



Release User Group Agenda

May 8th, 2018

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>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.</p>	

Release User Group Agenda

May 8th, 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 Sandhya Balasubramanian Brett Bruderer Eureka Cullado Marcelo Da Costa Ayman Fattah Jami Herguth Cynthia Hinman Elli Johnston Mohan Koya Deann MacDougall Christopher McIntosh LeAnne McLaughlin Indu Nambiar Prince Phillip Raymond Riley LuAnn Rivera Marci Stuckey Craig Williams John Williams Justin Wong

The ISO offers innovative training programs

Date	Training <small>All classes are offered at our Folsom, CA campus unless noted otherwise</small>
July 18	Welcome to the ISO webinar
August 14-15	Get to Know the ISO
September 13	Settlements 101
September 14	Settlements 201

New Release Training materials currently posted

- Welcome to the ISO recorded webinar
- Resource Interconnection Management System (RIMS) Generation Module
- Scheduling Infrastructure Business Rules (SIBR) User Interface (UI) Update
- RSI: Outage Substitution and RAAIM Pre-Calc
- Energy Imbalance Market Winter Release 2017
- Reliability Services Initiative (RSI) Training Phase 1B & 2



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, recorded webinars and new release training materials at:

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

Contact us: CustomerTraining@caiso.com

Release Plan Summary: 2018

Independent 2018

- ~~Resource Interconnection Management System (RIMS) Functional Enhancements~~
- ~~Deactivation of Transport Layer Security (TLS) 1.0 & 1.1~~
- Commitment Cost Enhancement (CCE) Phase 3
- **Automated Dispatch System (ADS) User Interface (UI) Replacement**

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

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
- Congestion Revenue Right (CRR) Auction Efficiency 1A
- EIM 2018 Enhancements

Release Plan Summary: 2019 – Spring 2020

Independent 2019

- Black Start and System Restoration Phase 2

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

TBD – tentative, subject to impact assessment

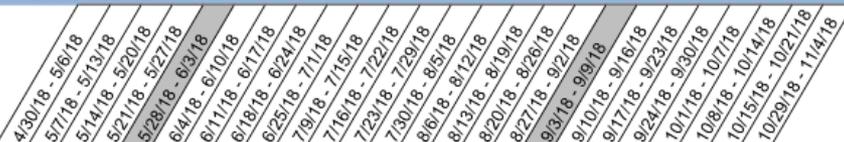
- Imbalance Conformance Enhancements (ICE)
- Congestion Revenue Right Auction Efficiency 1B
- Clarification of Tariff Rules Regarding Following DOT
- Review of RMR and CPM
- Storage as a Transmission Facility
- Intertie Deviation Settlement
- EIM Offer Rules

Release Schedule - 2018

Date of Data Refresh: 5/4/18 8:09 AM



Legend	
Market Simulation	Orange
CA ISO Holiday	Grey
Deployment Week	Blue



Map Stage Environment Window

CCE3: March Master File Testing	CCE3: March Master File Testing (03/26-05/04)
CCE3: March Master File Market Simulation Testing - Market Sim	CCE3: March Master File Market Simulation Testing - Market Sim (03/26-05/04)
SIBR WebSDK Upgrade	SIBR WebSDK Upgrade (02/16-05/11)
SIBR WebSDK Upgrade - Market Sim	SIBR WebSDK Upgrade - Market Sim (02/27-05/11)
FNM Promotion 2018Q2	FNM Promotion 2018Q2 (06/20-06/21)
CCDEBE	CCDEBE (07/12-09/06)
CCDEBE - Market Sim	CCDEBE - Market Sim (07/17-08/31)
Contingency Modeling Enhancements	Contingency Modeling Enhancements (07/17-08/31)
Contingency Modeling Enhancements - Market Sim	Contingency Modeling Enhancements - Market Sim (07/17-08/31)
Generator Contingency and RAS Modeling	Generator Contingency and RAS Modeling (07/17-08/31)
Generator Contingency and RAS Modeling - Market Sim	Generator Contingency and RAS Modeling - Market Sim (07/17-08/31)
Settlements Performance Improvements	Settlements Performance Improvements (07/17-08/31)
Settlements Performance Improvements - Market Sim	Settlements Performance Improvements - Market Sim (07/17-08/31)
ESDER Phase 2	ESDER Phase 2 (07/16-08/31)
ESDER Phase 2 - Market Sim	ESDER Phase 2 - Market Sim (07/17-08/31)
CRR Auction Efficiency	CRR Auction Efficiency (07/17-08/31)
CRR Auction Efficiency - Market Sim	CRR Auction Efficiency - Market Sim (07/17-08/31)
EIM Enhancements 2018	EIM Enhancements 2018 (07/17-08/31)
EIM Enhancements 2018 - Market Sim	EIM Enhancements 2018 - Market Sim (07/17-08/31)
CCE3 September Full Market Testing	CCE3 September Full Market Testing (09/04-10/08)
CEE3: September Full Market Simulation - Market Sim	CEE3: September Full Market Simulation - Market Sim (09/04-10/01)
FNM Promotion 2018Q3	FNM Promotion 2018Q3 (09/19-09/20)

PROD Environment Window

CCE3 Deployment to Production	CCE3 Deployment to Production (05/16-05/16)
SIBR WebSDK Upgrade	SIBR WebSDK Upgrade (05/15-05/15)
FNM Promotion 2018Q2	FNM Promotion 2018Q2 (05/22-05/24)
EIM Enhancements 2017 - Phase 2	EIM Enhancements 2017 - Phase 2 (05/23-05/23)
Back-end and ECIC UI drop	Back-end and ECIC UI drop (06/05-06/05)
RAAIM Implementation Update	RAAIM Implementation Update (07/01-07/01)
FNM Promotion 2018Q3	FNM Promotion 2018Q3 (08/21-08/23)
Green House Gas Enhancements for EIM	Green House Gas Enhancements for EIM (10/01-10/01)
Master File GRDT Clarifications	Master File GRDT Clarifications (10/01-10/01)
Discontinue Min/Worst Ramp Rate	Discontinue Min/Worst Ramp Rate (10/01-10/01)
EIM Enhancements 2018	EIM Enhancements 2018 (10/01-10/01)
CCDEBE	CCDEBE (10/01-10/01)
Contingency Modeling Enhancements	Contingency Modeling Enhancements (10/01-10/01)
Generator Contingency and RAS Modeling	Generator Contingency and RAS Modeling (10/01-10/01)
Settlements Performance Improvements	Settlements Performance Improvements (10/01-10/01)
ESDER Phase 2	ESDER Phase 2 (10/01-10/01)
CRR Auction Efficiency	CRR Auction Efficiency (10/01-10/01)
CCE3 Activation in Production	CCE3 Activation in Production (11/01-11/01)

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



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UI and API Changes

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
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
	EIM WNTR	New	CAISO Market	Adopt when ready	Tab: Real-Time New Report: Resource Operating Limits	TBD	TBD	TBD	TBD	TBD	TBD
	EIM WNTR	New	CAISO Market	Adopt when ready	Tab: EIM New Report: Resource Operating Limits	TBD	TBD	TBD	TBD	TBD	TBD

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	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
Spring 2018	BRE-B CCE3 RSI	Modify	CAISO & EIM Market	Required to provide CCE3 values		retrieveGeneratorRDT	4	20180501	March 2018	5/16/2018	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	5/16/2018	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	5/16/2018	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	5/16/2018	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

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 SC may update value via the GRDT/Master File UI, but no market impact until Fall 2018	Fall 2018
Power Price Hub	Spring 2018 CAISO will populate	Fall 2018
Market Ramp Rate (Operational, Operating Reserve, Regulation)	Spring 2018 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 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 SC may update value via the GRDT/Master File UI, but no market impact until Fall 2018	Fall 2018
Transition: Implied Starts	Spring 2018 Value is derived from Configuration Implied Starts. No market impact until Fall 2018	Fall 2018

2018 Independent Projects

2018 - Commitment Cost Enhancements Phase 3

Project Info	Details/Date
Application Software Changes	<p>Scope:</p> <ol style="list-style-type: none"> 1. Clarify use-limited registration process and documentation to determine opportunity costs 2. Determine if the ISO can calculate opportunity costs <ul style="list-style-type: none"> • ISO calculated; Modeled limitation Start/run hour/energy output • Market Participant calculated; Negotiated limitation 3. Clarify definition of “use-limited”; <i>add MSG Configuration ID to ULPDT</i> 4. Change Nature of Work attributes (Outage cards) <ul style="list-style-type: none"> • Modify use-limited reached for RAAIM Treatment • Allow PDR to submit use-limit outage card for fatigue break. 5. Market Characteristics (<i>to be added to GRDT</i>) <ul style="list-style-type: none"> • Maximum Daily Starts • Maximum MSG transitions • Ramp rates <p>Impacted Systems:</p> <ol style="list-style-type: none"> 1. Master File: Set use-limited resource types and limits; Set market-based values 2. ECIC: Process use limited resource input values for and Receive opportunity cost adders from opportunity cost tool 3. CIRA: RAAIM exempt rule for “use-limited reached” 4. CMRI: Publish opportunity cost 5. IFM/RTN: Use market-based values MDS, MDMT and RR 6. SIBR: Add Opportunity cost adders on bid caps, remove daily bid RR 7. OMS: “Use-Limited Reached” nature of work attribute for Generation Outage Card 8. Settlements: Publish the actual start up, run hour and energy output for the use-limited resources 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	<ul style="list-style-type: none"> • Manage Market & Reliability Data & Modeling • 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 24, 2018	
External Training	Deliver External Training	Aug 28, 2018	
Market Simulation	March Master File Market Simulation Testing	Mar 26, 2018 - May 04, 2018	
	September Full Market Simulation	Sep 04, 2018 - Oct 01, 2018	
Production Activation	CCE3 Activation in Production	Nov 01, 2018	
	CCE3 Deployment to Production	May 16, 2018	

2018 – 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 • Move historical ADS data to CMRI adding query tool functionality to CMRI also • 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. • Various user interface enhancements adding content per Operation's request • 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	TBD	
Tariff	File Tariff	N/A	
Config Guides	Design review - BPM and Tariff SMEs	N/A	
BPMs	Publish Final Business Practice Manuals	TBD	
Tech Spec	Publish Technical Specifications	TBD	
Market Sim	Market Sim Window	TBD	
External Training	Conduct External Training	TBD	
Production Activation	ADS Replacement	Dec 01, 2018	

2018 Spring Release

Spring 2018 – RAIM Calculation Modifications

Project Info	Details/Date
Application Software Changes	<p>RAAIM (Resource Adequacy Availability Incentive Mechanism) – California ISO intends to release a new RAIM Calculation Modifications within the Settlements system.</p> <p>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.</p> <p>For Configuration Guides, please refer to CG PC RA Availability Incentive Mechanism v5.4, CC 8830 v5.2, and CC 8831 v5.1.</p>

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 RAIM penalties and incentives become financially binding on 7/1/2018 going forward.	July 1, 2018	

Spring 2018 – SIBR UI Upgrade

Project Info	Details/Date
Application Software Changes	<p>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.</p> <p>It is anticipated no functional changes or API will be impacted by this upgrade.</p>

Milestone Type	Milestone Name	Dates	Status
Board Approval	Board Approval	N/A	
External BRS	Post Draft BRS	N/A	
Tariff	Receive FERC Order	TBD	
	Receive FERC Order	N/A	
Config Guides	Configuration Guide	N/A	
BPMs	Publish Final Business Practice Manuals	N/A	
Tech Spec	Publish Tech Specs	N/A	
User Guide	SIBR User Guide “Draft”	Dec 14, 2017	✓
Market Sim	Market Sim Window	Feb 27, 2018 - May 11, 2018	
External Training	Conduct External Training	Feb 21, 2018	✓
Production Activation	SIBR WebSDK Upgrade	May 15, 2018	

2018 Fall Release

Fall 2018 Release – Overview

	Board Approval	External BRS	Config Guide	Tech Spec	Tariff	BPMs	External Training	Market Sim	Production 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	05/11/18	TBD	TBD	06/01/18	07/02/18	TBD	Jul 17, 2018 - Aug 31, 2018	10/01/18
CCDEBE	03/22/18	04/27/18 ¹	05/18/18	TBD	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	07/10/18	Jul 17, 2018 - Aug 31, 2018	10/01/18
ESDER Phase 2	07/26/17	03/01/18	05/18/18	05/18/18	06/01/18	06/04/18	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	05/30/18	07/02/18	07/09/18	Jul 17, 2018 - Aug 31, 2018	10/01/18
CRR Auction Efficiency	03/22/18	05/11/18	TBD	TBD	04/09/18	07/02/18	06/13/18	Jul 17, 2018 - Aug 31, 2018	10/01/18
EIM Enhancements 2018	N/A	04/30/2018	6/1/2018	TBD	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

Items in BLUE are **complete**

Items in RED indicate a **new** date which is later than the target date listed on the Overview line.

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 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	
Tech Spec	Publish Technical Specifications	TBD	
Tariff	Receive FERC Order	TBD	
Config Guides	Post Configuration Guides	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	<ul style="list-style-type: none"> • 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 • Enhances the LMP formulation to provide market price signal related to this reliability constraint • Creates a Locational Marginal Capacity Price (LMCP) which reflects: <ul style="list-style-type: none"> • A resource’s opportunity costs • Marginal congestion cost savings, and/or • The marginal capacity value to follow dispatch <p>Systems:</p> <ul style="list-style-type: none"> • ADS - Modified to display corrective capacity awards similar to AS • CMRI - New or modified reports to display LMCP prices and awards • IFM/RTM - Model new capacity awards and Locational Marginal Capacity Price (LMCP). • Integration • OASIS - New or modified reports to display LMCP prices and awards • PCA • Settlements
BPM Changes	Market Operations, Market Instruments, Definitions and Acronyms, Settlements and Billing
Business Process Changes	<ul style="list-style-type: none"> • Manage Operations Planning • Manage Day-Ahead Market • Manage Operations Engineering Support • Manage Real Time Operations - Transmission & Electric System • 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	May 11, 2018	
Tariff	File Tariff	Jun 01, 2018	
	Receive FERC Approval	Aug 01, 2018	
Config Guides	Post Configuration Guide(s) (Draft)	TBD	
BPMs	Post BPM (Draft)	May 31, 2018	
	Publish Final Business Practice Manuals	Jul 02, 2018	
Tech Spec	Create ISO Interface Spec (Tech spec)	TBD	
External Training	Deliver External Training	TBD	
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	<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"> • Support integration of renewable resources through incentivizing flexible resources participation during tight fuel supply • Account for costs of flexible resources (gas and non-gas) to reduce risk of insufficient cost recovery • Encourage participation of non-RA and voluntary EIM resources; compliance with FERC Order 831 • Raises energy bid cap from \$1,000/MWh to \$2,000/MWh: • Requires supporting verified costs of energy bids above \$1,000/MWh • Introduces market power mitigation (MPM) measures for commitment costs. <p><u>Impacted Systems:</u></p> <ul style="list-style-type: none"> • 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. • 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. • CMRI: Provide resource-specific reporting on mitigation results for commitment costs. Provide additional source information for default bids. • 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. • 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. • 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	<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)

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	✓
Tech Spec	Publish Technical Specifications	TBD	
Tariff	File Tariff	TBD	
	Receive FERC Order	TBD	
Config Guides	Post Draft Config Guides	May 18, 2018	
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	

Fall 2018 – Settlement Performance Improvements

Project Info	Details/Date
Application Software Changes	<p>The scope of the Settlements Performance Improvements include:</p> <ul style="list-style-type: none"> Performance improvements for Post Bill Determinant Mapping process - Non-production storage issue causing delays to the statement publication Performance improvements of Statement Generation (BD File Size issue): <ul style="list-style-type: none"> Daily Statements generation Monthly Statements and Invoice generation <p>Systems: Settlements</p>
BPM Changes	Settlements and Billing
Business Process Changes	Settlements & Billing: Application Flow should be reviewed for possible changes

Milestone Type	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	Milestone: Training Complete	Jul 10, 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	<p>Settlements:</p> <ul style="list-style-type: none"> • Alternative Baselines: <ul style="list-style-type: none"> • Possible system changes to include addition of an automated monitoring tool for performance measurement data received from external participants. • Changes to the DRRS registration system for the selection of the new baselines and allowing for ISO approval prior to use in the market. • 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. <p>ECIC:</p> <ul style="list-style-type: none"> • EIM Net Benefits Testing: <ul style="list-style-type: none"> • Code modification to calculation to accommodate addition of all applicable gas price indices. <p>MRI-S:</p> <ul style="list-style-type: none"> • Alternative Baselines: <ul style="list-style-type: none"> • 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	<p>Market Instruments:</p> <ul style="list-style-type: none"> • EIM Net Benefits Testing: <ul style="list-style-type: none"> • Changes will include addition of all gas price indices used in calculation. <p>Metering:</p> <ul style="list-style-type: none"> • Alternative Baselines: <ul style="list-style-type: none"> • Need to revise the BPM to explain new baselines and changes to existing systems. • Station Power: <ul style="list-style-type: none"> • Need to revise BPM to provide examples of wholesale/retail uses for generation and storage • Need to revise BPM to clarify permitted/prohibited netting rules. <p>Definitions & Acronyms:</p> <ul style="list-style-type: none"> • Station Power: <ul style="list-style-type: none"> • Revision of Station Power definition to match Tariff language. <p>Settlements & Billing:</p> <ul style="list-style-type: none"> • Alternative Baselines: <ul style="list-style-type: none"> • Possible changes to reflect settlements configuration changes.

Fall 2018 – ESDER Phase 2

Project Info	Details/Date
Business Process Changes	<ul style="list-style-type: none"> • Develop Infrastructure (DI) (80001) • Manage Market & Reliability Data & Modeling (MMR) (80004) • Manage Operations Support & Settlements (MOS) (80007) • Support Business Services (SBS) (80009) • 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	May 22, 2018	
Tech Spec	Publish ISO Interface Spec (Tech spec)	May 18, 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	<ul style="list-style-type: none">• Enhance the Security Constrained Economic Dispatch<ul style="list-style-type: none">• Model generation/load loss in the dispatch• Model transmission loss along and generation/load loss due to RAS operation dispatch• Model transmission reconfiguration due to RAS operation in the dispatch• Update the congestion component of LMP so that it considers the cost of positioning the system to account for generator contingencies and RAS operations• Enhance DAM, RTM and EIM to support generator contingencies Impacted systems: <ul style="list-style-type: none">• IFM/RTM, CRR, MF
BPM Changes	<ul style="list-style-type: none">• Managing Full Network Model• CRR• Market Operations• EIM
Business Process Changes	<ul style="list-style-type: none">• Manage Congestion Revenue Rights (MMR LII)• Manage Operations Planning• Manage Real Time Operations - Transmission & Electric System (MMG LII)

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 30, 2018	
Config Guides	Post Draft Config Guides	TBD	
BPMs	Post Draft BPM changes	Jul 02, 2018	
	Publish Final Business Practice Manuals	Sep 18, 2018	
Tech Spec	Create ISO Interface Spec (Tech spec)	N/A	
External Training	Deliver external business training	Jul 09, 2018	
Market Sim	Market Sim Window	Jul 17, 2018 - Aug 31, 2018	
Production Activation	Generator Contingency and RAS Modeling	Oct 01, 2018	

Fall 2018 - CRR Auction Efficiency – Track 1A

Project Info	Details/Date	
Application Software Changes	CRR Auction Efficiency project is focused on enhancements to: <ul style="list-style-type: none"> • Information received and used for the CRR allocations and auction • CRR software to support a mechanism to allow market participants to sell previously acquired CRRs into subsequent auctions System Impacts: CRR, OMS, OASIS.	
BPM Changes	<ul style="list-style-type: none"> • CRR • Credit Management and Market Clearing • Market Instruments 	<ul style="list-style-type: none"> • Outage Management • Settlements & Billing
Business Process Changes	<ul style="list-style-type: none"> • Manage Market & Reliability Data & Modeling (MMR) • Manage Markets & Grid (MMG) 	

Milestone Type	Milestone Name	Dates	Status
Board Approval	BOG Presentation and Approval	Mar 22, 2018	✓
Tariff	File Tariff	Apr 09, 2018	✓
External BRS	Post External Draft BRS	May 11, 2018	
Config Guides	Post Draft Configuration Guides	TBD	
BPMs	Post BPM (Draft)	May 21, 2018	
	Publish Final Business Practice Manuals	Jul 02, 2018	
Tech Spec	Create ISO Interface Spec (Tech spec)	TBD	
External Training	Deliver External Training	Jun 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	<ul style="list-style-type: none"> • Markets to enforce new ETSR Ramp Rate constraints (both single and aggregate) • Markets to exclude Flex Ramp provision of EIM BAAs undergoing contingency • ISO Enhancement to BAAOP EIM operator screens to review active market data; all BAA operators receive notifications when ETSR limits enforced in real-time <p>Systems:</p> <ul style="list-style-type: none"> • BAAOP – New display screens presenting active market data for market data submissions; ETSR enforcements notification for all BAAs (includes constraint information) • Market Applications <ul style="list-style-type: none"> • Include ETSR ramping constraints at both Individual and Aggregate levels • 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 • Master File – Registration supported of single and aggregate ETSR ramping constraints by associated EIM BAAs • OASIS – new report displays real-time intervals where BAAs (ISO and EIM) are in contingency • Integration – No CMRI B2B API impacts; OASIS API will support new report
BPM Changes	Energy Imbalance Market (EIM), Market Instruments, Market Operations
Business Process Changes	<ul style="list-style-type: none"> • Manage Entity & Resource Maintenance Updates • Manage Real Time Interchange Scheduling • Manage Real Time Operations- Maintain Balancing Area • Perform Price Validation, Manage Price Corrections • Manage Market Billings & Settlements

Fall 2018 – EIM Enhancements 2018

Milestone Type	Milestone Name	Dates	Status
Board Approval	Board of Governors Approval	N/A	
External BRS	Post External BRS	Apr 30, 2018	✓
Tariff	File Tariff	TBD	
	Receive FERC Order	N/A	
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)	TBD	
Market Sim	Market Sim Window	Jul 17, 2018 - Aug 31, 2018	
Production Activation	EIM Enhancements 2018	Oct 01, 2018	
External Training	Deliver External Training	TBD	

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

Milestone Type	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 03, 2019	

2019 Fall Release

Fall 2019 – Day Ahead Market Enhancements

Project Info	Details/Date
Application Software Changes	<p>This are preliminary impact assessments</p> <p>DAM Enhancements include change the day-ahead market from hourly to 15 minute granularity, combine IFM and RUC, procure imbalance reserves</p> <ul style="list-style-type: none"> • Calculate Imbalance Reserve (IR) Requirements in 15 minute interval (DAM) • EIM interface to submit Base schedule in 15 minute interval (BSAP) • EIM balance test, capacity test and sufficient test in 15 minute interval (RTM) • Report DAM market results in 15 minute Interval (CMRI) • MP can bid IRU and IRD price in SIBR • DAM co-optimize Energy, AS and IR in 15 minute intervals (DAM) • Remove RUC • Get as self-scheduled 15 minute DAM award of energy in RTM if no real time bids (RTM) • Calculate Settlement DAM Expected Energy in 15 minute interval (RTM) • Calculate Bid cost recovery (MQS) • Settle DAM based on 5 minute interval schedules (Settlement) • Settle CRR in DAM 15 minute intervals (Settlement) • Publish DAM energy and AS requirements and prices in 15 minute interval in OASIS
BPM Changes	Market Instruments, Market Operations, Settlements & Billing, Energy Imbalance markets
Business Process Changes	<ul style="list-style-type: none"> • Manage Day Ahead Market • Manage D+X analysis • Manage Real Time Operations- Maintain Balancing Area • Manage Market Billings & Settlements

Fall 2019 – Day Ahead Market Enhancements

Milestone Type	Milestone Name	Dates	Status
Board Approval	Obtain Board of Governors Approval	Sep 06, 2018	
External BRS	External BRS	TBD	
Tariff	File Tariff	TBD	
	Receive FERC Order	TBD	
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	
Market Sim	Market Sim Window	TBD	
Production Activation	DAM Enhancements	Oct 01, 2019	

OASIS - Hourly RTM LAP Prices

ATLAS Reference

Minor change in the “Publications and Revisions” report to show the price corrections being made at the operating hour level.

- The entry in the “Atlas Reference - Publications and Revisions” currently shows 1 row as it’s a daily payload (once per day). But to accommodate the incremental corrections, this will be 24 rows (one per hour) for the daily payload.
- As there is no change to the publication schedule of the payload, there will not be any changes to “Atlas -Publication Schedule” report.

This change will be deployed to production on 5/15/2018

Hourly RTM LAP Prices

Original publication

California ISO OASIS

ATLAS REFERENCE REPORT DEFINITION PRICES TRANSMISSION SYSTEM DEMAND ENERGY ANCILLARY SERVICES CONGESTION REVENUE RIGHTS PUBLIC BID

Date From: 04/27/2018 To: 04/27/2018 Market: RTM Oasis Section: PRICES Version: [ALL] Status: [ALL]

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Publications and Revisions

Publication Date Time	OASIS Section	Operating Day	Operating Hours	Operating Interval	Publication Name	Market	Version	Status	Comments
04/27/2018 11:47:46	PRICES	04/07/2018	1	0	PRC_RTMLAP	RTM	New	Push Completed	Push Completed
04/27/2018 11:47:46	PRICES	04/07/2018	2	0	PRC_RTMLAP	RTM	New	Push Completed	Push Completed
04/27/2018 11:47:46	PRICES	04/07/2018	3	0	PRC_RTMLAP	RTM	New	Push Completed	Push Completed
04/27/2018 11:47:46	PRICES	04/07/2018	4	0	PRC_RTMLAP	RTM	New	Push Completed	Push Completed
04/27/2018 11:47:46	PRICES	04/07/2018	5	0	PRC_RTMLAP	RTM	New	Push Completed	Push Completed
04/18/2018 01:50:58	PRICES	04/17/2018	15	11	PRC_INTVL_LMP	RTM	New	Push Completed	Push Completed
04/18/2018 01:50:26	PRICES	04/17/2018	14	10	PRC_INTVL_LMP	RTM	New	Push Completed	Push Completed
04/18/2018 01:49:14	PRICES	04/17/2018	0	0	PRC_RTMLAP	RTM	New	Push Completed	Push Completed
04/18/2018 01:47:05	PRICES	04/18/2018	2	11	PRC_INTVL_LMP	RTM	New	Push Completed	Push Completed
04/18/2018 01:46:58	PRICES	04/18/2018	2	11	PRC_RTMLAP	RTM	New	Push Completed	Push Completed

Hourly RTM LAP Prices

Corrections publication

California ISO OASIS

ATLAS REFERENCE REPORT DEFINITION PRICES TRANSMISSION SYSTEM DEMAND ENERGY ANCILLARY SERVICES CONGESTION REVENUE RIGHTS PUBLIC BIDS

Date From: 04/27/2018 To: 04/27/2018 Market: RTM Oasis Section: PRICES Version: [ALL] Status: [ALL]

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Publications and Revisions

Publication Date Time	OASIS Section	Operating Day	Operating Interval	Operating Interval	Report Name	Market	Revision	Status	Comments
04/27/2018 11:59:25	PRICES	04/07/2018	7	0	PRC_RTMLAP	RTM	Revised	Push Completed	Push Completed
04/27/2018 11:59:25	PRICES	04/07/2018	8	0	PRC_RTMLAP	RTM	Revised	Push Completed	Push Completed
04/27/2018 11:59:25	PRICES	04/07/2018	9	0	PRC_RTMLAP	RTM	Revised	Push Completed	Push Completed
04/27/2018 11:59:25	PRICES	04/07/2018	10	0	PRC_RTMLAP	RTM	Revised	Push Completed	Push Completed
04/27/2018 11:59:25	PRICES	04/07/2018	11	0	PRC_RTMLAP	RTM	Revised	Push Completed	Push Completed
04/18/2018 08:38:16	PRICES	04/06/2018	24	11	PRC_INTVL_LMP	RTM	Revised	Push Completed	Push Completed
04/18/2018 08:38:16	PRICES	04/06/2018	24	12	PRC_INTVL_LMP	RTM	Revised	Push Completed	Push Completed
04/18/2018 08:38:04	PRICES	04/06/2018	0	0	PRC_RTMLAP	RTM	Revised	Push Completed	Push Completed
04/18/2018 08:37:55	PRICES	04/06/2018	14	1	PRC_INTVL_LMP	RTM	Revised	Push Completed	Push Completed
04/18/2018 08:37:55	PRICES	04/06/2018	14	2	PRC_INTVL_LMP	RTM	Revised	Push Completed	Push Completed

Hourly RTM LAP Prices

Corrections publication

Date From: 04/27/2018 To: 04/27/2018 Market: RTM Oasis Section: PRICES Publication Type: [ALL]

OASIS Publications Schedule

OASIS Section	Report Name	Report Description	Group Name	Market	Publication Type	Publication Interval	Description
PRICES	PRC_CD_INTVL_LMP	Contingency Dispatch Locational Marginal Prices	N/A	RTM	Per Event	Per Event	Posts the ten-minute Locational Marginal Prices for PNc
PRICES	PRC_CD_RTM_FLOWGATE	Contingency Dispatch Intertie Constraint Shadow Prices	N/A	RTM	Per Event	Per Event	Posts the 10-Minute constraint pricing at Transmission I
PRICES	PRC_CD_RTM_NOMOGRAM	Contingency Dispatch Nomogram/Branch Shadow Prices	N/A	RTM	Per Event	Per Event	Posts the 10-Minute constraint pricing at each Nomogra
PRICES	PRC_CD_SPTIE_LMP	Contingency Dispatch Scheduling Point/Tie Combination LMPs	N/A	RTM	Per Event	Per Event	Scheduling Point/Tie Combination LMP Prices for the R
PRICES	PRC_CNSTR	Intertie Constraint Shadow Prices	N/A	RTM	Every 15 Minutes	T-5 Minutes	Intertie Constraint Shadow Prices for RTM
PRICES	PRC_INTVL_AS	Interval AS Clearing Prices	RTM_PRC_GRP	RTM	Every 15 Minutes	T-5 Minutes	AS Clearing Prices for the RTM
PRICES	PRC_INTVL_LMP	Interval Locational Marginal Prices (LMP)	RTM_LMP_GRP	RTM	Every 5 Minutes	T-2.5 Minutes	LMP Prices for the RTM
PRICES	PRC_MPM_DEFAULT_CMP	MPM Default Competitive Path Assessment List	N/A	RTM	DAILY	Prior to the close of the RTM	Posts the results of the default competitive path assessi
PRICES	PRC_NOMOGRAM	Nomogram/Branch Shadow Prices	N/A	RTM	Every 15 Minutes	T-5 Minutes	Nomogram/Branch Shadow Prices for RTM
PRICES	PRC_RTM_LAP	Hourly RTM LAP Prices	PRC_RTM_LAP	RTM	Daily	Daily	Hourly RTM LAP Prices

No change in Publications Schedule

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

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

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

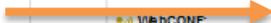
Market Sim



Market Sim



Release Users Group (RUG)



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