



California ISO

Release User Group Agenda

February 7, 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: Introduction to ISO Markets	March 7 and 8 9am – 12pm PPT
ISO Workshop: Market Transactions	March 14 and 15 9am – 12pm PPT
ISO Workshop: ISO Settlements	March 21 and 22 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

Fall 2022 Release

- ✓ Flexible Ramping Product Improvements – Deliverability; Activation 2/1/23
- ✓ Hybrid Resources Phase 2B; Activation 2/1/23

2023 Independent

Operations Systems Improvements Enhancements

WEIM Enhancements: Shared Ramping Constraint; March 2023

WEIM Enhancements: ETSR UI; April 2023

Washington WEIM Greenhouse Gas Enhancements Phase 1

2023 Summer – Tentative, under further assessment

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

Future Release – Tentative, under further assessment

Transmission Service & Market Scheduling Priorities Phase 2

Day-Ahead Market Enhancements

Extended Day-Ahead Market

Release Plan Summary WEIM Spring 2023

WEIM Spring 2023 Release

WEIM 2023 – Avangrid

WEIM 2023 – El Paso Electric

WEIM 2023 – WAPA Desert Southwest Region

2022 Fall Release

Fall 2022 Release Overview

	BRS	Config Guide	Draft Tariff*	BPMs	External Training	Production Activation
Fall 2022 Release						
<u>Hybrid Resources Phase 2B</u>	V1.6 10/19/22 V1.7 1/30/23 - add TG hybrid support, more BRQs designated for 2C	3 rd draft config output 8/30/22 Pre-prod config output file + release artifacts 11/17/22 Prod Deploy 11/30/22	09/17/21 Accepted 11/30/21	2/14/22 9/29/22 Mkt Ops updates Stlmt & Billing: A modification to PRR 1454 is now available as revised PRR 1481 on 11/29/22	8/18/22 9/26/22 – Metering 10/6/22 – Add'l Metering Refresher 01/24/23	02/01/23
<u>FRP Improvements - Deliverability</u>	V1.2 8/22/22	Final Settlement Config Output File 11/30/22	08/31/20 Filed 8/15/22 Accepted 10/18/22	10/24/22 PRR 1473 MO updated 12/14/22; 1474 MI updated 12/13/22	9/07/22 Refresher 01/25/23	02/01/23

Fall 2022 – Hybrid Resources Phases 2-B - Overview

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 project participation (hybrid and co-located resources) in the ISO markets.</p>
<p>High Level Project Scope</p>	<p>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>The Phase 2 project has been split into two separate implementations, phases 2-A and 2-B, to support strategic delivery timing. Phase 2-B information is available under the Spring 2022 release section.</p> <p>Phase 2-A was implemented on December 15, 2021. This phase focuses on implementing Ancillary Services (AS) and High Sustainable Limit (HSL) functionality with a focus on the EMS and IFM/RTM systems.</p> <p>Phase 2-B is scheduled to implement Fall 2022. This project phase focuses on implementing the Hybrid Dynamic Limit functionality, Multiple ACC, along with all remaining project scope to include changes to systems RIMS, Master File, EMS, SIBR, IFM/RTM, OASIS, ALFS, Settlements, MRI-S Metering, CMRI, MPP, Today's Outlook, ISO Today Mobile Application, Monthly Renewables Performance Report, Wind and Solar Real-Time Dispatch Curtailment Report', and the Over Supply Page.</p> <p>External BRS Posting: V1.5 posted on 8/25.</p>
<p>BPM Changes</p>	<p>Direct Telemetry, Market Instruments, Market Operations, Metering, Settlements and Billing</p>
<p>Tariff Changes</p>	<p>Proposed sections 4.18, 34.1.6.3, 30.5.6.1 Sections 27.13, 8.4.1.1(g), 8.4.3, Appendix K, Parts A, B and C, 8.2.3, 8.4.5, 34.7, 11.6.6, 4.8.2, 40.9.2 (b) (D)</p>
<p>Impacted Systems</p>	<p>ALFS, CMRI, Reporting, IFM/RTM, Master File, OASIS, RIMS, Settlements, MRI-S Metering, SIBR, MPP, Today's Outlook, ISO Today Mobile Application, Monthly Renewables Performance Report, Wind and Solar Real-Time Dispatch Curtailment Report, Over Supply Page.</p>

Fall 2022 – Hybrid Resources Phase 2-B

Milestone Type	Milestone Name	Dates	Status
Board Approval	Obtain Board of Governors Approval	Nov 18, 2020	✓
External BRS	BRS v 1.6 (few minor RIMS updates)	Oct 18, 2022	✓
	BRS v 1.7 (add TG hybrid support, more BRQs designated for 2C)	Jan 30, 2022	✓
Config Guides	Post Draft Config Guides	Jan 25, 2022	✓
Tech Spec	Create ISO Interface Spec (Tech spec)	Sep 10, 2021	✓
Tariff	File Tariff	Sep 17, 2021	✓
	Accepted	Nov 30, 2021	✓
Market Sim Scenarios	Post proposed scenarios (Unstructured)	Feb 8, 2022	✓
BPMs	Publish Final Business Practice Manuals for mkt sim	Feb 14, 2022	✓
	Market Operations BPM update	Sep 29, 2022	✓
	Settlements & Billing BPM update	Nov 29, 2022	✓
	Market Operations BPM update	Dec 16, 2022	✓
External Training	Deliver External Training	Aug 18, 2022	✓
	Deliver External Training - Metering Requirements	Sep 26, 2022	✓
	Deliver External Training - Metering Requirements additional discussion	Oct 6, 2022	✓
	Refresher Training	Jan 24, 2023	✓
Market Sim	Market Sim Window	Aug 22, 2022 – Nov 18, 2022	✓
		Start Nov 1, 2022	✓
Production Activation	Hybrid Resources Phase 2-B	Feb 1, 2023	✓
	Hybrid Resources Phase 2-C Today's Outlook	Feb 6, 2023	✓

Fall 2022 – Flexible Ramping Product Improvements Deliverability

Project Information	Details/Date
High Level Project Scope	<p>The scope of the project FRP Deliverability is:</p> <ol style="list-style-type: none"> 1. Procurement of FRP for BAA's that fails the flex test is separate for each BAA. 2. Procurement of FRP for BAA's that pass the flex test for the entire group of BAA. 3. Transmission constraints and transfer limits are enforced in FRP deployment scenarios 4. Distributing the uncertainty requirement in each BAA load and VER locations versus just load 5. Distributing the demand curve surplus variable as a decision variable at load aggregation points (LAP) versus Balancing Authority Areas (BAA) 6. To establish the Locational Marginal Capacity Prices (LMCP) for FRP <p>The scope of the FRP Requirements Enhancements is:</p> <ol style="list-style-type: none"> 1. To enhance the current approach by adopting a quantile regression method to adjust the current flexible ramping product up and down requirement. 2. Calculation of the demand curve.
BPM Changes	Market Instruments, Market Operations
Tariff Change	Yes
Impacted Systems	RTM, Settlements, CMRI/OASIS
System	High Level Changes
Real Time Markets (RTM)	<ul style="list-style-type: none"> • RTM to be impacted based on the change in the FRP procurement systems. • Input data needed for forecasted advisory in the binding interval for RTPD for approx. 40 work days or weekends. • New demand curve calculation is needed.
Settlements	<ul style="list-style-type: none"> • Prices are nodal therefore mechanics for cost allocation pricing to be changed • Nodal FRP prices
CAISO Market Results Interface (CMRI)/ Open Access Same time Information (OASIS)	<ul style="list-style-type: none"> • Publish Resource Nodal prices for the FRP awards (CMRI) • Publish requirements for FRP per BAA and BAA group (OASIS) • Publish surplus by LAP (OASIS) • Publish the nodal FRP prices (OASIS)

Fall 2022 – Flexible Ramping Product Improvements Deliverability

Milestone Type	Milestone Name	Dates	Status
Board Approval	Obtain Board of Governors Approval	Sept 30, 2020	✓
External BRS	Flexible Ramp Product: Deliverability	Jan 28, 2021	✓
	Flexible Ramp Product: Requirements Enhancements	Mar 11, 2022	✓
	BRS 1.1	Aug 1, 2022	✓
	BRS 1.2	Aug 22, 2022	✓
Tariff	File Tariff	Aug 15, 2022	✓
	Tariff Accepted	Oct 18, 2022	✓
BPMs	Publish Draft BPM updates	Oct 24 2022	✓
	PRR Modifications	Dec 13-14, 2022	✓
Config Guides	Post Draft Config Guides	Jun 30, 2022	✓
Tech Spec	Publish Technical Specification – OASIS	July 15, 2022	✓
	Revise Technical Specification – OASIS Flex Ramp Nodal Price Group zip break down to single hour	Jan 17, 2023	✓
External Training	Deliver External Training	Sep 7, 2022	✓
	Refresher Training	Jan 25, 2023	✓
Market Sim	Market Sim Window	Oct 11, 2022 – Nov 18, 2022	✓
		Start Oct 18, 2022	✓
Production Activation	FRP Deliverability	Feb 1, 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. March 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"

Operations Systems Improvements 2021/2022 Enhancements

Project Information	Description										
High Level Business Problem or Need	<ul style="list-style-type: none"> The goal of this project is to deliver timely systems improvements that support efficient day-to-day work and operations. The project aims to 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 functionality enhancements. A list of specific high priority improvements will be the scope for the project. A number of these improvements may have an impact on the way in which customers interact with CAISO systems. 										
Affected Systems	<ul style="list-style-type: none"> A preliminary list of enhancements is included on the next slide. <p>PLEASE NOTE: This list may change as the project progresses and priority are factored. The goal is to provide advanced notification of changes whenever possible</p>										
Schedule	<table border="0"> <tr> <td>• External BRS</td> <td>2022 External BRS v1.0 Published 5/3</td> </tr> <tr> <td>•</td> <td>UPDATE v1.1 Published 8/12</td> </tr> <tr> <td>• MAP Stage Availability</td> <td>Multiple*</td> </tr> <tr> <td>• Customer Training</td> <td>Multiple*</td> </tr> <tr> <td>• PROD</td> <td>Multiple*</td> </tr> </table> <p>* The plans for testing and deployment will vary between improvement items as these may be released individually or in groups. More information on specific improvements will be made available as planning and schedules are solidified.</p>	• External BRS	2022 External BRS v1.0 Published 5/3	•	UPDATE v1.1 Published 8/12	• MAP Stage Availability	Multiple*	• Customer Training	Multiple*	• PROD	Multiple*
• External BRS	2022 External BRS v1.0 Published 5/3										
•	UPDATE v1.1 Published 8/12										
• MAP Stage Availability	Multiple*										
• Customer Training	Multiple*										
• PROD	Multiple*										

Operations Systems Improvements Projects

List of Proposed Improvements*

*PLEASE NOTE: This list may change as the project progresses and priorities are factored. The goal is to provide advanced notification of changes whenever possible

2023

System	Summary Description	
Market	Modify Unit Details UI	Outreach/Release Note – 2023 PROD - 2023

2023 Summer, and Future Releases

Tentative, under further assessment

Overview - Tentative

Release	Project	BOG	Draft Tariff	BRS	Settlements CG	Production Activation
2023	Washington WEIM Greenhouse Gas Enhancements Phase 1	Oct 2022 - Approved	10/22/22	02/06/23	N/A	2023
2023 Summer	Ancillary Service State of Charge Constraint		Filed 09/19/22 Accepted 11/18/22	02/10/23 – DRAFT	Tech Doc 2/13 1 st Draft 2/27	2023
	Energy Storage Enhancements Phase 1 Track 1 – Ancillary Services & Exceptional Dispatch	Dec 2022 - Approved		02/10/23 – DRAFT	Tech Doc 2/20 1 st Draft 2/27	2023
	WEIM Resource Sufficiency Evaluation Enhancements Phase 2 Track 1	Dec 2022 - Approved	Revised 12/12/22	02/10/23	Tech Doc 2/20 1 st Draft 2/27	2023
	Hybrid Resources Phase 2C				Tech Doc 2/13 1 st Draft 2/27	2023
Future Release	Transmission Service & Market Scheduling Priorities Phase 2	Feb 2023 - Approved				Summer 2024
	Day-Ahead Market Enhancements	Feb 2023 – Briefing Decision Upcoming				Fall 2024
	Extended Day-Ahead Market On-Boarding	Feb 2023 – Approved				Fall 2024 Spring 2025

Overview – System Impacts

Project	ADS	CMRI	Master File	OASIS	RIMS	Settlements	Market	SIBR
WA WEIM GHG Enhancements			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	X
WEIM Resource Sufficiency Evaluation Enhancements Phase 2 Track 1			X	X		X	X	
Hybrid Resources2C					X	X		

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

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 – Energy Storage Enhancements Phase 1 Track 1 AS & ED

Project Information	Details
High Level Business Problem or Need	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.
High Level Project Scope	<p>Scope 1: 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 regulation up/regulation down must have energy bids to charge/discharge (respectively) • Energy bids must be 50% of AS awards • Allow for Exceptional Dispatches (EDs) to be issued for storage resources to hold SOC <ul style="list-style-type: none"> • Storage may receive a traditional ED or an SOC ED, but not both • Include lost opportunity from not generating due to hold SOC ED in storage compensation <ul style="list-style-type: none"> • Calculate counterfactual energy revenues with and without the hold SOC ED • If prices are below bids counterfactuals will not include discharges • Use actual LMPs (the ISO will not generate counterfactual LMPs) • Include hold SOC ED period through the end of the day in time horizon • Different Settlement process than traditional ED <p>Scope 2: 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	RIMS, SIBR, Market, ADS, Settlements, CMRI, OASIS

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 – 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>RIMS, Settlements, Today’s Outlook, ISO Today Mobile Application, Reports</p>
<p>Requirements</p>	<p>http://www.caiso.com/Documents/BusinessRequirementsSpecifications-HybridResourcesPhase2.pdf</p>

CRR System Upgrade

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.

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

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	N/A	
Config Guides	Post Draft Config Guides	N/A	
Tech Spec	Publish Technical Specification	Draft 11/5/21	✓
Tariff	File Tariff	N/A	
Customer Partnership Group	Next CPG	Feb 22, 2023	

CRR System Upgrade – Get Connected

- CRR Customer 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, 2/22 @ 10 AM**

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 2023		
Production	Activation	Apr 5, 2023		

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

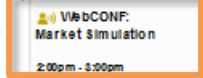
What to look for on the calendar...

Calendar of Meetings, Training and Events

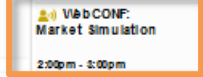
Month: February Year: 2018 Calendar View List View Print View

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

Market Sim



Market Sim



Release Users Group (RUG)

