# Release User Group Agenda

*April 10th, 2018*                               *10:00 a.m.–11:00 a.m.* (Pacific Time)

| Web Conference Information | Conference Call Information |
|---|---|
| Web Address: https://caiso.webex.com/meet/RUG<br>Meeting Number: 960 941 245<br><br>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<br>International Dial-in: 216-706-7052<br>Access Code: 291 426 5 |
| The ISO is now recording the RUG and TUG calls and will be posting the recordings on the Release Planning webpage for stakeholders to listen to at their convenience. | |

# Release User Group Agenda

*April 10th, 2018*                    *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 | Joanne Alai<br>Sandhya Balasubramanian<br>Brett Bruderer<br>Eureka Cullado<br>Marcelo Da Costa<br>Jami Herguth<br>Elli Johnston<br>Deann MacDougall<br>Christopher McIntosh<br>LeAnne McLaughlin<br>Indu Nambiar<br>Prince Phillip<br>Raymond Riley<br>LuAnn Rivera<br>Marci Stuckey<br>Craig Williams<br>John Williams<br>Justin Wong |

# The ISO offers innovative training programs

| Date | Training<br>All classes are offered at our Folsom, CA campus unless noted otherwise |
|------|------------------|
| April 18 | Resource Interconnection Management System (RIMS) – Generation Module (webinar) |
| April 19 | Welcome to the ISO (webinar) |
| May 8-9 | Get to Know the ISO |
| May 10 | Settlements 101 |
| May 11 | Settlements 201 |

*The ISO's External Training & Readiness team provides quality training and readiness programs that successfully prepare Stakeholders to effectively engage with the ISO*

Visit our **Learning Center** web page to access our training calendar, register for courses and find other useful resources, including computer based training courses, and new release training materials at:

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

Contact us: CustomerTraining@caiso.com

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# Release Plan Summary: 2017 – Spring 2018

**Winter 2017**
- Energy Imbalance Market (EIM) 2017 Enhancements Phase 2
- Energy Imbalance Market (EIM) Winter 2017 Enhancements
- Energy Storage and Distributed Energy Resources (ESDER) Phase 1C
- Energy Imbalance Market (EIM) 2018 Idaho Power Company (new participant)
- Energy Imbalance Market (EIM) 2018 Powerex (new participant)

**Independent 2018**
- Black Start and System Restoration Phase 2
- Resource Interconnection Management System (RIMS) Functional Enhancements
- Deactivation of Transport Layer Security (TLS) 1.0 & 1.1
- Commitment Cost Enhancement (CCE) Phase 3

**Spring 2018**
- Resource Adequacy Availability Incentive Mechanism (RAAIM) Calculation Modifications
- Reliability Services Initiative (RSI) 2017
- Scheduling Infrastructure and Business Rules (SIBR) User Interface (UI) Upgrade

# Release Plan Summary: Fall 2018 – Spring 2020

**Fall 2018**
- Green House Gas (GHG) Enhancements for EIM
- Contingency Modeling Enhancements - Transmissions
- Commitment Costs and Default Energy Bid Enhancements (CCDEBE)
- Settlements Performance Improvements
- Energy Storage and Distributed Energy Resources (ESDER) Phase 2
- Generator Contingency and Remedial Action Scheme (RAS) Modeling
- Capacity Procurement Mechanism (CPM) – Risk-of-Retirement
- Automated Dispatch System (ADS) User Interface (UI) Replacement
- Congestion Revenue Right (CRR) Auction Efficiency (phased implementation)

**Spring 2019**
- Energy Imbalance Market (EIM) 2019 Balancing Authority of Northern California (BANC) / Sacramento Municipal Utility District (SMUD)

**Fall 2019 – tentative, subject to impact assessment**
- Flexible Resource Adequacy Criteria and Must-offer Obligation (FRACMOO) Phase 2
- Energy Storage and Distributed Energy Resources (ESDER) Phase 3
- Review of Transmission Access Charge (TAC) Billing Structure
- Day-Ahead Market Enhancements

**Spring 2020**
- Energy Imbalance Market (EIM) 2020 Salt River Project
- Energy Imbalance Market (EIM) 2020 Seattle City Light
- Energy Imbalance Market (EIM) 2020 Los Angeles Dept. of Water and Power

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# Release Plan Summary: Subject to Further Planning

**TBD – tentative, subject to impact assessment**
- Imbalance Conformance Enhancements (ICE)
- Intertie Deviation Settlement
- Variable Energy Resource Dispatch Operating Point (VER DOT)
- Review of Reliability Must Run and Capacity Procurement Mechanism
- EIM Offer Rules
- Storage as a Transmission Asset
- RA Enhancements (Track 1 and Track 2)
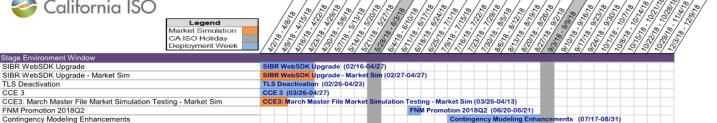
# Release Schedule - 2018



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**Date of Data Refresh:** 4/5/18 4:23 PM

**Legend**
- Market Simulation
- CA ISO Holiday
- Deployment Week

**Map Stage Environment Window**
- SIBR WebSDK Upgrade (02/16-04/27)
- SIBR WebSDK Upgrade - Market Sim (02/27-04/27)
- TLS Deactivation (02/26-04/23)
- CCE 3 (03/26-04/27)
- CCE3: March Master File Market Simulation Testing - Market Sim (03/26-04/13)
- FNM Promotion 2018Q2 (06/20-06/21)
- Contingency Modeling Enhancements (07/17-08/31)
- Contingency Modeling Enhancements - Market Sim (07/17-08/31)
- Generator Contingency and RAS Modeling (07/17-08/27)
- Generator Contingency and RAS Modeling - Market Sim (07/17-08/27)
- ADS Replacement (07/17-08/31)
- ADS Replacement - Market Sim (07/17-08/31)
- Settlements Performance Improvements (07/17-08/31)
- Settlements Performance Improvements - Market Sim (07/17-08/31)
- CPM Risk-of-Retirement Process Enhancements (07/17-08/31)
- CPM Risk-of-Retirement Process Enhancements - Market Sim (07/17-08/31)
- ESDER Phase 2 (07/16-08/31)
- ESDER Phase 2 - Market Sim (07/17-08/31)
- CRR Auction Efficiency (07/17-08/31)
- CRR Auction Efficiency - Market Sim (07/17-08/31)
- EIM Enhancements 2018 (07/17-08/31)
- EIM Enhancements 2018 - Market Sim (07/17-08/31)
- CCDBE (07/17-08/31)
- CCDBE - Market Sim (07/17-08/31)
- CCE 3 (08/30-10/04)
- CEE3: September Full Market Simulation - Market Sim (08/30-10/04)
- FNM Promotion 2018Q3 (09/19-09/20)

**Parallel PROD Environment Window**
- EIM - Idaho Power (01/03-04/16)
- EIM - Powerex (01/03-04/06)

**PROD Environment Window**
- TLS Deactivation (04/23-04/23)
- Back-end and ECIC UI drop (04/26-04/27)
- RIMS 5 -Gen/Trans/QM (04/30-04/30)
- SIBR WebSDK Upgrade (05/01-05/01)
- FNM Promotion 2018Q2 (05/22-05/24)
- RAAIM Implementation Update (06/01-06/01)
- FNM Promotion 2018Q3 (08/21-08/23)
- ADS Replacement (08/31-08/31)
- Contingency Modeling Enhancements (10/01-10/01)
- Black Start 2 - Settlements Implementation (10/01-10/01)
- CPM Risk-of-Retirement Process Enhancements (10/01-10/01)
- Green House Gas Enhancements for EIM (10/01-10/01)
- Master File GRDT Clarifications (10/01-10/01)
- Discontinue Min/Worst Ramp Rate (10/01-10/01)
- EIM Enhancements 2018 (10/01-10/01)
- Generator Contingency and RAS Modeling (10/01-10/01)
- Settlements Performance Improvements (10/01-10/01)
- ESDER Phase 2 (10/01-10/01)
- CCDEBE (10/01-10/01)
- CRR Auction Efficiency (10/01-10/01)
- CCE 3 (11/01-11/01)
- Black Start 2 - First Settlements Cycle (12/03-12/03)

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

# UI and API Changes

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# Product View - CMRI UI and API changes

| Release | Project | Change Type | External Impact | MP Action | UI Change | Service Name & Major Version | Minor Version | MAP Stage | Production Activation | Artifacts Package | Tech Spec Version |
|---------|---------|-------------|-----------------|-----------|-----------|------------------------------|---------------|-----------|---------------------|-------------------|-------------------|
| 2017 | Enhancement | New | CAISO Market | Adopt when ready | Tab: Post-Market New Report: Regulation Pay for Performance | N/A | N/A | 2/23/2018 | 4/4/2018 | N/A | N/A |
| Winter 2017 | EIM 2017 | New | CAISO & EIM Market | Adopt when ready | Tab: EIM New Report: Resource Ramp Capacity | retrieveResourceRampCapacity_v1 retrieveResourceRampCapacity_v1_DocAttach | 20180201 | 2/23/2018 | 4/1/2018 | v1.0 (Winter) (released 11/6) | 3.7.0 (released 11/6) |
| Fall 2018 | CCE3 | New | CAISO Market | Adopt when ready | Tab: Default Bids New Report: Actual Limitation Values | retrieveActualLimitationValues_v1 retrieveActualLimitationValues_v1_DocAttach | 20171001 | September 2018 | 11/1/2018 | v1.0 (Fall) | 3.6.3 |
| Fall 2018 | CCE3 | New | CAISO Market | Adopt when ready | Tab: Default Bids New Report: Resource Opportunity Costs | retrieveResourceOpportunityCost_v1 retrieveResourceOpportunityCost_v1_DocAttach | 20171001 | September 2018 | 11/1/2018 | v1.0 (Fall) | 3.6.3 |

Application access: **http://www.caiso.com/participate/Pages/ApplicationAccess/Default.aspx**

CAISO new developer site: **https://developer.caiso.com**

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# Product View - OASIS UI and API changes

| Release | Project | Change Type | External Impact | MP Action | UI Change | Web Service | MAP Stage | Production Activation | Artifacts Package | Tech Spec Version |
|---------|---------|-------------|-----------------|-----------|-----------|-------------|-----------|----------------------|-------------------|-------------------|
| Winter 2017 | EIM 2017 | New | CAISO & EIM Market | Adopt when ready | Tab: Prices New Report: Hourly RTM LAP Prices | PRC_RTM_LAP | 1/19/2018 | 4/1/2018 | V1.2 | 5.1.1 |
| Winter 2017 | RSI | New | CAISO Market | Adopt when ready | Tab: Public Bids New Report: CSP Offer | PUB_CSP_OFFER_SET | 12/5/2017 | 5/1/2018 | V1.2 | 5.1.1 |

Application access: **http://www.caiso.com/participate/Pages/ApplicationAccess/Default.aspx**

CAISO new developer site: **https://developer.caiso.com**

# Product View - Master File changes

| Release | Project | Change Type | External Impact | MP Action | UI Change | Web Service | Major Version | Minor Version | MAP Stage | Production Activation | Artifacts Package | Tech Spec Version |
|---------|---------|-------------|-----------------|-----------|-----------|-------------|---------------|---------------|-----------|----------------------|-------------------|-------------------|
| Winter 2017 | EIM 2017 | Modify | EIM Market | Required for Generic NGR | N/A | retrieveGeneratorRDT | 4 | 20180201 | 12/1/2017 | 4/4/2018 | v4.0.1 | V3.6 |
| Winter 2017 | EIM 2017 | Modify | EIM Market | Required for Generic NGR | N/A | submitGeneratorRDT | 4 | 20180201 | 12/1/2017 | 4/4/2018 | v4.0.1 | V3.6 |
| Spring 2018 | BRE-B CCE3 RSI | Modify | CAISO & EIM Market | Required to provide CCE3 values | | retrieveGeneratorRDT | 4 | 20180501 | March 2018 | 5/1/2018 | v4.1.2 | V4.1.1 |
| Spring 2018 | BRE-B CCE3 RSI | Modify | CAISO & EIM Market | Required to provide CCE3 values | | submitGeneratorRDT | 4 | 20180501 | March 2018 | 5/1/2018 | V4.1.2 | V4.1.1 |
| Spring 2018 | CCE3 | Modify | CAISO Market | Required for ULPDT at Config Level | Upload Tab: ULPDT similar to RDT | N/A | N/A | N/A | March 2018 | 5/1/2018 | N/A | N/A |
| Spring 2018 | CCE3 | Modify | CAISO Market | Required for ULPDT at Config Level | Reports Tab: ULPDT similar to RDT | N/A | N/A | N/A | March 2018 | 5/1/2018 | N/A | N/A |

Application access: **http://www.caiso.com/participate/Pages/ApplicationAccess/Default.aspx**

CAISO new developer site: **https://developer.caiso.com**

# Master File Updates & Clarifications

**Winter Release** includes a new Fuel Type enumeration (GNRC) to identify generic NGRs

- There will be no structural changes to the RDT
  - GRDT spreadsheet version 11 will continue to be the production version
- An updated Tech Spec will be posted by 10/10
  - The Tech Spec will only be updated to include the new Fuel Type enumeration.

**Spring Release** of MF GRDT includes CCE3, BREB, and RSI attributes

- GRDT version 12 and Tech Spec 4.1.1 have been posted since June
- The Spring RDT and Tech Spec was updated in December to include recent changes (e.g. ICE Hub)
- GRDT Highlights (Following slide has the time lines)
  - RESOURCE tab – Add Electric Region (R/O), Market Max Daily Starts (R/W), COM MW (R/O), Power Price Hub (R/O)
  - Ramp Tabs (Resource & Configuration : Operational, Regulation, and Op Reserve) – Add Market Ramp Rate (R/W); discontinue supporting Min/Worst Ramp Rate (submitted values will be ignored)
  - CONFIGURATION tab – Add Implied Starts (previously documented as CT Starts) (R/W)
  - TRANSITION tab – Add Market Max Daily Transitions (R/W), Implied Starts (R/O)
- ULPDT Highlights
  - Add Configuration ID
  - ULPDT will be loaded via Batch Process with automated Batch Status notification
  - Compare Report available
  - Validation Rules will continue to appear on UI, not in a separate Validation Report

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# Master File GRDT Clarifications

| | Active in Master File | Active in Market |
|---|---|---|
| Electric Region | Fall 2017 (BREB) | Fall 2017 |
| COM MW | Fall 2017 (RSI) | Fall 2017 |
| Market Max Daily Starts | Spring 2018<br>SC may update value via the GRDT/Master File UI, but no market impact until Fall 2018 | Fall 2018 |
| Power Price Hub | Spring 2018<br>CAISO will populate | Fall 2018 |
| Market Ramp Rate (Operational, Operating Reserve, Regulation) | Spring 2018<br>SC may update value via the GRDT/Master File UI, but no market impact until Fall 2018 | Fall 2018 |
| Min/Worst Ramp Rate to be discontinued | Values remain active in market until Fall 2018 | Discontinued Fall 2018 |
| Configuration: Implied Starts | Spring 2018<br>SC may update value via the GRDT/Master File UI, but no market impact until Fall 2018 | Fall 2018 |
| Transition: Market Max Transitions | Spring 2018<br>SC may update value via the GRDT/Master File UI, but no market impact until Fall 2018 | Fall 2018 |
| Transition: Implied Starts | Spring 2018<br>Value is derived from Configuration Implied Starts. No market impact until Fall 2018 | Fall 2018 |

# 2018 Independent Projects

California ISO

# 2018 – Black Start and System Restoration Phase 2

| Project Info | Details/Date |
|---|---|
| Application Software Changes | **Settlements:**<br>• Modifications to existing charge codes for Black Start capacity and Black Start allocations will need to occur.<br>**MPP (Market Participant Portal):**<br>• Possibility to use current functionality for receiving RMR invoices for Black Start units. |
| BPM Changes | **Definitions & Acronyms:**<br>• Revision of the following definitions to match the Tariff language:<br>    Ancillary Services (AS), Black Start Generator, Black Start Generating Unit, Interim Black Start Agreement, Reliability Services Costs<br>**Settlements & Billing:**<br>• Pending Settlements review. Revisions will be directly based on Tariff changes. |

# 2018 – Black Start and System Restoration Phase 2

| Milestone Type | Milestone Name | Dates | Status |
|---|---|---|---|
| Board Approval | Obtain Board of Governors Approval | May 01, 2017 | ✓ |
| RFP | Closure of Request For Proposal | Jul 31, 2017 | ✓ |
| | Awards and final report | Dec 01, 2017 | ✓ |
| | Posted request for proposal documents | Jun 15, 2017 | ✓ |
| External BRS | Complete and Post External BRS | Nov 10, 2017 | ✓ |
| Tariff | File Tariff | May 15, 2017 | ✓ |
| | Tariff approval | Nov 01, 2017 | ✓ |
| | Filed tariff amendment related to cost allocation | Aug 03, 2017 | ✓ |
| Config Guides | Publish draft Settlements Configuration Guides | Aug 01, 2018 | |
| BPMs | BPM Changes Required | Jul 02, 2018 | |
| Tech Spec | Create ISO Interface Spec (Tech spec) | N/A | |
| Market Sim | Market Simulation | TBD | |
| Production Activation | Black Start and System Restoration Phase 2 | Dec 03, 2018 | |
| | Settlements changes effective date | Dec 01, 2017 | ✓ |
| | Settlements implementation | Oct 01, 2018 | |
| | First Settlements cycle | Dec 03, 2018 | |

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# 2018 – RIMS 5 Functional Enhancements

| Project Info | Details/Date | Status |
|---|---|---|
| Application Software Changes | Functional enhancements resulting from the Customer Partnership Group CPG. More details to be provided in the future. | |
| BPM Changes | Generator Interconnection and Deliverability Allocation Procedures<br>Generator Interconnection Procedures<br>Managing Full Network Model<br>Metering<br>Generator Management<br>Transmission Planning Process | |
| Customer Partnership Group | 10/16/15 | ✓ |
| Application and Study Webinar | 3/31/16 | ✓ |

| Milestone Type | Milestone Name | Dates | Status |
|---|---|---|---|
| Board Approval | Board approval not reqiured | N/A | |
| External BRS | External BRS not Required | N/A | |
| Tariff | No Tariff Required | N/A | |
| Config Guides | Configuration Guides not required | N/A | |
| BPMs | Generator Interconnection and Delivery Allocation | Apr 29, 2016 | ✓ |
| Tech Spec | No Tech Specifications Required | N/A | |
| Training | Train the PTOs | Feb 13, 2018 | ✓ |
| | WebEx Training on Generation Module | Apr 18, 2018 | |
| Production Activation | RIMS5 | Apr 30, 2018 | |
| | RIMS5 App & Study | Mar 21, 2016 | ✓ |

# 2018 – Deactivation of TLS 1.0 & 1.1

| Info | Details/Date |
|------|--------------|
| **Summary** | The California ISO will deactivate Transport Layer Security (TLS) 1.0 and 1.1 in the market and performance (MAP) stage environment on **February 20, 2018**, in the production environment on **April 23, 2018**, and only TLS 1.2 will remain active. It is necessary for market participants to enable TLS 1.2 as soon as possible in browsers and APIs. |
| **Details** | It is necessary for market participants to enable TLS 1.2 in browsers and application programming interfaces (APIs) as soon as possible in order to continue to access the MAP stage environment from **February 20, 2018** onwards, and to continue to access the production environment from **April 23 onwards**, as only TLS 1.2 will remain active. Market participants can enable TLS 1.2 immediately; the MAP stage and production environments currently allow TLS 1.2. Note: There is no need to *disable* TLS 1.0 and 1.1 in browsers and APIs because the versions are backward compatible.<br><br>Once TLS 1.0 and 1.1 are deactivated in the MAP stage environment, the ISO encourages market participants to confirm successful connectivity to the MAP stage portal, portal application's user interfaces (UIs) and APIs prior to the production environment deactivation, which will be the same on April 23, 2018. The deactivation of TLS 1.0 and 1.1 is in order to align with industry best practices for security and data integrity.<br><br>The *Systems Access Information for Market Participants* document contains the information to access the MAP stage and production environments. This document is available on the ISO website at **http://www.caiso.com/Documents/SystemAccessInformation_MarketParticipants.pdf**.<br><br>**Note: Automated Dispatch System (ADS) users on versions older than 6.1.0.0 will need to upgrade to the current version, as older versions are not compatible with TLS 1.2.** Update the ADS client through the production Market Participant Portal (MPP) installation package download at **https://mpp.caiso.com/ads_install**. Find more information and the mandatory ADS upgrade market notice announcement **here**.<br><br>This market notice reflects the updated deactivation dates from the previous **market notice** announcement. |
| **Market Notice** | http://www.caiso.com/Documents/UpdateDeactivation-TransportLayerSecurityTLS10_11.html |

| Milestone Type | Milestone Name | Dates | Status |
|----------------|----------------|-------|--------|
| MAP-Stage | Deactivate TLS 1.0 & 1.1 in MAP-Stage | Feb 26, 2018 | |
| Production | Deactivate TLS 1.0 & 1.1 in Production | Apr 23, 2018 | |

# 2018 - Commitment Cost Enhancements Phase 3

| Project Info | Details/Date |
|---|---|
| Application Software Changes | **Scope:**<br>1. Clarify use-limited registration process and documentation to determine opportunity costs<br>2. Determine if the ISO can calculate opportunity costs<br>   • ISO calculated; Modeled limitation Start/run hour/energy output<br>   • Market Participant calculated; Negotiated limitation<br>3. Clarify definition of "use-limited"; *add MSG Configuration ID to ULPDT*<br>4. Change Nature of Work attributes (Outage cards)<br>   • Modify use-limited reached for RAAIM Treatment<br>   • Allow PDR to submit use-limit outage card for fatigue break.<br>5. Market Characteristics *(to be added to GRDT)*<br>   • Maximum Daily Starts<br>   • Maximum MSG transitions<br>   • Ramp rates<br>**Impacted Systems:**<br>   1. Master File: Set use-limited resource types and limits; Set market-based values<br>   2. ECIC: Process use limited resource input values for and Receive opportunity cost adders from opportunity cost tool<br>   3. CIRA: RAAIM exempt rule for "use-limited reached"<br>   4. CMRI: Publish opportunity cost<br>   5. IFM/RTN: Use market-based values MDS, MDMT and RR<br>   6. SIBR: Add Opportunity cost adders on bid caps, remove daily bid RR<br>   7. OMS: "Use-Limited Reached" nature of work attribute for Generation Outage Card<br>   8. Settlements: Publish the actual start up, run hour and energy output for the use-limited resources<br>   9. Opportunity cost calculator (OCC): Calculate and publish opportunity costs for start-up, MLC and DEB |
| BPM Changes | Market Instruments, Outage Management, Reliability Requirement, Market Operations |
| Business Process Changes | • Manage Market & Reliability Data & Modeling<br>• Manage Markets & Grid |

# 2018 - Commitment Cost Enhancements Phase 3 (cont)

| Milestone Type | Milestone Name | Dates | Status |
|---|---|---|---|
| Board Approval | Board of Governors (BOG) Approval | Mar 25, 2016 | ✓ |
| External BRS | Post Updated External BRS | Aug 21, 2017 | ✓ |
| Tech Spec | Publish Updated Technical Specifications | Nov 30, 2017 | ✓ |
| Tariff | File Tariff | Mar 23, 2018 | ✓ |
| Config Guides | Config Guide | May 17, 2018 | |
| BPMs | Post Draft BPM changes | Aug 17, 2018 | |
| External Training | Deliver External Training | Aug 31, 2018 | |
| Market Simulation | March Master File Market Simulation Testing | Mar 26, 2018 - Apr 13, 2018 | |
| | September Full Market Simulation | Aug 30, 2018 - Oct 04, 2018 | |
| Production Activation | Deploy to Production | Nov 01, 2018 | |

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## CCE3:  Project Timeline, Deployment Dates, Major Milestones

**5/1**
**Production deployment for OCC**
**(for internal use)**

**11/1**
**Production Activation**

**5/1 - 10/31**
**Evaluation of Opportunity Cost Calculations**
**Outreach to SCs (ongoing)**

**9/1 - 9/30**
**Full Market Simulation Testing**

2/1
1/26/18

3/1

4/1

5/1

6/1

7/1

8/1

9/1

10/1

11/1/18

**3/26 - 3/31**
**Market Sim:**
**MF RDT**

**Discovery/Evaluation Timeframe:  Expectations**

- New process to be defined; primarily an internal CAISO effort
- CAISO will identify resources impacted, type of constraints they have, and what time of eligibility period they will declare (monthly, annual, rolling)
- CAISO will then identify the formulation for calculation of opportunity costs (i.e. types of constraints that fit into model)
- CAISO can then validate the type of constraint declared and how constraints are translated into any of the three defined model constraints in the system
- CAISO will also be able to separate the resources that go into formula-based calculation versus resources that fall into negotiated opportunity costs.
    - For the negotiated option, CAISO will identify how to determine negotiated opportunity costs, which will be tailored to each resource.
- Planning for simulation of OCC in September, including integration of the OCC so that MPs can see adders flowing into SIBR and available in CMRI.
- Prior to November 1st, data will not be flowing downstream (publication explicitly blocked).  During this period CAISO will interact with each MP depending on the specifics of their resources.  This will be tracked via CIDI tickets.

# 2018 Spring Release

# Spring 2018 – RAAIM Calculation Modifications

| Project Info | Details/Date |
|---|---|
| Application Software Changes | **RAAIM (Resource Adequacy Availability Incentive Mechanism)** – California ISO intends to release a new RAAIM Calculation Modifications within the Settlements system.<br><br>The fix properly weights flexible capacity for both relative (in percent) and absolute (in MW) availability, as compared to generic capacity in a resource's total availability.<br><br>For Configuration Guides, please refer to CG PC RA Availability Incentive Mechanism v5.4, CC 8830 v5.2, and CC 8831 v5.1. |

| Milestone Type | Milestone Name | Dates | Status |
|---|---|---|---|
| Configuration Guide | Draft Technical Documents (Draft Settlements BPM) | Nov 8, 2017 | ✓ |
| Configuration Output File | Draft Configuration Output File (updated version will be provided prior to Market Sim) | Nov 22, 2017 | ✓ |
| BPMs | Post BPM Changes - Settlements & Billing | Feb 7, 2018 | ✓ |
| External Validation | New calculation will be deployed into Production as advisory beginning 5/1/2018 | May 1, 2018 | |
| Market Sim | Market Simulation (Additional trade date 3/7 and 3/8 Includes mini-monthly) | Jan 16 – Mar 8, 2018 | ✓ |
| Production Deployment | Implement and deploy into Production revised charge codes per Winter release deployment plan. | May 1 – Jun 30, 2018 | |
| Production Activation | Revised RAAIM penalties and incentives become financially binding on 7/1/2018 going forward. | July 1, 2018 | |

# Spring 2018 - Reliability Services Initiative 2017

| Project Info | Details/Date |
|---|---|
| **Application Software Changes** | **Scope:**<br>Redesign of Replacement Rule for System RA and Monthly RA Process.<br>• RA Process and Outage Rules for implementation for 2017 RA year.<br>• CSP Offer Publication (RSI 1A scope)<br>• Local and system RA capacity designation<br>• RA showing requirements for small load serving entities (LSEs)<br>• RA showing tracking and notification<br>**Impacted Systems:**<br>    • OASIS<br>    • Settlements<br>    • CIRA<br>**CIRA:**<br>• Modifications to the RA and Supply Plan to show breakdown of local and system. Validation rules need to be updated.<br>• Update planned/forced outage substitution rules<br>• Allow market participants to select how much system/local MWs to substitute.<br>• Modification of UI screens to accommodate system/local MW split.<br>• Enhance system to allow exemption from submission of RA Plans for LSE that have a RA obligation < 1 MW for a given capacity product.<br>**Settlements:**<br>• Splitting local from system in upstream RA system impacts the RAAIM Pre calculation. |
| **BPM Changes** | • Reliability Requirements: Changes to the monthly RA process<br>• Settlements and Billing |
| **Business Process Changes** | **Manage Market & Reliability Data & Modeling**<br>• Manage Monthly & Intra-Monthly Reliability Requirements<br>• Manage Yearly Reliability Requirements |

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# Spring 2018 - Reliability Services Initiative 2017

| Milestone Type | Milestone Name | Dates | Status |
|---|---|---|---|
| Board Approval | Board Approval | May 12, 2015 | ✓ |
| External BRS | Post Updated External BRS v1.1 (RSI 2) | Apr 07, 2017 | ✓ |
| | Post RSI 2017 External BRS v2.0 | Apr 19, 2017 | ✓ |
| | Post Updated External BRS v1.3 (RSI 1B) | Mar 03, 2017 | ✓ |
| Tariff | File Tariff | Sep 29, 2017 | ✓ |
| | Receive FERC order | Jan 18, 2018 | ✓ |
| | Receive FERC Approval tor Delay/Waiver | Mar 01, 2018 | ✓ |
| | Waiver Filing to Delay Implementation | Feb 14, 2018 | ✓ |
| Config Guides | Config Guide | Jun 23, 2017 | ✓ |
| BPMs | Post Draft BPM Changes - Reliability Requirements | Dec 05, 2017 | ✓ |
| | Post Draft BPM Changes - Settlements & Billing | Aug 30, 2017 | ✓ |
| | Post Final BPM - Settlements & Billing | Feb 07, 2018 | ✓ |
| | Post Final BPM - Reliability Requirements | Apr 20, 2018 | |
| Tech Spec | Publish Technical Specifications | Apr 03, 2017 | ✓ |
| Training | External Training - Session 1 | Jan 10, 2018 | ✓ |
| | External Training - Session 2 | Jan 17, 2018 | ✓ |
| Market Sim | Market Simulation | Dec 05, 2017 - Jan 31, 2018 | ✓ |
| Production Deployment | Production Deployment | Mar 05, 2018 | ✓ |
| Production Activation | Production Activation | May 01, 2018 | |

# Spring 2018 – SIBR UI Upgrade

| Project Info | Details/Date |
|---|---|
| Application Software Changes | **SIBR** – The CASIO will be upgrading the underlying SDK platform utilized for displaying the user interface. This latest SDK version will strengthen the security of the SIBR application and will improve compatibility with the latest version of Internet Explorer.<br>It is anticipated no functional changes or API will be impacted by this upgrade. |

| Milestone Type | Milestone Name | Dates | Status |
|---|---|---|---|
| Board Approval | Board Approval | N/A | |
| External BRS | Post Draft BRS | N/A | |
| Config Guides | Configuration Guide | N/A | |
| BPMs | Publish Final Business Practice Manuals | N/A | |
| Tech Spec | Publish Tech Specs | N/A | |
| Training | Conduct External Training | Feb 21, 2018 | ✓ |
| User Guide | SIBR User Guide "Draft" | Dec 14, 2017 | ✓ |
| Market Sim | Market Sim Window | Feb 27, 2018 - Apr 27, 2018 | |
| Production Activation | SIBR WebSDK Upgrade | May 01, 2018 | |

# 2018 Fall Release

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# Fall 2018 Release – Overview

| | Board Approval | External BRS | Config Guide | Tech Spec | Tariff | Draft BPMs | External Training | Market Sim | Activation |
|---|---|---|---|---|---|---|---|---|---|
| **Fall 2018 Release - Overview** | **01/01/18** | **04/06/18** | **05/18/18** | **05/18/18** | **06/15/18** | **07/02/18** | **07/13/18** | **Jul 17, 2018 - Aug 31, 2018** | **10/01/18** |
| Green House Gas Enhancements for EIM | 12/14/17 | TBD | TBD | TBD | TBD | TBD | TBD | TBD | 10/01/18 |
| Contingency Modeling Enhancements | 12/14/17 | 04/27/18 | TBD | TBD | 06/15/18 | TBD | 07/13/18 | Jul 17, 2018 - Aug 31, 2018 | 10/01/18 |
| CCDEBE | 03/22/18 | 04/27/18[1] | 05/18/18 | 05/18/18 | TBD | TBD | TBD | Jul 17, 2018 - Aug 31, 2018 | 10/01/18 |
| Settlements Performance Improvements | N/A | 02/20/18 | N/A | N/A | N/A | N/A | TBD | Jul 17, 2018 - Aug 31, 2018 | 10/01/18 |
| ESDER Phase 2 | 07/26/17 | 03/01/18 | 05/18/18 | 04/26/18 | 04/09/18 | 6/4/2018 | 07/11/18 | Jul 17, 2018 - Aug 31, 2018 | 10/01/18 |
| Generator Contingency and RAS Modeling | 09/19/17 | 03/16/18 | TBD | N/A | 05/25/18 | 6/12/2018 | TBD | Jul 17, 2018 - Aug 27, 2018 | 10/01/18 |
| CPM Risk-of-Retirement Process Enhancements | 11/02/17 | TBD | TBD | TBD | 01/12/18 | TBD | TBD | Jul 17, 2018 - Aug 31, 2018 | 10/01/18 |
| ADS Replacement | N/A | 05/02/18 | N/A | TBD | N/A | TBD | TBD | Jul 17, 2018 - Aug 31, 2018 | 10/01/18 |
| CRR Auction Efficiency | 03/22/18 | 04/26/18 | TBD | TBD | 04/09/18 | 5/25/2018 | TBD | Jul 17, 2018 - Aug 31, 2018 | 10/01/18 |
| EIM Enhancements 2018 | N/A | 04/17/18 | TBD | 05/18/18 | TBD | TBD | TBD | Jul 17, 2018 - Aug 31, 2018 | 10/01/18 |

*Notes:*

1. ISO published the business rules for CCDEBE on Jan 31. Find document under stakeholder processes – Current meeting page http://www.caiso.com/Documents/BusinessRules-CommitmentCosts-DefaultEnergyBidEnhancements.pdf

*TBD items may be inapplicable, or they may have undetermined dates

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# Fall 2018 - Green House Gas Enhancements for EIM

| Project Info | Details/Date |
|---|---|
| Application Software Changes | We are seeking additional stakeholder input given the concerns with the two pass solution that have been identified. At this time, application software changes are not yet known. |
| BPM Changes | Market Instruments<br>Energy Imbalance Market (EIM) |

| Milestone Type | Milestone Name | Dates | Status |
|---|---|---|---|
| Board Approval | Present report to BOG | Dec 14, 2017 | ✔ |
| External BRS | Complete External BRS & Post for MPs | TBD | |
| Config Guides | Post Configuration Guides | TBD | |
| Tech Spec | Publish Technical Specifications | TBD | |
| Tariff | Receive FERC order | TBD | |
| BPMs | Publish Final Business Practice Manuals | TBD | |
| External Training | Deliver external training | TBD | |
| Market Sim | Market Sim Window | TBD | |
| Production Activation | Green House Gas Enhancements for EIM | Oct 01, 2018 | |

# Fall 2018 – Contingency Modeling Enhancements Transmissions

| Project Info | Details/Date |
|---|---|
| Application Software Changes | • Positions available resources so that the ISO has sufficient capability to respond to contingency events and return facilities to normal ratings within the emergency rating time frame<br>• Enhances the LMP formulation to provide market price signal related to this reliability constraint<br>• Creates a Locational Marginal Capacity Price (LMCP) which reflects:<br>    • A resource's opportunity costs<br>    • Marginal congestion cost savings, and/or<br>    • The marginal capacity value to follow dispatch<br>**Systems:**<br>• ADS - Modified to display corrective capacity awards similar to AS<br>• CMRI - New or modified reports to display LMCP prices and awards<br>• IFM/RTM - Model new capacity awards and Locational Marginal Capacity Price (LMCP).<br>• Integration<br>• OASIS - New or modified reports to display LMCP prices and awards<br>• PCA<br>• Settlements |
| BPM Changes | Market Operations, Market Instruments, Definitions and Acronyms, Settlements and Billing |
| Business Process Changes | • Manage Operations Planning<br>• Manage Day-Ahead Market<br>• Manage Operations Engineering Support<br>• Manage Real Time Operations - Transmission & Electric System<br>• Manage Market Billings & Settlements |

# Fall 2018 – Contingency Modeling Enhancements Transmissions

| Milestone Type | Milestone Name | Dates | Status |
|---|---|---|---|
| Board Approval | Obtain Board of Governors Approval (BOG - 12/04/17) | Dec 14, 2017 | ✓ |
| External BRS | Complete and Post External BRS | Apr 27, 2018 | |
| Tariff | File Tariff | Jun 15, 2018 | |
| Config Guides | Design review - BPM and Tariff SMEs | TBD | |
| BPMs | Post Draft BPM changes | TBD | |
| | Publish Final Business Practice Manuals | TBD | |
| Tech Spec | Create ISO Interface Spec (Tech spec) | TBD | |
| External Training | Training Complete | Jul 13, 2018 | |
| Market Sim | Market Sim Window | Jul 17, 2018 - Aug 31, 2018 | |
| Production Activation | Contingency Modeling Enhancements -Transmission | Oct 01, 2018 | |

# Fall 2018 – Commitment Cost and Default Energy Bid Enhancements

| Project Info | Details/Date |
|---|---|
| Application Software Changes | **Scope:**<br>Enhances the ability to submit market-based commitment cost bids in order to reflect unique costs and volatility:<br>• Support integration of renewable resources through incentivizing flexible resources participation during tight fuel supply<br>• Account for costs of flexible resources (gas and non-gas) to reduce risk of insufficient cost recovery<br>• Encourage participation of non-RA and voluntary EIM resources; compliance with FERC Order 831<br>• Raises energy bid cap from $1,000/MWh to $2,000/MWh:<br>• Requires supporting verified costs of energy bids above $1,000/MWh<br>• Introduces market power mitigation (MPM) measures for commitment costs.<br><br>**Impacted Systems:**<br>• SIBR: Incorporate negotiated default commitment bids, allow the submittal of Ex Ante cost adjustments. Increase commitment cost caps, increase energy bid caps, incorporate soft energy bid cap. Allow for hourly submittal of minimum load bids into day-ahead market.<br>• IFM/RTM: Add MPM tests for commitment costs. Mitigate commitment costs where tests indicate market power. Incorporate MPM (both energy and commitment) in short term unit commitment process. Recalibrate the penalty price parameters in response to raising energy bid cap to $2,000/MWh.<br>• CMRI: Provide resource-specific reporting on mitigation results for commitment costs. Provide additional source information for default bids.<br>• MQS/PCA: Incorporate mitigation of commitment costs for specific exceptional dispatch (ED) types. Incorporate bid locking of commitment costs for ED instructions and for certain cases where resources are uneconomic to operating.<br>• Master File: Allow submittal of resource-specific minimum load costs for costs that are independent of the Pmin level. Add the ability to indicate preference for new negotiated cost basis type. Provide a view of resource-specific scalars used for validating Ex-Ante cost adjustments.<br>• CIDI: Incorporate templates for submitting request for manual consultation and ex-post default bid adjustments. |

# Fall 2018 – Commitment Cost and Default Energy Bid Enhancements

| Project Info | Details/Date |
|---|---|
| BPM Changes | • Market Instruments<br>• Market Operations |
| Business Process Changes | • Maintain Major Maintenance Adders (MMG LIII)<br>• Maintain Negotiated Default Energy Bids (MMG LIII)<br>• Maintain Negotiated O_Ms (MMG LIII)<br>• Manage Day Ahead Market (MMG LII)<br>• Manage Market Billing Settlements (MOS LII)<br>• Manage Real Time Hourly Market (RTPD) (MMG LII)<br>• Manage Real Time Operations – Maintain Balance Area (MMG LII) |

| 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 | Complete and Post External BRS | Apr 27, 2018 | |
| Config Guides | Post Draft Config Guides | May 18, 2018 | |
| Tech Spec | Publish Technical Specifications | May 18, 2018 | |
| Tariff | File Tariff | TBD | |
| | Receive FERC Order | TBD | |
| BPMs | Post Draft BPM changes | TBD | |
| External Training | Deliver external training | TBD | |
| Market Sim | Market Sim Window | Jul 17, 2018 - Aug 31, 2018 | |
| Production Activation | CCDEBE | Oct 01, 2018 | |

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# Fall 2018 – Settlement Performance Improvements

| Project Info | Details/Date |
|---|---|
| Application Software Changes | The scope of the Settlements Performance Improvements include:<br>• Performance improvements for Post Bill Determinant Mapping process - Non-production storage issue causing delays to the statement publication<br>• Performance improvements of Statement Generation (BD File Size issue):<br>　　　Daily Statements generation<br>　　　Monthly Statements and Invoice generation<br>Systems: Settlements |
| BPM Changes | Settlements and Billing |
| Business Process Changes | Settlements & Billing: Application Flow should be reviewed for possible changes |

| Config Guides | Milestone Name | Dates | Status |
|---|---|---|---|
| External BRS | Complete and Post External BRS | Feb 20, 2018 | ✓ |
| Tariff | File Tariff | N/A | |
| Config Guides | Design review - BPM and Tariff SMEs | N/A | |
| BPMs | Publish Final Business Practice Manuals | N/A | |
| Tech Spec | Create ISO Interface Spec (Tech spec) | N/A | |
| OTHER | Settlement Interface Specification for Scheduling Coordinators | Mar 16, 2018 | ✓ |
| External Training | External Training Complete | Jul 13, 2018 | |
| Market Sim | Market Sim Window | Jul 17, 2018 - Aug 31, 2018 | |
| Production Activation | Settlements Performance Improvements | Oct 01, 2018 | |

# Fall 2018 – ESDER Phase 2

| Project Info | Details/Date |
|---|---|
| Application Software Changes | **Settlements:**<br>• Alternative Baselines:<br>    • Possible system changes to include addition of an automated monitoring tool for performance measurement data received from external participants.<br>    • Changes to the DRRS registration system for the selection of the new baselines and allowing for ISO approval prior to use in the market.<br>    • Settlement configuration will need to be evaluated and revised to assure PDRs that provide AS services can be calculated correctly based on the submitted SQMD.<br>**ECIC:**<br>• EIM Net Benefits Testing:<br>    • Code modification to calculation to accommodate addition of all applicable gas price indices.<br>**MRI-S:**<br>• Alternative Baselines:<br>    • The DRS Decommissioning project seeks to retire the current DRS system. Once this system is retired all current functionality will reside in the MRI-S (Market Results Interface – Settlements) system. It should be noted that all available customer load baseline calculations will be submitted into the MRI-S system once the DRS system is retired. |
| BPM Changes | **Market Instruments:**<br>• EIM Net Benefits Testing:<br>    • Changes will include addition of all gas price indices used in calculation.<br>**Metering:**<br>• Alternative Baselines:<br>    • Need to revise the BPM to explain new baselines and changes to existing systems.<br>• Station Power:<br>    • Need to revise BPM to provide examples of wholesale/retail uses for generation and storage<br>    • Need to revise BPM to clarify permitted/prohibited netting rules.<br>**Definitions & Acronyms:**<br>• Station Power:<br>    • Revision of Station Power definition to match Tariff language.<br>**Settlements & Billing:**<br>• Alternative Baselines:<br>    • Possible changes to reflect settlements configuration changes. |

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# Fall 2018 – ESDER Phase 2

| Project Info | Details/Date |
|---|---|
| Business Process Changes | • Develop Infrastructure (DI) (80001)<br>• Manage Market & Reliability Data & Modeling (MMR) (80004)<br>• Manage Operations Support & Settlements (MOS) (80007)<br>• Support Business Services (SBS) (80009)<br>• Other |

| Milestone Type | Milestone Name | Dates | Status |
|---|---|---|---|
| Board Approval | Obtain Board of Governors Approval | Jul 26, 2017 | ✓ |
| External BRS | Post External BRS | Oct 17, 2017 | ✓ |
|  | Post Revised External BRS | Mar 01, 2018 | ✓ |
| Tariff | Post Draft Tariff | Nov 17, 2017 | ✓ |
|  | Post Updated Draft Tariff (based on feedback) | Apr 09, 2018 | ✓ |
| CPG | Next CPG Meeting | Apr 24, 2018 | |
| Tech Spec | Publish  ISO Interface Spec (Tech spec) | Apr 26, 2018 | |
| Config Guides | Settlements Config Guides | May 18, 2018 | |
| BPMs | Post Draft BPM changes | Jun 04, 2018 | |
| External Training | Deliver External Training | Jul 11, 2018 | |
| Market Sim | Market Sim Window | Jul 17, 2018 - Aug 31, 2018 | |
| Production Activation | ESDER Phase 2 | Oct 01, 2018 | |

# Fall 2018 – Generator Contingency and Remedial Action Scheme Modeling

| Project Info | Details/Date |
|---|---|
| Application Software Changes | • Enhance the Security Constrained Economic Dispatch<br>   • Model generation/load loss in the dispatch<br>   • Model transmission loss along and generation/load loss due to RAS operation dispatch<br>   • Model transmission reconfiguration due to RAS operation in the dispatch<br>• Update the congestion component of LMP so that it considers the cost of positioning the system to account for generator contingencies and RAS operations<br>• Enhance DAM, RTM and EIM to support generator contingencies<br>Impacted systems:<br>• IFM/RTM, CRR, MF |
| BPM Changes | • Managing Full Network Model<br>• CRR<br>• Market Operations<br>• EIM |
| Business Process Changes | • Manage Congestion Revenue Rights (MMR LII)<br>• Manage Operations Planning<br>• Manage Real Time Operations - Transmission & Electric System (MMG LII) |

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# Fall 2018 – Generator Contingency and Remedial Action Scheme Modeling

| Milestone Type | Milestone Name | Dates | Status |
|---|---|---|---|
| Board Approval | Obtain Board of Governors Approval | Sep 19, 2017 | ✓ |
| External BRS | Complete and Post External BRS | Mar 16, 2018 | ✓ |
| Tariff | File Tariff | May 25, 2018 | |
| Config Guides | Design review - BPM and Tariff SMEs | TBD | |
| BPMs | Post Draft BPM changes | Jun 12, 2018 | |
| | Publish Final Business Practice Manuals | Jul 02, 2018 | |
| Tech Spec | Create ISO Interface Spec (Tech spec) | N/A | |
| External Training | Deliver external business training | Jul 13, 2018 | |
| Market Sim | Market Sim Window | Jul 17, 2018 - Aug 27, 2018 | |
| Production Activation | Generator Contingency and RAS Modeling | Oct 01, 2018 | |

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# Fall 2018 – CPM Risk-of-Retirement Process Enhancements

| Project Info | Details/Date |
|---|---|
| Application Software Changes | Impacted systems:<br><br>RA System<br>Access Provisioning (AIM) |
| BPM Changes | Reliability Requirements |
| Business Process Changes | Manage CPM Risk of Retirement Resources |

| Milestone Type | Milestone Name | Dates | Status |
|---|---|---|---|
| Board Approval | Obtain Board of Governors Approval | Nov 02, 2017 | ✓ |
| External BRS | External BRS Posted | TBD | |
| Tariff | File Tariff | Jan 12, 2018 | ✓ |
| | Receive FERC order | TBD | |
| Config Guides | Post Draft Config Guides | TBD | |
| BPMs | Post Draft BPM changes | TBD | |
| | Publish Final Business Practice Manuals | TBD | |
| Tech Spec | Create ISO Interface Spec (Tech spec) | TBD | |
| External Training | Deliver external business training | TBD | |
| Market Sim | Market Sim Window | Jul 17, 2018 - Aug 31, 2018 | |
| Production Activation | CPM Risk-of-Retirement Process Enhancements | Oct 01, 2018 | |

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# Fall 2018 – ADS Replacement

| Project Info | Details/Date |
|---|---|
| Application Software Changes | • Transition to web-based user interface to eliminate the need to install thick client<br>• Transition ADS provisioning to the Access and Identity Management (AIM) application including Resource Level Access Controls (RACL) access<br>• Move historical ADS data to CMRI adding query tool functionality to CMRI also<br>• Move near-term transactions for FERC-764 15-minute awards to ADS; This will include user interface and a new B2B service; Historical transactions will stay in CMRI.<br>• Various user interface enhancements adding content per Operation's request<br>• Eliminate the ECN requirement for ADS B2B services (remove adsta.caiso.com)<br>• ADS B2B services will not otherwise change. |
| BPM Changes | To Be Determined |
| Business Process Changes | To Be Determined |

| Milestone Type | Milestone Name | Dates | Status |
|---|---|---|---|
| Board Approval | Obtain Board of Governors Approval | N/A | |
| External BRS | Post External BRS | May 02, 2018 | |
| Tariff | File Tariff | N/A | |
| Config Guides | Design review - BPM and Tariff SMEs | TBD | |
| BPMs | Publish Final Business Practice Manuals | TBD | |
| Tech Spec | Publish Technical Specifications | TBD | |
| External Training | Conduct External Training | TBD | |
| Market Sim | Market Sim Window | TBD | |
| Production Activation | ADS Replacement | Oct 01, 2018 | |

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# Fall 2018 - CRR Auction Efficiency

| Project Info | Details/Date |
|---|---|
| Application Software Changes | CRR Auction Efficiency project is focused on enhancements to:<br>• Information received and used for the CRR allocations and auction<br>• CRR software to support a mechanism to allow market participants to sell previously acquired CRRs into subsequent auctions<br>System Impacts: CRR, OMS, OASIS. |
| BPM Changes | • CRR            • Outage Management<br>• Credit Management and Market Clearing  • Settlements & Billing<br>• Market Instruments |
| Business Process Changes | • Manage Market & Reliability Data & Modeling (MMR)<br>• Manage Markets & Grid (MMG) |

| Milestone Type | Milestone Name | Dates | Status |
|---|---|---|---|
| Board Approval | BOG Presentation and Approval | Mar 22, 2018 | ✓ |
| External BRS | Post External BRS | Apr 26, 2018 | |
| Tariff | File Tariff | Apr 09, 2018 | |
| Config Guides | Design review - BPM and Tariff SMEs | TBD | |
| BPMs | Post Draft BPM changes | May 25, 2018 | |
| | Publish Final Business Practice Manuals | Jul 02, 2018 | |
| Tech Spec | Create ISO Interface Spec (Tech spec) | TBD | |
| External Training | Deliver external training | Jul 13, 2018 | |
| Market Sim | Market Sim Window | Jul 17, 2018 - Aug 31, 2018 | |
| Production Activation | CRR Auction Efficiency | Oct 01, 2018 | |

# Fall 2018 – EIM Enhancements 2018

| Project Info | Details/Date |
|---|---|
| Application Software Changes | • Markets to enforce new ETSR Ramp Rate constraints (both single and aggregate) Markets to exclude Flex Ramp provision of EIM BAAs undergoing contingency<br>• ISO contingency market runs to concurrently provide 10-minute contingency reserve dispatch interval for CISO, and 5-minute clock interval dispatches/prices for EIM BAAs<br>• Enhancement to BAAOP EIM operator screens to review active market data<br>• **Systems:**<br>• BAAOP – New display screens presenting current market data for market data submissions<br>• Market Applications –<br>  • Include ETSR ramp rate constraints at both Individual and Aggregate<br>  • Exclude Flex Ramp Product provision for EIM BAAs undergoing contingency (FRU/FRD awards and prices set to zero); EIM Area footprint's FRP requirements are reduced by a diversity benefit pro rata amount based on excluded EIM BAAs<br>  • No changes for CISO BAA, EIM BAAs will receive optimized MW dispatches and prices from RTCD run instead of the last successful RTD run's MW dispatches with RTCD prices<br>• Master File – Registration supported of single and aggregate ETSR ramp rates by associated EIM BAAs<br>• Integration – No B2B API impacts |
| BPM Changes | Energy Imbalance Market (EIM), Market Instruments, Market Operations |
| Business Process Changes | • Manage Entity & Resource Maintenance Updates<br>• Manage Real Time Interchange Scheduling<br>• Manage Real Time Operations- Maintain Balancing Area<br>• Perform Price Validation, Manage Price Corrections<br>• Manage Market Billings & Settlements |

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# Fall Release – EIM Enhancements 2018

| Milestone Type | Milestone Name | Dates | Status |
|---|---|---|---|
| Board Approval | Board of Governors Approval | N/A | |
| External BRS | Post External BRS | Apr 17, 2018 | |
| Config Guides | Post Config Guides | TBD | |
| BPMs | Post Draft BPM changes | TBD | |
| | Publish Final Business Practice Manuals | TBD | |
| Tech Spec | Create ISO Interface Spec (Tech spec) | May 18, 2018 | |
| Market Sim | Market Sim Window | Jul 17, 2018 - Aug 31, 2018 | |
| External Training | Deliver external training | TBD | |
| Production Activation | EIM Enhancements 2018 | Oct 01, 2018 | |

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# 2019 Spring Release

# Spring 2019 – EIM BANC/SMUD

| Project Info | Details/Date |
|---|---|
| Application Software Changes | Implementation of SMUD as an EIM Entity |
| BPM Changes | EIM BPM will be updated if needed to reflect new modeling scenarios identified during implementation and feedback from SMUD. |
| Market Simulation | December 3, 2018 – January 31, 2019 |
| Parallel Operations | February 1, 2019 – March 30, 2019 |

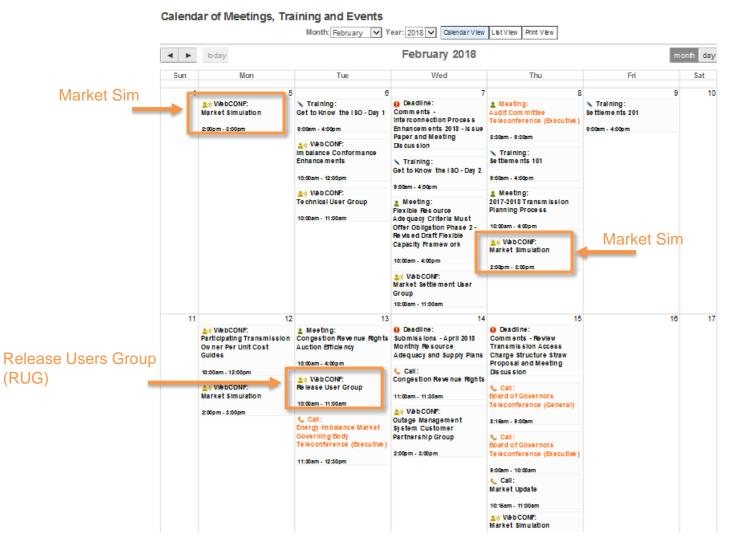| Config Guides | Milestone Name | Dates | Status |
|---|---|---|---|
| Tariff | File Readiness Certification | Mar 01, 2019 | |
| Market Sim | Market Sim Window | Dec 03, 2018 - Jan 30, 2019 | |
| Parallel Operations | Parallel Operations | Mar 30, 2019 | |
| Production Activation | EIM - BANC-SMUD | Apr 01, 2019 | |

# 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 sim calls for major releases will be market noticed
  - 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

Market Sim

Market Sim

Release Users Group (RUG)

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