

Release User Group Agenda

November 17, 2020

10:00 a.m.-11:00 a.m. (Pacific Time)

Web Conference Information	Conference Call Information
Web Address: https://caiso.webex.com/meet/RUG Meeting Number: 960 941 245	
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.	Dial-in Number: 866-528-2256 International Dial-in: 216-706-7052 Access Code: 291 426 5

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.

Release User Group Agenda

November 17, 2020

10:00 a.m. – 11:00 a.m. (Pacific Time)

Time	Topic	Facilitator
10:00 – 10:05	Agenda & ISO Roll call	Adrian Chiosea
10:05 – 10:45	Release Plan	Trang Vo Janet Morris Jeremy Malekos Rashele Wiltzius



The ISO offers innovative training programs

Date	Training courses and workshops
January 14, 2021	Welcome to the ISO (Webinar)
March 2-3, 2021 (9am – 12pm)	Intro to ISO Markets (Virtual Workshop)
March 9-10, 2021 (9am – 12pm)	Market Transactions (Virtual Workshop)
March 16-17, 2021 (9am – 12pm)	ISO Settlements (Virtual Workshop)
	Email us at CustomerReadiness@caiso.com for any training or readiness related questions



You can now find the following new initiatives training courses on the learning center web page:

S S	
ADS Training Part 1 & 2	• ESDER 3B
DOT Tariff Clarification	• FERC 841
Excess Behind the Meter Production	Market Settlements Timeline Transformation
Flexible Ramping Product Refinements	Intertie Deviation Settlement



CustomerReadiness@caiso.com

Computer Based Training

There are more than 20 computer based training modules on the ISO website covering: Markets and Operations, Settlements and Metering, Reference Materials, Western Energy Imbalance Market and more!

Visit our **Learning Center** web page to access our training calendar, register for courses and find other informational resources:

http://www.caiso.com/particip ate/Pages/LearningCenter/de fault.aspx



Release Plan Summary: 2020

Independent 2020

Activation - Dec

- Dec 1: Hybrid Resources Phase 1
- Dec 10: Aliso Canyon Phase 5
- Dec 15: Energy Imbalance Market (EIM) Enhancements 2020
- Slow Demand Response

Activation- Jan 2021

- Jan 1, 2021
 - Nodal Pricing Model Advisory Service for PacifiCorp Settlements Effective Date
 - Intertie Deviation Settlement
 - EIM Enhancements Symmetrical Wheeling
 - Q4 Winter Release Settlements
- Jan 13, 2021 Commitment Costs and Default Energy Bid Enhancements Phase 1

Fall 2020

Activation on Jan 1, 2021

- Excess Behind the Meter Production
- Market Settlement Timeline Transformation

Activation on Dec 16

- Dispatch Operating Target Tariff Clarifications
- ADS new features: DOTT, Unannounced AS Test, RTCD Commitment, Follow DOT Flag, Operating Instructions



Release Plan Summary: 2021 - 2022

Independent 2021

- System Market Power Mitigation Phase 1 (BOG Nov 2020 and implementation prior to Q3, 2021)
- Variable operations and maintenance cost review (BOG Nov 2020)
- Real-Time Settlement Review (BOG Dec 2020)
- FERC Order 831 Import Bidding and Market Parameters (BOG Sept 2020)
- Pseudo Ties for Shared Resources (JOU Modeling) (BOG Nov 2020)

Spring 2021

- Energy Imbalance Market (EIM) 2021 BANC Ph 2/WAPA
- Energy Imbalance Market (EIM) 2021 Turlock Irrigation District
- Energy Imbalance Market (EIM) 2021 Public Service Company of New Mexico
- Energy Imbalance Market (EIM) 2021 North-Western Energy
- Energy Imbalance Market (EIM) 2021 Los Angeles Dept. of Water and Power

Fall 2021 – tentative, subject to impact assessment

- Resource Adequacy (RA) Enhancements (BOG Q1 2021)
- Energy Storage and Distributed Energy Resources Phase 4 (BOG Oct 2020)
- Flexible Ramping Product Refinements (BOG Oct 2020)
- Hybrid Resources Phase 2 (BOG Nov 2020)
- Western EIM Sub-Entity Scheduling Coordinator Role

Spring 2022

- Energy Imbalance Market (EIM) 2022 Avista
- Energy Imbalance Market (EIM) 2022 Tucson Electric Power
- Energy Imbalance Market (EIM) 2022 Tacoma Power
- Energy Imbalance Market (EIM) 2022 Bonneville Power Administration
- Energy Imbalance Market (EIM) 2022 Xcel Energy Colorado

Fall 2023

- Day Ahead Market Enhancements (BOG 2021)
- Extend DA Market (BOG 2021)



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Release Schedule 2020 - 2021

Date of Data Refresh: 11/13/2020

California ISO	
Market Simulation CA ISO Holiday External Testing Deployment Week	
IAP Stage Environment Window	
EIM Enhancements Symmetrical Wheeling - Market Sim	EIM Enhancements Symmetrical Wheeling - Market Sim (11/17-12/03)
EIM Enhancements 2020 (CMRI) - Market Sim	EIM Enhancements 2020 - Market Sim (11/23-12/04)
CCDEBE Phase 1 (New SIBR Rules) - Market Sim	CCDEBE Phase 1 - Market Sim (12/01-12/15)
Intertie Deviation Settlement - Market Sim	Intertie Deviation Settlement - Market Sim (12/01-12/18)
EIM - BANC Phase 2 / WAPA - Market Sim	EIM - BANC Phase 2 / WAPA - Market Sim (11/03-01/31)
EIM - Public Service Company of New Mexico - Market Sim	EIM - Public Service Company of New Mexico - Market Sim (11/03-01/31)
EIM - Los Angeles Dept. of Water & Power - Market Sim	EIM - Los Angeles Dept. of Water & Power - Market Sim (11/03-
EIM - Turlock Irrigation District - Market Sim	EIM - Turlock Irrigation District - Market Sim (11/03-01/31)
EIM - North-Western Energy - Market Sim	EIM - North-Western Energy - Market Sim (12/01-01/31)
roduction Environment Window	
Slow Demand Response	Slow Demand Response (12/01)
Hybrid Resources Phase 1	Hybrid Resources Phase 1 (12/01)
Aliso Canyon 5	Aliso Canyon 5 (12/10)
EIM Enhancements 2020	EIM Enhancements 2020 (12/15)
ADS - Activation of New Features	ADS - Activation of New Features (12/16)
Dispatch Operating Target Tariff Clarification	Dispatch Operating Target Tariff Clarification (12/16)
Settlements Q4/Winter Release Effective Trade Date	Settlements Q4/Winter Release Effective Trade Date (01/01)
Excess Behind the Meter Production Activation Effective Trade Date	Excess Behind the Meter Production Activation Effective Trade Date
Market Settlement Timeline Transformation Activation Effective Trade Date	Market Settlement Timeline Transformation Activation Effective Trade Date (01/01)
Intertie Deviation Settlement	Intertie Deviation Settlement (01/01)
EIM Enhancements Symmetrical Wheeling	EIM Enhancements Symmetrical Wheeling (01/01)
CCDEBE Phase 1 Activation	CCDEBE Phase 1 Activation (01/13)
Nodal Pricing Model Settlements Effective Date	Nodal Pricing Model Settlements Effective Date (01/01)
Nodal Pricing Model Activation	Nodal Pricing Model Activation (01/15)
ADS - Decommission of Old ADS client, API v6	ADS - Decommission of Old ADS client, API v6 (02/01)
EIM - BANC Phase 2 / WAPA	EIM - BANC Phase 2 / WAPA (03/25)
EIM - Turlock Irrigation District	EIM - Turlock (rrigation District (03/25)
EIM - Public Service Company of New Mexico	EIM - Public Service Company of New Mexico (04/01)
EIM - Los Angeles Dept. of Water & Power	EIM - Los Angeles Dept. of Water & Power (04/01)
EIM - North-Western Energy	EIM - North-Western Energy (04/01)
http://www.caiso.c	om/Documents/ReleaseSchedule.pdf



2020 Independent



2020 – Hybrid Resources Phase 1

Project Info	Details/Date
	Scope: Phase 1 of the Hybrid Resource Initiative will introduce co-located resources which are two or more resources sharing the same point-of-interconnection to the grid. In cases where the interconnection capacity is below the maximum aggregate output of the co-located resources, an aggregate capability constraint (ACC) will be modeled to ensure the total dispatch of the ACC's associated resources are within its maximum and minimum limits. The markets will support co-located resources for ISO and EIM (participating and non-participating) resources. Hybrid Resources will be introduced at a later time in Phase 2 of the initiative.
Application Software	MasterFile: Enhance to include Co-Located Status, Aggregate Capability Constraint Limits
Changes	IFM, RTM: Enhance market model to optimize energy dispatch for co-located resources behind a generation capability nomogram constraint. Add ISO and EIM Operator display for ACC limit override (allowing reduction of ACC limits for a fixed time). Add energy congestion management logic to create and enforce POI limit constraints.
	Price Corrections Tool (internal to ISO): Price correction logic will reflect the Point-of-Interconnection (POI) pnode LMP as the price for co-located resources.
	ALFS: Time periods where co-located VER are operating with negative supplemental DOT will be excluded from data forecast model training by ISO-provided FSP.
BPM Changes	Definitions and Acronyms, Energy Imbalance Market, Generator Management, Market Instruments, Market Operations, Metering, Reliability Requirement
Tariff Changes	Tariff amendments will define Aggregate Capability Constraint, Co-Located Resources, Point of Interconnection. Phase 1 interim will not support Ancillary Services for co-located resources (will be supported in future).



2020 – Hybrid Resources Phase 1

Milestone Type	Milestone Name	Dates	Status
Board Approval	Obtain Board of Governors Approval	Jul 22, 2020	✓
External BRS	Milestone: Post External BRS	Jul 17, 2020	✓
Config Guides	Post Draft Config. Guides	N/A	
Tech Spec	Create ISO Interface Spec (Tech spec)	N/A	
Tariff	Draft Tariff	Jun 18, 2020	✓
BPMs	Post Draft BPM changes for review	Oct 20, 2020	✓
External Training	Deliver External Training	Oct 20, 2020	✓
Market Sim	Market Sim Window	Oct 26 - Nov 13, 2020	✓
Production Activation	Hybrid Resources Phase 1	Dec 1, 2020	



2020 – Aliso Canyon Ph5

Project Info	Details/Date
	Scope : This project will consider enhancements to the existing Dynamic Competitive Path Assessment (DCPA) and Gas Nomogram capabilities currently in production.
Application Software Changes	IFM/RTN: Formulate and solve the linear programming problem for maximizing the Residual Supplier Index (RSI) for each binding constraint that DCPA is applied. SMDM: Enhance the User Interface to include "All Markets" when the user is defining "Market" within the Curtailment to Process section. SMDM: Creation of error message if the RT curtail type "incremental" or "absolute" are used and total curtailment is left null.
BPM Changes	Managing Full Network ModelMarket Operations
Tariff Changes	• N/A

Milestone Type	Milestone Name	Dates	Status
Board Approval	Obtain Board of Governors Approval - NO BOG Needed	N/A	
External BRS	Post External BRS	May 05, 2020	✓
Config Guides	Post Draft Config Guides	N/A	
Tech Spec	Publish Technical Specifications	N/A	
Tariff	File Tariff	N/A	
BPMs	Post Draft BPM changes	Jul 17, 2020	✓
External Training	Deliver External Training	N/A	
Market Sim	Market Sim Window	N/A	
Production Activation	Aliso Canyon Phase 5	Dec 10, 2020	



2020 - EIM Enhancements 2020

BAAOP

- Allow EIM entity override activation for the contingencies up to 15 in NA contingency list
- Add visibility of other adjacent BAA's ETSR locks and reasons
- Add Static ETSR transfer data to RTD Dispatch Control Display (ETSR tab). Add Static ETSR transfer data to BAAOP ETSR Detail Display (in RTD)
- In RTD/RTPD Dispatch Control display, in Dispatch Instruction Review table, add columns for UP and DN remaining ramp capacity (5/15 minute respectively). In addition, include the sum of these columns at bottom of table. Example Calculation: RTD UP Ramp = MIN(5MinRampRate, [UpperLim-CurrentDispatch].
- Add Supplemental DOT to VER resources to Dispatch Control displays; Detail: In BAAOP RTD/RTPD Dispatch Control, add SUPP DOT column
- Fix the functionality for Manual Dispatches users should be able to utilize MSG functions, such as designating a specific configuration, and users should be able to do commitment override
- EIM Entities have a notification status of market inputs, showing if BAAOP received the latest payload of critical market inputs. Example Critical data submissions: (not all inclusive
- Fix/Improve SVG One Lines. Request to be able to view SE and telemetry values for all substation flows and elements

BSAP

- Add Manual Dispatch information to BSAP Resource Bal Viewer. Add any applicable deviations that used in the test to BSAP BAA Bal Viewer.
- For the Bid Range Capacity Test Results report, Requirement Amount Column needs to publish the true requirement, not just the INCREMENTAL/DECREMENTAL requirement

RTM

- Publish the effective ETSR import and export limits for the market run for RTPD and RTD
- Support Pump Storage for EIM BAAs
- Publish the effective load conforming for the market run for RTPD and RTD for Binding and Advisory
- Publish the data of the MW infeasibility data and ABC Up and Down Dispatches of RTPD/RTD

CMRI

- Display and publish, download the data of the MW infeasibility data and ABC Up and Down Dispatches of RTPD/RTD
- For the Bid Range Capacity Test Results report, Requirement Amount Column needs to display and publish, download the true requirement, not just the INCREMENTAL/DECREMENTAL requirement. Only upstream has changes with regards to the data that is sends to CMRI.
- Display and publish, download the data of the effective load conforming for the market run for RTPD and RTD for
 - 1. CMRI Load Conforming Binding rpt
 - 2. CMRI Load Conforming Advisory rpt



2020 - EIM Enhancements 2020 (cont.)

Milestone Type	Milestone Name	Dates	Status
Board Approval	Obtain Board of Governors Approval	N/A	
External BRS	Milestone: Post External BRS	Mar 24, 2020	✓
Tech Spec	Create ISO Interface Spec (Tech spec) CMRI tech spec 1. MW Infeasibility Report 2. Load Conforming Report 3. Available Balance Capacity (ABC) Up and Down Dispatch Report by Resource 4. Advisory Load Conforming Report	May 29, 2020 May 29, 2020 Jul 1, 2020 Aug 5, 2020	✓ ✓ ✓
Tariff	File Tariff	N/A	
BPMs	Draft BPM changes - Market Instruments – PRR 1281	Aug 31, 2020	✓
External Training	Deliver External Training – coordinate via customer readiness EIM ops mtg	Aug 31, 2020 – Oct 22, 2020	✓
Market Sim	Market Sim Window - unstructured CMRI	Nov 23, 2020 – Dec 4, 2020	
Production Activation	EIM Enhancements 2020	Dec 15, 2020	



2020 - Slow Demand Response

Overview

Following up on Proxy demand resource - resource adequacy clarifications policy initiative

The Master File GRDT (Generator Resource Data Template) will be updated with a new field called "SLOW DR" (GRDT v14).

- Field will be populated with Y, N or NULL
 - YES means the PDR or Curtailment LSR resource has been designated "slow"
 - o NO means the PDR or Curtailment LSR resource has NOT been designated "slow" and
 - NULL means the resource is neither a PDR nor a Curtailment LSR

A resource is designated "slow" when it meets one or both of the following criteria:

- Startup + ramp is greater than 20 minutes to reach PMAX, or
- A bid dispatchable option of Hourly or 15 minute has been elected by the resource (this is done through a GRDT request)
 "SLOW DR" will be a read-only field for Market Participants, indicating the resource met one or both of these criteria.

The Market Instruments BPM Attachment B will be updated to add the definition of the slow demand response resource designation.

For PDR or PDR_LSR where BID_DISP_OPT >= 15 or startup time plus ramp time to Pmax >= 20

Project Info	Details/Date
Application Software Changes	Master File
BPM Changes	Market Instruments Attachment B: Slow Demand Response resource definition
Tariff Changes	• No

See Frequently Asked Questions – Slow Demand Response

At www.caiso.com\Stay Informed\Release Planning\Independent 2020\Slow Demand Response

Activation anticipated in December 2020. ISO will communicate in advance the actual activation date.



2020 - Nodal Pricing Model - Advisory Service for PacifiCorp

Project Info	Details/Date
Reference	Reference – ISO market notice from Dec 18, 2019 – see: Stay Informed\Meetings and Events\Miscellaneous stakeholder meetings\Previous Meetings\2019 meetings\PacifiCorp nodal pricing model service informational call - Dec 18,2019 or http://www.caiso.com/Pages/documentsbygroup.aspx?GroupID=E8304346-54B9-4473-9E45-9C282AAD1340 Reference - NPM FERC filing <a (ferc)="" (npm)="" 18,="" 2019,="" <a="" advisory="" agreement="" an="" at="" available="" california="" call="" commission="" dec.="" discuss="" effort="" energy="" federal="" file="" hosting="" href="http://www.caiso.com/informed/Pages/MeetingsEvents/MiscellaneousStakeholderMeetings/Default.aspx" information="" informational="" intends="" is="" iso="" it="" model="" nodal="" on="" pacificorp="" pricing="" provide="" regulatory="" related="" service.="" stakeholder="" that="" the="" this="" to="" website="" will="" with="">http://www.caiso.com/informed/Pages/MeetingsEvents/MiscellaneousStakeholderMeetings/Default.aspx .
market notice:	This service will produce separate advisory day-ahead nodal pricing results for locations within PacifiCorp's balancing authority areas, without a financial settlement or impact to the ISO's day-ahead market. PacifiCorp will pay the ISO's estimated cost to provide the service. PacifiCorp plans to use the NPM solution results as the basis for its power cost allocation among the states within which it provides retail electric service, consistent with the recently filed interjurisdictional cost allocation agreement."

Milestone Type	Milestone Name	Dates	Status
Tariff	FERC Approval	Feb 28, 2020	✓
Config Guides	Publish Config Guide	Aug 10, 2020	✓
External Training	External training	Sep 03, 2020	✓
Market Sim	Market Sim Window	Oct 06, 2020 - Nov 13, 2020	✓
Production Activation	Day Ahead Nodal Pricing Model	Jan 15, 2021	



2020 – Intertie Deviation Settlement

Project Info	Details/Date
Application Software Changes	Scope: Implement a new Under/Over Delivery Charge for intertie deviations from Market Schedule and After-The-Fact (ATF) E-Tag, to replace Decline charge Impacted Systems: Settlements • Calculate FMM binding intertie award, exclude Curtailment, calculate under/over delivery quantity as deviation of schedule and ATF E-Tag, Charge under/over delivery Charge at 50% of RTD LMP. • Remove the decline charge calculation and Decline Threshold • Allocate Over/Under delivery charge to measured demand ADS - display the HASP schedule, the scheduling coordinator accepted value, and the difference between the two RTM - determine the 15-minute binding award for hourly intertie resources based on the E-Tag at T-40.
BPM Changes	Settlements and Billing
Tariff Change	Section 11.32

Milestone Type	Milestone Name	Dates	Status
Board Approval	Obtain Board of Governors Approval	Feb 07, 2019	✓
External BRS	Post External BRS	Mar 02, 2020	✓
Config Guides	Post Revised Config Guides	Aug 10, 2020	✓
Tech Spec	Publish Technical Specifications	N/A	
Tariff	Tariff Activities	May 22, 2020	✓
BPMs	Settlements and Billing Market Operations	Aug 10, 2020	✓
External Training	Deliver External Training	Sep 29, 2020	✓
Market Sim	Market Sim Window	Dec 1 – Dec 18, 2020	
Production Activation	Intertie Deviation Settlement	Jan 1, 2021	

2020 - EIM Enhancements - Symmetrical Wheeling

Project Info	Details/Date
Application Software Changes	Scope : This project will allow EIM to settle Base ETSR attributes to support Base ETSR Imbalance Energy settlements between two EIM BAAs at a mutually agreed price. The enhancement is for base ETSR price setting to result in symmetrical settlement of wheeling through EIM BAAs enhancement.
	RTM: Update LMP price setting for Base ETSRs to be associated with From BAA of the Base ETSRs and retire split ratio price setting
3.2	MasterFile: Retire the definition of the Base ETSR split ratio and From/To financial location.
	Settlements : Update formulation of Base ETSR export/import in Real Time Congestion Offset EIM and Real Time Marginal Losses
BPM Changes	Energy Imbalance Market (EIM)
Tariff Changes	• N/A

Milestone Type	Milestone Name	Dates	Status
External BRS	Post External BRS	Oct 2, 2020	✓
Config Guides	Post Draft Config Guides	Sep 29, 2020	✓
Tariff	File Tariff	N/A	
BPMs	Post Draft BPM changes	N/A	
External Training	Deliver External Training (EIM Settlements webinar)	Dec 15, 2020	
Market Sim	Market Sim Window	Nov 17, 2020 -Dec 3, 2020	
Production Activation	EIM Enhancements Symmetrical Wheeling	Jan 1, 2021	



Settlements Q4/Winter Release

Release Scope:

- Day Ahead Nodal (NPM project)
- Intertie Deviation Settlement (IDS)
- EIM Enhancement: Symmetrical Wheeling
- Production defects as noted in release component SUG email

Release Milestones as follows:

- 1st draft technical documentation posted = 8/10
- 1st draft configuration output file + initial release component summary posted = 8/25
- 2nd draft configuration output file + 2nd draft tech docs + updated release component summary posted = 9/14
- 3rd draft configuration output file (pre market sim) posted = 10/8
- Unplanned draft configuration output file posted 10/29
 - IDS calc granularity change from MW to MWh
- Deployed to MAP-Stage = 10/6
- Pre-prod configuration output file + release artifacts to post 12/9
- Production deployment 12/16

Winter 2020 settlements release draft settlements technical documentation:

http://www.caiso.com/Pages/documentsbygroup.aspx?GroupID=EF90CE68-D8D0-43F7-8052-04FBE1D0825B



2020 - Commitment Cost and Default Energy Bid Enhancements Ph1

Project Info	Details/Date
Application Software Changes	Scope: Enhances the ability to submit market-based commitment cost bids in order to reflect unique costs and volatility: Ex-ante cost adjustment requests Reference Level Adjustments to default commitment cost bids (start-up and minimum load costs) and default energy bids Make Day Ahead Market process permanent Make D+2 Process permanent Use of indices clarification, and Monday Only in DAM and RTM, per LMPME Conditionally Available Resources (CAR) Impacted Systems: SIBR: Allow the submittal of Ex Ante cost adjustments. CMRI: Provide additional source information for default bids. Submit requests through CIDI for manual consultation and ex-post default bid adjustments.
BPM Changes	Market InstrumentsMarket Operations
Business Process Changes	 Maintain Major Maintenance Adders (MMG LIII) Maintain Negotiated Default Energy Bids (MMG LIII) Maintain Negotiated O_Ms (MMG LIII) Manage Day Ahead Market (MMG LII) Manage Market Billing Settlements (MOS LII) Manage Real Time Hourly Market (RTPD) (MMG LII) Manage Real Time Operations – Maintain Balance Area (MMG LII)



2020 - Commitment Cost and Default Energy Bid Enhancements Ph1

Milestone Type	Milestone Name	Dates	Status
Draft Policy	Publish Draft Business Rules externally	Jan 31, 2018	✓
Board Approval	Obtain Board of Governors Approval	Mar 22, 2018	✓
External BRS	Publish External BRS v1.5: implementation notes & clarifications (BRQ046, BRQ035/335), Generic Hub GPI update	Sep 03, 2019 Sept 14, 2020	✓ ✓
	Revised BRS v1.6: added clarifications and notes		
Config Guides	Config Guide	N/A	
Tech Spec	Publish Technical Specifications	May 17, 2019	✓
	Publish Technical Specification updates for CARs and Electric Pricing Hub weighting	Jun 28, 2019	✓
Tariff	Collect stakeholder comments	Feb 21, 2020	✓
	Draft tariff conference call with stakeholders	Feb 27, 2020	✓
	Stakeholder call to review CCDEBE draft tariff re-filing	May 20, 2020	✓
	Publish updated draft tariff (reflecting 20-May feedback)	Jun 05, 2020	✓
	Refile CCDEBE tariff	Jul 09, 2020	✓
BPMs	Publish draft Market Instruments: Attachment O on CCDEBE Stakeholder Processes page	Oct 04, 2019	✓
	PRR 1203 published: CCDEBE updates to Market Instruments BPM, incl. Attachment O	Oct 18, 2019	✓
External Training	Deliver External Training	Oct 08, 2019	✓
	Finalize external training material	Oct 04, 2019	✓
Market Sim	Market Sim Window	Oct 14, 2019 - Dec 03, 2019	✓
	Market Sim Window – New SIBR rules	Dec 1, 2020 – Dec 15, 2020	
Production Activation	CCDEBE Phase 1	Jan 13, 2021	



OMS Roadmap for 2020-2021

Release	Major Changes	Participant	MAPStage	Production		
October	Remove defaulting discovery date - For retro-active outages submit discovery date Handle no discovery date if not previously submitted.	All	√ 11/05/2020	✓ 11/05/2020	✓ 11/05/2020 1/11/2021	1/11/2021
	Aggregate Resource Outage retrieve results changes - Handle receiving only parent and impacted children.	All				
	Transmission Retrieve Changes - If moving to new version (= 10012020), consume new XSD and handle receipt of multiple change requests.	All				
	 Retrieve Resource/Transmission outage change request Limiting to 50 Disable querying with participant ID & Date Range. Query by Outage ID, Change request ID and Equipment ID/Resource ID 	All			Page 20	

OMS Roadmap for 2020-2021

Release	Major Changes	Participant	MAPStage	Production
November	TOP Calculations for shared equipmentBased on participant ID TOP attribute will be comma separated TOPs.	All	12/18/2020	02/15/2021
	Communication and RAS changes - Handle Providing these flags for Nature of Work for communication and Relay work RAS flags - UI change (RAS/SPS Out of Service, RAS/SPS Reduced Redundancy, Protection Zone, EMS/ICCP Outage) will be changed from Y/N to Y/N/NA(Undefined or Null)	All		
December	Significant Outage flag determination Flag will be displayed in the version history of the outage - Please see May 2020 - CPG slide deck for more details.	All	02/19/2021	04/19/2021



2020 - System Interface Changes

OMS					
Project	Service	Summary	Tech Spec	MAP Stage	Production
N/A	RetrieveResourceOutageChangeRequest_OMSv2_AP & DocAttach RetrieveResourceOutageChangeRequest_OMSv2_DocA ttach_AP RetrieveResourceOutageChangeRequest_OMSv3_AP RetrieveResourceOutageChangeRequest_OMSv3_DocA ttach_AP RetrieveTransmissionOutageChangeRequest_OMSv2_A P RetrieveTransmissionOutageChangeRequest_OMSv2_A P RetrieveTransmissionOutageChangeRequest_OMSv2_D ocAttach_AP RetrieveTransmissionOutageChangeRequest_OMSv3_A P RetrieveTransmissionOutageChangeRequest_OMSv3_A P RetrieveTransmissionOutageChangeRequest_OMSv3_D ocAttach_AP	Performance Improvements: Retrieve up to 50 outages by querying on outage ID) Retrieve based on Change Request ID Retrieve based on Equipment ID Removed capability of querying by participant ID Recommended use to sync data	✓ 8/11/20, v2.1	√ 11/5/2020	1/11/2021
N/A		WebOMS system will not default the discovery date	✓ 8/11/20, v2.1	√ 11/5/2020	1/11/2021
N/A	SubmitResourceOutage_OMSv2_AP SubmitResourceOutage_OMSv2_DocAttach_AP SubmitResourceOutage_OMSv3_AP SubmitResourceOutage_OMSv3_DocAttach_AP	Changes to aggregate resource outage submission for performance improvement Submit de-rate for parent resource (required) and only the impacted child resources Retrieve results will not be include (for both v2 and v3 services) child resources that have no curtailment Parent resource availability points need not match with child resources' but will remain within the overall outage start and end date span Child resource outages can be added to existing outage if the outage has not commenced Ul display and retrieve results for historical outages will be modified to support this model Changes are being done to enhance webOMS performance	✓ 8/11/20, v2.1	√ 11/5/2020	1/11/2021

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2020 - System Interface Changes

OMS	OMS						
Project	Service	Summary	Tech Spec	MAP Stage	Production		
N/A	RetrieveTransmissionOutage_OMSv3_AP RetrieveTransmissionOutage_OMSv3_DocAttach_AP	 If Version Tag =v20201001, return all outage requests If Version Tag <>v20201001, return a single request 	✓ 8/11/20, v2.1	12/18/2020	02/15/2021		
N/A		Auto-acceptance of non-significant changes	✓ 8/11/20, v2.1	12/18/2020	02/15/2021		
N/A		 Handling shared equipment Lists all valid TOPs Allow retrieval by all TOPs 	✓ 8/11/20, v2.1	12/18/2020	02/15/2021		
N/A	RetrieveResourceOutage_OMSv3_AP RetrieveResourceOutage_OMSv3_DocAttach_AP RetrieveTransmissionOutage_OMSv3_AP RetrieveTransmissionOutage_OMSv3_DocAttach_AP SubmitResourceOutage_OMSv3_AP SubmitResourceOutage_OMSv3_DocAttach_AP SubmitTransmissionOutage_OMSv3_AP SubmitTransmissionOutage_OMSv3_AP	 Remedial Action Scheme (RAS) Changes Modeling for 4 RAS Flags will be modified: RAS/SPS Out of Service, RAS/SPS Reduced Redundancy, Protection Zone, EMS/ICCP Outage API validation changes are to require the submission of these flags for Nature of Work 'COMMUNICATION' or 'RELAY WORK'. API submission will continue to take in a 'Y' or 'N' for these flags. Changes will be made to validate to only v3 services (submit and retrieves) No changes to v2 services No Changes to historical outages 	✓ 8/11/20, v2.1	12/18/2020	02/15/2021		

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2020 - System Interface Changes - CCDEBE1 - Pending Activation

SIBR						
Project	Change Type	API Service Name & Major Version, Artifacts	MAP Stage	Production	Technical Specifications	
CCDEBE1	Modify	RetrieveCleanBidSet_SIBRv5_AP	√ 10/16/19	✓ Deploy 3/26/20	13.2	
CCDEBET	iviouity	RetrieveCleanBidSet_SIBRv5_DocAttach_AP	10/10/19	Activation 1/1/2021	13.2	
CCDEBE1	Modify RetrieveCurrentBidResults_SIBRv5_AP RetrieveCurrentBidResults_SIBRv5_DocAttach_AP	RetrieveCurrentBidResults_SIBRv5_AP	✓ 10/16/19	✓ Deploy 3/26/20	13.2	
CCDEREI		10/16/19	Activation 1/1/2021	13.2		
CCDEBE1	SubmitRawBidSet_SIBRv5_AP Modify SubmitRawBidSet_SIBRv5_DocAttach_AP	SubmitRawBidSet_SIBRv5_AP	√ 10/16/19	✓ Deploy 3/26/20	13.2	
		SubmitRawBidSet_SIBRv5_DocAttach_AP	10/16/19	Activation 1/1/2021	13.2	

CMRI						
Project	Change Type	UI	API Service Name & Major Version, Artifacts	MAP Stage	Production	Technical Specifications
LMPME CCDEBE1	Modify	Fristing Report: Detaillt	RetrieveDefaultBidCurves_CMRIv2_AP RetrieveDefaultBidCurves_CMRIv2_DocAttach_AP	CCDEBE1 ✓ 11/6/19	LMPME ✓ 11/13/19 CCDEBE1 ✓ Deploy 3/26/20 Activation 1/1/2021	3.9.4 Release Notes 1.2
CCDEBE1	Modify	Fricting Ronart: Detaillt	RetrieveExternalDefaultCommitmentCost_CMRIv1_AP RetrieveExternalDefaultCommitmentCost_CMRIv1_DocAttach_AP	√ 11/11/19	✓ Deploy 3/26/20 Activation 1/1/2021	3.9.4 Release Notes 1.2

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2020 - System Interface Changes

CMRI					
Project	Change Type	Summary	Technical Specifications	MAP Stage	Production
N/A	Decom	Decommission of deprecated versions	✓ 8/5/20, v3.9.7	11/23/20	12/15/20
EIM2020	INDW	RetrieveEIMInfeasibility_CMRIv1_AP RetrieveEIMInfeasibility_CMRIv1_DocAttach_AP	✓ 8/5/20, v3.9.7	11/23/20	12/15/20
EIM2020	New	Available Balance Capacity	✓ 8/5/20, v3.9.7	11/23/20	12/15/20
EIM2020	INDW	RetrieveLoadConforming_CMRIv1_AP RetrieveLoadConforming_CMRIv1_DocAttach_AP	✓ 8/5/20, v3.9.7	11/23/20	12/15/20
EIM2020	New	Advisory Load Conforming	✓ 8/5/20, v3.9.7	11/23/20	12/15/20

BSAP					
Project	Change Type	Summary	Technical Specifications	MAP Stage	Production
I N/A	Modify - XSD minor version only	RetrieveBalancingTestResults_BSAPv2 RetrieveBalancingTestResults_BSAPv2_DocAttach Add minor version 20201001 (currently 20191001)	√ 10/23/20, v1.7.5	November 2020	TBD

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2020 Fall Release



Fall 2020 Release – Overview

	BOG	BRS	Config Guide	Tech Spec	Mkt Sim Scenarios	Draft Tariff**	Draft BPMs	Training	Market Sim	Production Activation
Fall 2020 Release		04/01/20	05/29/20	05/29/20	05/29/20	06/26/20	07/20/20	07/20/20	Jul 27, 2020 - Sep 4, 2020	10/01/20
ADS UI Replacement Add'I features activation	N/A	08/06/18	N/A	05/22/20	05/29/20	N/A	07/23/20	06/01/20 06/11/20 07/16/20	Jul 27, 2020 - Sep 04, 2020	10/20/20- 10/21/20 12/16/20
Dispatch Operating Target Tariff Clarification	07/26/18	12/26/18 04/30/20	N/A	05/22/20	05/29/20	09/04/18	07/23/20	07/16/20	Jul 27, 2020 - Sep 04, 2020	12/16/20
Excess Behind the Meter Production	11/17/18	02/27/20 04/16/20	05/28/20	05/29/20	06/12/20	11/04/19	07/20/20	07/21/20	Jul 27, 2020 - Sep 18, 2020	01/01/21 (TD)
Market Settlement Timeline Transformation	11/14/19	02/06/20	6/26/20 - Document ation Only	05/29/20	06/12/20	5/19/20	07/20/20	07/20/20	Jul 27, 2020 - Sep 18, 2020	01/01/21 (TD)



Fall 2020 Release - System Interface Changes - Pending Activation

OASIS					
Project	Change Type	Summary	Technical Specifications	MAP Stage	Production
EBTMP	New	ENE_EBTMP_PERF_DATA	✓ 6/22/20, v5.1.14	7/28/20	Activation 1/1/21

MRI-S					
Project	Change Type	Summary	Technical Specifications	MAP Stage	Production
EBTMP	Modify	For: - MRIS Meter: Submit Meter & - MRIS Meter: Retrieve Meter additionally include EBtMP measurement type values (as negative load) both Gross Load and EBtMP meter data would associate with same Load Resource ID	✓ 5/28/20, v2.5	7/28/20	Activation 1/1/21

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Fall 2020 – ADS Replacement

Project Info	Details/Date
Application Software Changes	 Transition to web-based user interface to eliminate the need to install thick client Transition ADS provisioning to the Access and Identity Management (AIM) application including Resource Level Access Controls (RACL) access The query tool will not change in requesting historical data Various user interface enhancements adding content per Operation's request ADS B2B services changes
BPM Changes	Market InstrumentsMarket Operations

Milestone Type	Milestone Name	Dates	Status
Board Approval	Obtain Board of Governors Approval	N/A	
External BRS	Post External BRS	Aug 06, 2018	✓
ADS Update	ADS Update Meeting	Aug 15, 2018	✓
ADS Demonstration	ADS WebEx Demonstration	Apr 16, 2020	✓
CPG Meeting	ADS CPG Meeting	Jul 09, 2020	✓
Config Guides	Design review - BPM and Tariff SMEs	N/A	
Tech Spec	Publish Technical Specifications	May 22, 2020	✓
Tariff	Tariff Activities	N/A	
BPMs	Post Draft BPM changes	Jul 27, 2020	✓
External Training	Provisioning ADS ACL Training	Jun 01, 2020	✓
	External Training Part 1 (Application Preview preparation)	Jun 11, 2020	✓
	Deliver External Training Part 2	Jul 16, 2020	✓
Market Sim	Market Sim Window	Jul 27, 2020 - Sep 04, 2020	✓
Parallel Operations	ADS Parallel Operations	Sep 1, 2020 – Oct 16, 2020	✓
Production Activation	ADS Replacement	Oct 20, 2020 - Oct 21, 2020	✓
Add'l features	DOTT, Unannounced AS Test, RTCD Commitment, Follow DOT Flag, Operating Instructions	Dec 16, 2020	
Decommission	Old ADS Decommission	Feb 01, 2021	

ADS Phase 3: Activation of New Features

- √ 10/20: ADS Phase 1: Network
- ✓ 10/20: ADS Phase 2: New ADS UI, API v8 available
- > 10/30: Close Stage, End Parallel Operations
 - MAP-Stage remains available with active features from now on
- > 12/16: Activation of New Features
 - Only available on New ADS UI, API v8
 - DOTT
 - Unannounced AS Test
 - RTCD Commitment
 - Follow DOT Flag
 - Operating Instructions
- 2/1/21: ADS Phase 4: Decommission of Old ADS client, API v6



ADS Phase 3: Activation of New Features

12/16: Activation of New Features

- Only available on New ADS UI, API v8
- ISO invites customers to leverage ISO Assisted Customer Cutover lines
 - To transition to new ADS UI, API v8
 - To report transition plans, progress, issues
 - By phone: call 1-866-528-2256, access code: 1465216
 - Dates: 11/4, 11/11, 11/18, skip 11/26 due to holiday, 12/2, 12/9 and 12/16
 - Time: 1300-1400 PT
- Recommendation
 - Run ADS Client and new ADS UI in parallel for validation
 - Cutover to API v8 now, as it provides same functionality as v7



Fall 2020 – Dispatch Operating Target Tariff Clarification

Project Info	Details/Date
Application Software Changes	Scope: Allow Energy Intermittent Resources (EIRs) to automate their response to operational instructions that require the resource not to exceed their Dispatch Operating Target. Impacted Systems: RTM: Operator can select EIR resources, system to send Operating instruction Flag to ADS ADS: Receive Operating instruction flag for EIRs. Broadcast message to EIRs operator.
BPM Changes	Market Instruments Market Operations
Tariff Change	Changes tariff language from "Operating Order" to "Operating Instruction" in multiple sections.

Milestone Type	Milestone Name	Dates	Status
Board Approval	Obtain Board of Governors Approval	Jul 26, 2018	✓
External BRS	Posted External BRS	Dec 26, 2018	✓
	Posted revised External BRS	Apr 30, 2020	✓
Config Guides	Design review - BPM and Tariff SMEs	N/A	
Tech Spec	Publish Technical Specifications	May 22, 2020	✓
Tariff	Draft Tariff	Sep 04, 2018	✓
	File Tariff	Oct 29, 2018	✓
BPMs	Post Draft BPM changes	Jul 27, 2020	✓
External Training	Deliver External Training	Jul 16, 2020	✓
Market Sim	Market Sim Window	Jul 27, 2020 - Sep 04, 2020	✓
Production Activation	Dispatch Operating Target Tariff Clarification	Dec 16, 2020	



2021 Spring Release



Spring 2021 – EIM integrations for BANC Phase 2, TID, PNM, LADWP, and NWE

Project Info	Details/Date
Application Software Changes	Implementation of BANC Phase 2, TID, PNM, LADWP, and NWE as EIM Entities
BPM Changes	EIM BPM will be updated if needed to reflect new modeling scenarios identified during implementation and feedback from BANC Phase 2, TID, PNM, LADWP, and NWE.
Market Simulation	December 2020 – January 2021
Parallel Operations	February 2021 – March 2021

		Dates					
Milestone Type	Milestone Name	BANC Phase 2	TID	PNM	LADWP	NWE	Status
Market Sim	Market Sim Window	11/3/20 - 1/31/21	11/3/20 - 1/31/21	11/3/20 - 1/31/21	11/3/20 - 1/31/21	12/1/20 - 1/31/21	
Parallel Operations	Parallel Operations	1/27/21 – 3/25/21	1/27/21 – 3/25/21	1/30/20 – 4/1/21	1/30/20 – 4/1/21	1/30/20 – 4/1/21	
Tariff	File Readiness Certification			Mar 2021			
Production	Activation	3/25/21	3/25/21	4/1/21	4/1/21	4/1/21	



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 <u>www.caiso.com</u> 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 4 🕨 day today Mon Sun Tue Wed Thu Fri Sat **Market Sim** 20) WebCONF: O Deadline: Training: 🙎 Meeting: Training: Market Simulation Get to Know the ISO - Day 1 Comments -Audit Com mittee Settlements 201 Interconnection Process Teleconference (Executive) 2:00pm - 3:00pm 9:00am - 4:00pm En han cem ents 2018 - Is sue 9:00am - 4:00pm Paper and Meeting 8:30am - 9:30am Dis cus sion im balance Conformance Training: Enhance ments Settlements 101 Training: Get to Know the ISO - Day 2 10:00am - 12:00pm 9:00am - 4:00pm Neb CONF: Meeting: Meeting: 2017-2018 Transmission Te chnical User Group Planning Process Flexible Resource 10:00am - 11:00am Adequacy Criteria Must Offer Obligation Phase 2 -10:00am - 4:00pm Re vised Draft Flexible Market Sim Nabconf: Capacity Framework Market Simulation 10:00am - 4:00pm 2:00pm - 3:00pm ≗∉ VIED CONF: Market Settlement User Group 10:00am - 11:00am 13 17 NVebCONF: Deadline: Deadline: Meeting: Participating Transmission Congestion Revenue Rights Submissions - April 2018 Comments - Review Owner Per Unit Cost Auction Efficiency Monthly Resource Transmission Access Release Users Group Guides Adequacy and Supply Plans Charge Structure Straw 10:00am - 4:00pm Proposal and Meeting 10:00am - 12:00pm Dis cus sion (RUG) Congestion Revenue Rights MODEONE: 20 VVebCONF: Release User Group Market Simulation Board of Governors 11:00am - 11:20am 10:00am - 11:00am Teleconference (General) Nabconf: 2:00pm - 3:00pm Outage Management 8:16am - 9:00am Energy imbalance Market System Customer Governing Body Partnership Group Teleconference (Executive) Board of Governors 2:00pm - 3:00pm Teleconference (Executive) 11:30am - 12:20pm 9:00am - 10:00am Call: Market Update 10:16am - 11:00am Mabconf: Market Simulation



ISO PUBLIC