pm</p>	
11	12	13	14	15	16	17
<p>WebCONF: Participating Transmission Owner Per Unit Cost Guides 10:30am - 12:00pm</p> <p>WebCONF: Market Simulation 2:00pm - 3:00pm</p>	<p>Meeting: Congestion Revenue Rights Auction Efficiency 10:00am - 4:00pm</p> <p>WebCONF: Release User Group 10:00am - 11:00am</p> <p>Call: Energy Imbalance Market Governing Body Teleconference (Executive) 11:30am - 12:30pm</p>	<p>Deadline: Submissions - April 2018 Monthly Resource Adequacy and Supply Plans 11:00am - 11:30am</p> <p>Call: Congestion Revenue Rights 11:00am - 11:30am</p> <p>WebCONF: Outage Management System Customer Partnership Group 2:00pm - 3:00pm</p>	<p>Deadline: Comments - Review Transmission Access Charge Structure Straw Proposal and Meeting Discussion 11:00am - 11:30am</p> <p>Call: Board of Governors Teleconference (General) 3:15pm - 6:00pm</p> <p>Call: Board of Governors Teleconference (Executive) 9:00am - 10:00am</p> <p>Call: Market Update 10:15am - 11:00am</p> <p>WebCONF: Market Simulation</p>			

Release Users Group (RUG) →

Next RUG: Apr 4, 2023

Contact for Questions & Agenda Requests: Trang Vo, tvo@caiso.com

Stay connected



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at www.caiso.com

RUG Calendar 2023



2023

Release User Group Meetings

Note: dates subject to change; for the latest information please visit the Calendar on www.caiso.com

January						
Su	Mo	Tu	We	Th	Fr	Sa
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						
Su	Mo	Tu	We	Th	Fr	Sa
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28				

March						
Su	Mo	Tu	We	Th	Fr	Sa
			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	

April						
Su	Mo	Tu	We	Th	Fr	Sa
						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						

May						
Su	Mo	Tu	We	Th	Fr	Sa
	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			

June						
Su	Mo	Tu	We	Th	Fr	Sa
				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	

July						
Su	Mo	Tu	We	Th	Fr	Sa
						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					

August						
Su	Mo	Tu	We	Th	Fr	Sa
		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		

September						
Su	Mo	Tu	We	Th	Fr	Sa
					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

October						
Su	Mo	Tu	We	Th	Fr	Sa
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				

November						
Su	Mo	Tu	We	Th	Fr	Sa
			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		

December						
Su	Mo	Tu	We	Th	Fr	Sa
					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						



Meeting



Holiday



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