



Release User Group Agenda

February 11th, 2020

10:00 a.m.–11:00 a.m. (Pacific Time)

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

Release User Group Agenda

February 11th, 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 Deluca Cynthia Hinman Christopher McIntosh Jeremy Malekos Janet Morris

The ISO offers innovative training programs

Date	Training courses and workshops
April 28	ISO Workshop - Introduction to ISO Markets (Folsom) (Registration is open)
April 29	ISO Workshop - Market Transactions (Folsom) (Registration is open)
April 30	ISO Workshop – ISO Settlements (Folsom) (Registration is open)
	<i>Registration is open until April 21 or until the classes fill up.</i>



CustomerReadiness@caiso.com

Computer Based Training

There are more than 20 computer based training modules on the ISO website covering:

- Markets and Operations
- Reference Materials
- Settlements and Metering
- Western Energy Imbalance Market

New Modules (recorded webinar and slides)

You can find new initiatives training courses on the learning center web page below.

More resources will be added throughout 2020 in accordance with project schedules.

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

<http://www.caiso.com/participate/Pages/LearningCenter/default.aspx>

Release Plan Summary: 2020

Independent 2020

- Commitment Costs and Default Energy Bid Enhancements Phase 1
- Congestion Revenue Rights (CRR) Data Transparency Enhancements

Spring 2020

- Energy Imbalance Market (EIM) - 2020 Salt River Project
- Energy Imbalance Market (EIM) - 2020 Seattle City Light

Fall 2020

- Energy Storage and Distributed Energy Resources Phase 3B
- Dispatch Operating Target Tariff Clarifications
- Intertie Deviation Settlement
- Excess Behind the Meter Production
- Market Settlement Timeline Transformation
- Energy Imbalance Market (EIM) Enhancements 2020
- Automated Dispatch System (ADS) User Interface (UI) Replacement
- FERC Order 841 – Requested Adjustments

- Contingency Modeling Enhancements – Transmission **TBD**

Release Plan Summary: 2021 - 2022

Spring 2021

- 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
- Energy Imbalance Market (EIM) 2021 - Turlock Irrigation District
- Energy Imbalance Market (EIM) 2021 – BANC Ph 2/WAPA

Fall 2021 – tentative, subject to impact assessment

- Day Ahead Market Enhancements (BOG Q4 2020)
- Resource Adequacy (RA) Enhancements (BOG May/Jun 2020)
- Energy Storage and Distributed Energy Resources Phase 4 (BOG Q1 2020)
- Storage as a Transmission Facility (BOG TBD)
- Transmission Access Charge (TAC) Structure Enhancements (Q4 - BOG)
- **Import Bidding and Market Parameters, (A.K.A. Import Bid Cost Verification and FERC Order 831) – May 2020 BOG**

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

Fall 2022 – tentative, subject to impact assessment

- Commitment Costs and Default Energy Bid Enhancements Phase 2

Release Schedule 2020

Date of Data Refresh: 2/7/2020



Legend	
Market Simulation	CA ISO Holiday
External Testing	Deployment Week



MAP Stage Environment Window

MRI-S API Acceptable Use Policy - Market Sim	MRI-S API Acceptable Use Policy (12/04-02/26)
CRR Data Transparency Enhancements - Market Sim	CRR Data Transparency Enhancements - Market Sim (02/18-04/03)
ESDER Phase 3b - Load Shift Product - Market Sim	ESDER Phase 3b - Load Shift Product - Market Sim (07/27-09/04)
Dispatch Operating Target Tariff Clarification - Market Sim	Dispatch Operating Target Tariff Clarification - Market Sim (07/27-09/04)
Intertie Deviation Settlement - Market Sim	Intertie Deviation Settlement - Market Sim (07/27-09/04)
Excess Behind the Meter Production - Market Sim	Excess Behind the Meter Production - Market Sim (07/27-09/04)
Market Settlement Timeline Transformation - Market Sim	Market Settlement Timeline Transformation - Market Sim (07/27-09/04)
EIM Enhancements 2020 - Market Sim	EIM Enhancements 2020 - Market Sim (07/27-09/04)
ADS UI Replacement - Market Sim	ADS UI Replacement - Market Sim (07/27-09/04)
FERC841 Requested Adjustments - Market Sim	FERC841 Adjustments - Market Sim (07/27-09/04)

EIM Parallel Operations Environment Window

EIM - Salt River Project - EIM Parallel Operations	EIM - Salt River Project - EIM Parallel Operations (02/01-03/31)
EIM - Seattle City Light - EIM Parallel Operations	EIM - Seattle City Light - EIM Parallel Operations (02/01-03/31)

Production Environment Window

Fall 2019 Release CMRI, SIBR, BSAP Deployments	Fall 2019 Release CMRI, SIBR, BSAP Deployments (02/10 - 02/13)
MRI-S API Acceptable Use Policy	MRI-S API Acceptable Use Policy (02/26)
EIM - Salt River Project	EIM - Salt River Project (04/01)
EIM - Seattle City Light	EIM - Seattle City Light (04/01)
CCDEBE Phase 1 Activation	CCDEBE Phase 1 (TBD Apr-May)
CRR Data Transparency Enhancements	CRR Data Transparency Enhancements (04/15)
Settlements - Spring 2020 Release	Settlements - Spring 2020 Release (05/01)
ESDER Phase 3b - Load Shift Product	ESDER Phase 3b - Load Shift Product (10/01)
Dispatch Operating Target Tariff Clarification	Dispatch Operating Target Tariff Clarification (10/01)
Intertie Deviation Settlement	Intertie Deviation Settlement (10/01)
EIM Enhancements 2020	EIM Enhancements 2020 (10/01)
ADS UI Replacement	ADS UI Replacement (10/01)
FERC841 Requested Adjustments	FERC841 Adjustments (10/01)
Excess Behind the Meter Production Activation	Excess Behind the Meter Production Activation (01/01)
Market Settlement Timeline Transformation Activation	Market Settlement Timeline Transformation Activation (01/01)

<http://www.caiso.com/Documents/ReleaseSchedule.pdf>



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System Interface Changes

SIBR/BSAP

System	Project	Change Type	API Service Name & Major Version, Artifacts	MAP Stage	Production Activation	Technical Specifications
SIBR	CCDEBE1	Modify	RetrieveCleanBidSet_SIBRv5 RetrieveCleanBidSet_SIBRv5_DocAttach	Oct 16, 2019	Apr/May 2020	13.2
SIBR	CCDEBE1	Modify	RetrieveCurrentBidResults_SIBRv5 RetrieveCurrentBidResults_SIBRv5_DocAttach	Oct 16, 2019	Apr/May 2020	13.2
SIBR	CCDEBE1	Modify	SubmitRawBidSet_SIBRv5 SubmitRawBidSet_SIBRv5_DocAttach	Oct 16, 2019	Apr/May 2020	13.2
BSAP	EIM2019	Modify	RetrieveBalancingTestResults_BSAPv2 RetrieveBalancingTestResults_BSAPv2_DocAttach	Oct 16, 2019	Feb 2020	1.7.3

CMRI

Project	Change Type	UI Change	API Service Name & Major Version, Artifacts	MAP Stage	Production Activation	Technical Specifications
LMPME CCDEBE1	Modify	Tab: Default Bids Existing Report: Default Energy Bid Curves	RetrieveDefaultBidCurves_CMRIv2 RetrieveDefaultBidCurves_CMRIv2_DocAttach	LMPME - Sep 12, 2019 CCDEBE Nov 6, 2019	LMPME - Nov 13, 2019 CCDEBE – Apr/May 2020	3.9.3
CCDEBE1	Modify	Tab: Default Bids Existing Report: Default Commitment Costs	RetrieveExternalDefaultCommitmentCost_CMRIv1 RetrieveExternalDefaultCommitmentCost_CMRIv1_DocAttach	Nov 11, 2019	Apr/May 2020	3.9.3

System Interface Changes (cont.)

MRI-S

Project	Change Type	UI Change	API Service Name & Major Version, Artifacts	MAP Stage	Production Activation	Technical Specifications
MRI-S API AUP	AUP	N/A	Retrieve Services: RetrieveMeterData_STLMTv1_AP RetrieveMeterData_STLMTv1_DocAttach_AP	Dec 4, 2019	Feb 26, 2020	2.3

OASIS

Project	Change Type	UI Change	API Service Name & Major Version, Artifacts	MAP Stage	Production Activation	Technical Specifications
CRR Data Transparency Enhancements	Modify	Modify Congestion Revenue Rights > CRR Aggregated Revenue Adjustment Data	CRR_AGG_REV_ADJ Add 4 new columns: DIRECTION IFM_NET_FLOW_MW CLAWBACK_REV CIR_SCH_REV	Feb 18, 2020	Apr 15, 2020	5.1.11

MMD

Project	Change Type	CSV Change	Data Change	MAP Stage	Production Activation	Technical Specifications
CRR Data Transparency Enhancements	Data	No Changes to Shift Factors CSV Format/Structure - Same Columns/Column Names	Apnode shift factors will be delivered in the same file as the Pnode shift factors The value in the existing 'Node Name' column will have "-APND" at the end to identify Apnodes	Feb 18, 2020	Apr 15, 2020	N/A

2020 Independent

2020 – Commitment Cost and Default Energy Bid Enhancements Ph1

Project Info	Details/Date
Application Software Changes	<p><u>Scope:</u> Enhances the ability to submit market-based commitment cost bids in order to reflect unique costs and volatility:</p> <ul style="list-style-type: none"> • 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) <p><u>Impacted Systems:</u></p> <ul style="list-style-type: none"> • SIBR: Allow the submittal of Ex Ante cost adjustments. • CMRI: Provide additional source information for default bids. <p>Submit requests through CIDI for manual consultation and ex-post default bid adjustments.</p>
BPM Changes	<ul style="list-style-type: none"> • Market Instruments • Market Operations
Business Process Changes	<ul style="list-style-type: none"> • 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: FERC tariff approval response received

- **CCDEBE Changes**

- FERC rejected the CCDEBE-related changes, which consist of the automated and manual reference level change requests, after the fact cost recovery procedures, and other related provisions.
- However, FERC rejected these without prejudice - **except** for the proposal to include a 25% adder in the commitment cost bid caps in the context of a reference level change request. FERC did not reject or argue against the 10% adder.
- The refiling date will be determined and communicated in a future RUG session

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 revised external BRS v1.1	Jan 22, 2019	✓
	Publish External BRS v1.2: Phase 1/Phase 2, clarifications	Mar 29, 2019	✓
	Publish External BRS v1.3: Reference Level Adjustments	Apr 05, 2019	✓
	Publish External BRS v1.4 for CCDEBE tariff traceability	Jul 19, 2019	✓
	Publish External BRS v1.5: implementation notes & clarifications (BRQ046, BRQ035/335), Generic Hub GPI update	Sep 04, 2019	✓
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	File Tariff - CCDEBE Phase 1	Oct 11, 2019	✓
	Draft Tariff published	May 13, 2019	✓
	Tariff stakeholder walkthrough conference call	Jun 11, 2019	✓
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	✓
Production Activation	CCDEBE Phase 1	TBD (April-May)	

2020 – CRR Data Transparency Enhancements

Project Info	Details/Date
Application Software Changes	<p><u>Scope:</u></p> <ul style="list-style-type: none"> • This Initiative involves data related to daily CRR payments and credits • Scope includes making available to Market Participants additional CRR settlement-related data to support Shadow Settlements <p><u>Impacted Systems:</u></p> <ul style="list-style-type: none"> • IFM: <ul style="list-style-type: none"> • Publish IFM calculated Net Flow per constraint, contingency and interval • Generate Directional Flag (+) (-) that reflects the prevailing direction of the IFM Net Flow and publish with associated IFM Net Flow MW value • Publish APNode shift factors • Clawback (Internal): <ul style="list-style-type: none"> • Calculate and publish a single value representing the sum total of the Clawback and Circular Scheduling MWs • OASIS: <ul style="list-style-type: none"> • Posting of IFM Net Flow and Directional Flag (+) (-) • Posting of single value representing the sum total of the Clawback and Circular Scheduling MWs • MPP Market Modeling Database (MMD): <ul style="list-style-type: none"> • Storage of APNode shift factors in NDA Folder • Manage authorized access to data through validation of appropriate credentials
BPM Changes	<ul style="list-style-type: none"> • Market Instruments • Congestion Revenue Rights
Tariff Changes	<ul style="list-style-type: none"> • N/A • No Tariff changes associated with this initiative. Relevant Tariff provisions made for CRR 1B project

2020 – CRR Data Transparency Enhancements (cont.)

Milestone Type	Milestone Name	Dates	Status
Board Approval	Obtain Board of Governors Approval	N/A	
External BRS	Milestone: Post External BRS	Dec 03, 2019	✓
Config Guides	Post Draft Config Guides	N/A	
Tech Spec	Create ISO Interface Spec Tech Spec - OASIS	Dec 27, 2019	✓
Tariff	File Tariff	N/A	
BPMs	Draft BPM changes Market Instruments	Jan 06, 2020	✓
	Draft BPM Change - CRR	Jan 16, 2020	✓
External Training	External training	Apr 10, 2020	
Market Sim	Market Sim Window	Feb 18, 2020 - Apr 03, 2020	
Production Activation	CRR Transparency Enhancements	Apr 15, 2020	

2020 Spring Release

Spring 2020 – EIM integrations for SCL and SRP

Project Info	Details/Date
Application Software Changes	Implementation of SCL and SRP as EIM Entities
BPM Changes	EIM BPM will be updated if needed to reflect new modeling scenarios identified during implementation and feedback from SCL and SRP.
Market Simulation	December 2019 – January 2020
Parallel Operations	February 2020 – March 2020

Milestone Type	Milestone Name	Dates	Status
Market Sim	Market Sim Window	Dec 3, 2019 – Jan 31, 2020	✓
Parallel Operations	Parallel Operations	Feb 1, 2020 – Mar 31, 2020	
Tariff	File Readiness Certification	Mar 1, 2020	
Production Activation	EIM – SCL and SRP	Apr 1, 2020	

2020 Fall Release

Fall 2020 Release – Overview

	BOG	BRS	Config Guide	Tech Spec	Mkt Sim Scenarios	Draft Tariff**	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
ESDER Phase 3b - Load Shift Product	09/05/18	07/18/19 02/18/20 (Revision)	05/29/20	05/06/20		03/30/20	06/26/20	06/22/20	Jul 27, 2020 - Sep 04, 2020	10/01/20
Dispatch Operating Target Tariff Clarification	07/26/18	12/26/18	N/A	TBD		09/04/18	TBD	TBD	Jul 27, 2020 - Sep 04, 2020	10/01/20
Intertie Deviation Settlement	02/07/19	03/09/20	05/29/20	TBD		TBD	TBD	TBD	Jul 27, 2020 - Sep 04, 2020	10/01/20
Excess Behind the Meter Production	11/17/18	03/02/20	05/29/20	05/28/20		11/04/19	7/20/20	07/21/20	Jul 27, 2020 - Sep 04, 2020	01/01/21
Market Settlement Timeline Transformation	11/14/19	02/06/20	05/29/20	05/29/20		06/26/20	07/20/20	07/20/20	Jul 27, 2020 - Sep 04, 2020	01/01/21
EIM Enhancements 2020	N/A								Jul 27, 2020 - Sep 04, 2020	10/01/20
ADS UI Replacement	N/A	08/06/18	N/A			N/A			Jul 27, 2020 - Sep 04, 2020	10/01/20
FERC 841 – Requested Adjustments	N/A								Jul 27, 2020 - Sep 04, 2020	10/01/20

Fall 2020 Release – System Impacts

Fall 2020 Release	ADS	CMRI	IFM / RTM	OASIS	Settlements	FODD	MF	DRRS	CIRA	MRI-S Metering	MRI-S Settlements	CIDI	Monthly Report @ www.caiso.com	BAAOP	BSAP
ESDER3B	Y				Y		Y	Y	Y						
DOTTC	Y		RTM												
IDS	Y				Y										
EBtMP					Y	Y				Y			Y		
Market Settlement Timeline Transf.		Y		Y	Y				Y	Y	Y	Y			
EIM2020		Y	RTM	Y										Y	Y
ADS UI Replacement	Y														
<i>FERC Order 841 – FERC requested adjust. (TBD)</i>															

Fall 2020 Release – BPM Impacts

	Market Instruments	Market Operations	Settlements & Billing	Definitions & Acronyms	Outage Management	Reliability Requirement	Metering	Credit Mgmt & Market Clearing	Energy Imbalance Market	Rules of Conduct Admin
ESDER Phase 3b - Load Shift Product	Y	Y			Y	Y	Y			
Dispatch Operating Target Tariff Clarification	Y	Y								
Intertie Deviation Settlement			Y							
Excess Behind the Meter Production			Y	Y			Y			
Market Settlement Timeline Transformation	Y		Y	Y		Y	Y	Y	Y	Y
EIM Enhancements 2020	Y									
ADS UI Replacement	Y	Y								
<i>FERC 841 (TBD)</i>										

Fall 2020 – ESDER Phase 3b – Load Shift Product

Project Info	Details/Date
Application Software Changes	<p><u>Scope:</u></p> <p>The ESDER 3b initiative will include two (2) demand response enhancements:</p> <ul style="list-style-type: none">• Addition of a Load Shift Product wherein demand response resources with behind the meter (BTM) storage devices can participate in both load consumption and load curtailment.• Enable sub-metered electric vehicles supply equipment (EVSE) to participate in load curtailment <p><u>Impacted Systems (Overview):</u></p> <p>Master File:</p> <ul style="list-style-type: none">• Registration of new PDR Resource Types and business rules for PDRs with BTM storage devices and wanting to participate in both Load Curtailment and Consumption• Two (2) Resource IDs will be assigned to the same Resource to allow Consumption versus Curtailment participation (PDR-LSR) <p>DRRS:</p> <ul style="list-style-type: none">• Allow two resource IDs to be selected for registrations with LSR baseline methods• New baseline methods for PDR-LSRs and EVSEs• New attribute for locations to indicate BTM device <p>CIRA:</p> <ul style="list-style-type: none">• Will prevent the request of NQC for PDR-LSR Consumption resources <p>Settlements</p> <p>ADS</p>

Fall 2020 – ESDER Phase 3b – Load Shift Product (cont.)

Project Info	Details/Date
BPM Changes	<ul style="list-style-type: none"> Market Instruments, Market Operations, Outage Management, Reliability Requirement and Metering
Tariff Change	Sections 4.13, 6.4, 6.5, 11.6, 11.8, 31.3, 34.1,34.4, 34.5, 30.7 and 34.8

Milestone Type	Milestone Name	Dates	Status
Board Approval	Obtain Board of Governors Approval	Sep 05, 2018	✓
External BRS	Post External BRS v1.4	Jul 18, 2019	✓
	Post External BRS v1.5	Feb 18, 2020	
Config Guides	Post Draft Config Guides	May 29, 2020	
Tech Spec	Publish Technical Specifications	May 06, 2020	
Tariff	Post Draft Tariff	Mar 30, 2020	
	File Tariff	Jun 11, 2020	
BPMs	Post Draft BPM changes	Jun 26, 2020	
External Training	External training	Jun 22, 2020	
Market Sim	Market Sim Window	Jul 27, 2020 - Sep 04, 2020	
Production Activation	ESDER Phase 3b - Load Shift Product	Oct 01, 2020	

Fall 2020 – Dispatch Operating Target Tariff Clarification

Project Info	Details/Date
Application Software Changes	<p>Scope: Allow Energy Intermittent Resources (EIRs) to automate their response to operational instructions that require the resource not to exceed their Dispatch Operating Target.</p> <p>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.</p>
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	Milestone: Post External BRS	Dec 26, 2018	✓
Config Guides	Design review - BPM and Tariff SMEs	N/A	
Tech Spec	Create ISO Interface Spec (Tech spec)	TBD	
Tariff	Draft Tariff	Sep 04, 2018	✓
	File Tariff	Oct 29, 2018	✓
BPMs	Post Draft BPM changes	TBD	
External Training	Deliver External Training	TBD	
Market Sim	Market Sim Window	Jul 27, 2020 - Sep 04, 2020	
Production Activation	Dispatch Operating Target Tariff Clarification	Oct 01, 2020	

Fall 2020 – Intertie Deviation Settlement

Project Info	Details/Date
Application Software Changes	<p>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</p> <p>Impacted Systems:</p> <p>Settlements</p> <ul style="list-style-type: none"> • 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 <p>ADS</p>
BPM Changes	Settlements and Billing
Tariff Change	Section 11.32

Milestone Type	Milestone Name	Dates
Board Approval	Obtain Board of Governors Approval	Feb 07, 2019
External BRS	Post External BRS	Mar 09, 2020
Config Guides	Post Draft Config Guides	May 29, 2020
Tech Spec	Create ISO Interface Spec (Tech spec)	TBD
Tariff	Tariff Activities	TBD
BPMs	Post BPM Changes	TBD
External Training	Deliver External Training	TBD
Market Sim	Market Sim Window	Jul 27, 2020 - Sep 04, 2020
Production Activation	Intertie Deviation Settlement	Oct 01, 2020

Fall 2020 – Excess Behind the Meter Production

Project Info	Details/Date
Application Software Changes	<p>Scope:</p> <ul style="list-style-type: none">• Clarify the Tariff definition of Gross Load:• Establish a new tariff definition for EBtMP:• Establish how EBtMP will be reported and settled:• Determination for Unaccounted For Energy will also need to be updated:• Applying both loss factors associated with the losses (Distribution Loss Factor DLF) from the transmission-distribution interface and the avoided losses from excess behind the meter production:• Report Gross Load (with Gross Up) and EBtMP under same load resource ID for the DLAP or CLAP, using channel 1 for EBtMP, channel 4 for Gross Load.• Publish the EBtMP every other month. <p>Impacted Systems:</p> <p>Settlement - Recognize EBtMP as a measurement type</p> <ul style="list-style-type: none">• Associated resource ID, meter data for EBtMP, and Gross Load• Settle net of gross load and EBtMP as the measured demand• No change for MSS• Modify Calculation UFE:<ul style="list-style-type: none">• $NET\ LOAD = GROSS\ LOAD\ METER - EXCESS\ BTMPRODUCTION\ METER$• $UFE\ QUANTITY = GENERATION\ METER + INTERTIE\ IMPORT\ METER - (NET\ LOAD\ METER + EXPORT\ INTERTIE\ METER + RTD\ LOSS\ MW)$

Fall 2020 – Excess Behind the Meter Production (cont.)

Project Info	Details/Date
Application Software Changes (cont.)	<p><u>Impacted Systems:</u></p> <ul style="list-style-type: none">• Modify follow charge codes to settle based on Gross Load (Reliability based charge codes)<ul style="list-style-type: none">• 372 High Voltage Access Charge Allocation (UDC gross load)• 382 High Voltage Wheeling Allocation (Non PTO load)• 383 Low Voltage Wheeling Allocation (Non PTO load)• 591 Emissions Cost Recovery (Measured Demand)• 1101 Black Start Capability Allocation• 1302 Long Term Voltage Support Allocation• 1303 Supplemental Reactive Energy Allocation• 6090 Ancillary Service Upward Neutrality Allocation• 6194 Spinning Reserve Obligation Settlement• 6196 Spinning Reserve Neutrality Allocation• 6294 Non-Spinning Reserve Obligation Settlement• 6296 Non-Spinning Reserve Neutrality Allocation• 6594 Regulation Up Obligation Settlement• 6596 Regulation Up Neutrality Allocation• 6694 Regulation Down Obligation Settlement• 6696 Regulation Down Neutrality Allocation• 7256 Regulation Up Mileage Allocation• 7266 Regulation Down Mileage Allocation• 7896 Monthly CPM Allocation <p><u>Impacted Systems:</u></p> <p>MRI-S - Meter submission</p> <ul style="list-style-type: none">• Allow SC to submit Gross Load and EBtMP under the single Resource ID<ul style="list-style-type: none">• New measurement type: EBtMP used for EBtMP, measurement type: Load used for Gross Load (gross-up)• Meter submission UI and API will accept the new measurement type: EBtMP• Publish gross load data and EBtMP to ALFS• The SC will be submitting the data as two separate measurement type• Identify data volume handling for all Settlement systems, ALFS <p>Monthly report at www.aiso.com</p> <ul style="list-style-type: none">• Access gross load and EBtMP through settlement database• Publish aggregated EBtMP every other Month under Market Report <p>FODD</p> <ul style="list-style-type: none">• Report to FERC data include Gross load and EBtMP

Fall 2020 – Excess Behind the Meter Production (cont.)

Project Info	Details/Date
BPM Changes	<ul style="list-style-type: none"> • Definitions & Acronyms: <ul style="list-style-type: none"> • Update definition of Gross Load • Add Excess Behind the Meter Production • Metering • Settlements & Billing
Tariff Change	<ul style="list-style-type: none"> • Appendix A: <ul style="list-style-type: none"> • Clarify Gross Load definition, Update Demand definitions, • Add new term Excess Behind the Meter production • Section 11: <ul style="list-style-type: none"> • Update reliability based tariff reference sections to be based upon gross load

Milestone Type	Milestone Name	Dates	Status
Board Approval	Obtain Board of Governors Approval	Nov 17, 2018	✓
External BRS	Publish Market Notice, External BRS to Release Planning	Mar 02, 2020	
Config Guides	Post Draft Config Guides	May 29, 2020	
Tech Spec	Publish Technical Specifications	May 28, 2020	
Tariff	File Tariff	Apr 08, 2020	
	Tariff Stakeholder Walkthrough	Dec 04, 2019	✓
	Draft Tariff published	Nov 04, 2019	✓
BPMs	Post Draft BPM changes	Jun 24, 2020	
	Publish Final Business Practice Manuals	Jul 20, 2020	
External Training	Deliver external training webinar	Jul 21, 2020	
Market Sim	Market Sim Window	Jul 27, 2020 - Sep 04, 2020	
Production Activation	Excess Behind the Meter Production Deployment	Oct 01, 2020	
	Excess Behind the Meter Production Activation	Jan 01, 2021	

Fall 2020 – Market Settlement Timeline Transformation

Project Info	Details/Date
Application Software Changes	<p>Scope:</p> <ul style="list-style-type: none"> • The California ISO is proposing changes to its market settlement timeline to reduce market participant financial exposure by producing initial settlement statements that will more closely approximate the final settlement, and allow sufficient time for CAISO and market participants to resolve disputes. • The California ISO's current settlement timeline is compressed, which places potentially avoidable burdens on CAISO and market participants. The compressed timeline causes CAISO to publish initial statements of lower financial quality and to sometimes delay the publication of its settlement statements. These inefficiencies impact market participants as they must bear a financial burden of varying magnitude for many business days. • The California ISO and market participants also devote a large level of effort to correct data, re-calculate, process, and validate relatively small financial adjustments associated with optional re-calculations long after the settlement trade date has passed. • To resolve inefficiencies and issues, CAISO proposes to calculate and publish two settlement statements within seventy (70) business days after a trade date and re-align the due dates for settlement quality meter data. • Additionally, and under certain defined circumstances, CAISO proposes to re-calculate and publish three settlement statements between seventy (70) business days after a trade date and twenty-four (24) months after a trade date thus reducing the normal settlement life cycle from thirty-six to twenty-four months.
Application Software Changes (cont.)	<p>Impacted Systems:</p> <p>CIDI: The settlements calendar will need to be modified and scripts modified to accommodate the changes.</p> <p>CIRA: Data payload timing modification: RAAIM Outage curtailment – DA, RT, T+9 & T+ 67 run</p> <p>CMRI: Data retention impact due to reducing from 36 months to 24 months.</p> <p>MRI-S Metering:</p> <ul style="list-style-type: none"> • Impacts to the external data submission windows that currently exist, as well as the data transfers from MV-90 to MRI-S Metering and MRI-S Metering to Settlements. • Data submission/freeze timeline. <p>MRI-S Settlements:</p> <ul style="list-style-type: none"> • Update the Post Date calculation, as the payment calendar will change. • Auto scheduling for statement generation. • Statement posting. <p>OASIS:</p> <ul style="list-style-type: none"> • Data retention impact due to reducing from 36 months to 24 months. • FERC 841 related data availability needs to be vetted. <p>Settlements</p>

Fall 2020 – Market Settlement Timeline Transformation (cont.)

Project Info	Details/Date	
BPM Changes	Credit Management and Market Clearing Definitions & Acronyms Energy Imbalance Market Market Instruments Metering Reliability Requirement	Rules of Conduct Administration Settlements and Billing <ul style="list-style-type: none"> • Section 2.3.2 – Schedule for Settlement Statement Publication • Section 2.3.5.1.1 – Dispute Timing • Section 2.3.6 – Billing & Payment • Section 2.4 – Payment Calendars
Tariff Change	Section 10: Metering Section 11: California ISO Settlements and Billing (Publication Contingency document) Section 12: Creditworthiness Section 13: Dispute Resolution	Section 26: Transmission Rates And Charges Section 27: California ISO Markets And Processes Section 29: Energy Imbalance Market Section 37: Rules Of Conduct

Milestone Type	Milestone Name	Dates	Status
Board Approval	Obtain Board of Governors Approval	Nov 14, 2019	✓
External BRS	Post External BRS	Feb 06, 2020	✓
Config Guides	Post Draft Config Guides	May 29, 2020	
Tech Spec	Create ISO Interface Spec (Tech spec)	May 29, 2020	
Tariff	Draft Tariff	Jun 26, 2020	
BPMs	Post Draft BPM changes	Jul 20, 2020	
External Training	Deliver External Training	Jul 20, 2020	
Production Activation	Market Settlement Timeline Deployment	Oct 01, 2020	
	Market Settlements Timeline Effective Date	Jan 01, 2021	

Fall 2020 – EIM Enhancements 2020

Project Info	Details/Date
Application Software Changes	<p><u>Scope:</u> Energy Imbalance Market Enhancements 2020, is to collectively address important issues identified by EIM market participants through Customer Inquiry, Dispute and Information system (CIDI) requests to improve the visibility, functions and features in Energy Imbalance Market (EIM)</p> <p>Technology team and customer services review the 66 EIM enhancement requests by EIM entities and 4 internal request by ISO market operator. Combine each EIM entities submitted the priority list of 10 enhancements, ISO determine to include total 15 requests in EIM enhancement 2020 project.</p> <p><u>Impacted Systems:</u> BAAOP</p> <ul style="list-style-type: none"> • 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) • Fix/Improve SVG One Lines. Request to be able to view SE and telemetry values for all substation flows and elements. • 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 • Utilize the "information" button in the market UI to connect to Knowledge Articles from CIDI for both ISO and EIM Operator • 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) <ul style="list-style-type: none"> • BAAOP Dynamic Limits • BAAOP RTIS • ALFS (load forecast and/or VER forecast) • ICCP link

Fall 2020 – EIM Enhancements 2020 (cont.)

Project Info	Details/Date
Application Software Changes (cont.)	<p>Impacted Systems:</p> <p>BSAP</p> <ul style="list-style-type: none"> • 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 <p>RTM</p> <ul style="list-style-type: none"> • Publish the data of the MW infeasibility data and ABC Up and Down Dispatches of RTPD/RTD • Publish the effective load bias for the market run for RTPD and RTD • Publish the effective ETSR import and export limits for the market run for RTPD and RTD <p>CMRI</p> <ul style="list-style-type: none"> • Display and publish, download the data of the MW infeasibility data and ABC Up and Down Dispatches of RTPD/RTD • Display and publish, download the data of the effective load bias for the market run for RTPD and RTD • Display and publish, download the effective ETSR import and export limits for the market run for RTPD and 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 <p>OASIS</p> <ul style="list-style-type: none"> • The Net EIM transfer limit report in OASIS shall be available for download via API.
BPM Changes	Market Instruments
Tariff Change	N/A

Fall 2020 – ADS Replacement

Project Info	Details/Date
Application Software Changes	<ul style="list-style-type: none"> • 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 provide 30 days of historical data • Various user interface enhancements adding content per Operation's request • ADS B2B services changes
BPM Changes	<ul style="list-style-type: none"> • Market Instruments • Market Operations
Tariff Changes	<ul style="list-style-type: none"> • N/A

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	✓
Config Guides	Design review - BPM and Tariff SMEs	N/A	
Tech Spec	Publish Technical Specifications	TBD	
Tariff	Tariff Activities	N/A	
BPMs	Post Draft BPM changes	TBD	
External Training	Deliver External Training	TBD	
Market Sim	Market Sim Window	Jul 27, 2020 - Sep 04, 2020	
Production Activation	ADS Replacement	Oct 01, 2020	
Production	ADS Parallel Operations	TBD	
Decommission	Old ADS Decommission	TBD	

Fall 2020 – FERC Order 841 – FERC requested adjustments

In November, 2019 FERC responded to ISO compliance filing for FERC Order No. 841. FERC generally accepted CAISO compliance filing, finding that the NGR model and pumped storage model account for the physical and operating characteristics of storage, and that the CAISO appropriately does not assess TAC to energy storage.

FERC took some exceptions with CAISO compliance filing, as follows:

- While accepting that the NGR and Pumped Storage model accommodate the physical and operating characteristics of storage, FERC directs the CAISO to capture the corresponding Master File parameters for storage that are currently in the BPM in the tariff
- FERC disagrees that ancillary service qualification requirements were outside the scope of the order, directing the CAISO to lower its minimum capacity requirements for ancillary services from 500 kW to 100 kW for storage resources
- Finding it unclear whether the CAISO's metering and accounting practices allow for simultaneous participation in both retail and wholesale markets, FERC directs the CAISO to clarify metering and accounting practices for storage in the tariff
- FERC disagrees that the demand response MGO methodology complies with its requirement to avoid duplicative billing where a UDC is unwilling or unable to exempt a storage resource from retail charges. FERC directs the CAISO to create or modify a participation model that will exempt a storage resource from wholesale charges where it already pays retail charges.

CAISO responded to FERC with a subsequent compliance filing Jan 21. We requested a target implementation of these adjustments by Oct 1, 2020 (Fall Release)

Next steps:

CAISO will evaluate the impact of FERC directed adjustments and identify the tariff, BPM, and system changes and communicate them to market participants in subsequent RUG updates.

2021 Spring Release

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

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

Milestone Type	Milestone Name	Dates	Status
Market Sim	Market Sim Window	December 2020 – January 2021	
Parallel Operations	Parallel Operations	February 2021 – March 2021	
Tariff	File Readiness Certification	March 2021	
Production Activation	EIM – PNM, LADWP, TID, NWE and BANC Phase 2	April 2021	

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
	<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>	
<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 3:15pm - 6:00pm</p> <p>Call: Board of Governors Teleconference (General) 9:00am - 10:00am</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)