



Release User Group Agenda

May 5, 2020

10:00 a.m.–11:00 a.m. (Pacific Time)

| Web Conference Information | Conference Call Information |
|--|--|
| <p>Web Address: https://caiso.webex.com/meet/RUG Meeting Number: 960 941 245</p> <p>Audio connection instructions will be available after connecting to the web conference. When prompted, select "Call me" and enter the phone number you will use during the call. You will be called by the conference shortly.</p> | <p>Dial-in Number: 866-528-2256 International Dial-in: 216-706-7052 Access Code: 291 426 5</p> |
| <p>Calls and webinars are recorded for stakeholder convenience, allowing those who are unable to attend to listen to the recordings after the meetings. The recordings will be publicly available on the ISO web page for a limited time following the meetings. The recordings, and any related transcriptions, should not be reprinted without the ISO's permission.</p> | |

Release User Group Agenda

May 5, 2020

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

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

The ISO offers innovative training programs

| Date | Training courses and workshops |
|--------------|---|
| June 10 - 11 | SC Certification Training |
| | <i>Email us at CustomerReadiness@caiso.com for any training or readiness related questions</i> |



CustomerReadiness@caiso.com

Computer Based Training

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

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

New Modules (recorded webinar and slides)

You can find new initiatives training courses on the learning center web page below. More resources will be added throughout 2020 in accordance with project schedules.

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

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

Release Plan Summary: 2020

Independent 2020

- Capacity Procurement Mechanism Soft Offer Cap
- *Settlements Spring 2020 Release – refer to Settlement User Group – In Production*
 - *Black Start System Restoration Phase 2*
 - *Reliability Coordinator Settlement Enhancements*
- Nodal Pricing Model – Advisory Service for PacifiCorp

Fall 2020

- Commitment Costs and Default Energy Bid Enhancements Phase 1
- Energy Storage and Distributed Energy Resources Phase 3B
- Dispatch Operating Target Tariff Clarifications
- Intertie Deviation Settlement
- Excess Behind the Meter Production
- Market Settlement Timeline Transformation
- Energy Imbalance Market (EIM) Enhancements 2020
- Automated Dispatch System (ADS) User Interface (UI) Replacement
- FERC Order 841 – Requested Adjustments
- FRP Improvements - Buffer and Min
- Aliso Canyon Phase 5 – Dynamic Competitive Path Assessment
- Hybrid Resources - Phase 1

Release Plan Summary: 2021 - 2022

Independent 2021

- System Market Power Mitigation (BOG Q3,2020 and implementation prior to Q3, 2021)

Spring 2021

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

Fall 2021 – tentative, subject to impact assessment

- Day Ahead Market Enhancements (BOG 2021)
- Resource Adequacy (RA) Enhancements (BOG Q3/Q4 2020)
- Energy Storage and Distributed Energy Resources Phase 4 (BOG Sept 2020)
- Import Bidding and Market Parameters, (A.K.A. Import Bid Cost Verification and FERC Order 831) – July 2020 BOG
- Contingency Modeling Enhancements - Transmission
- Flexible Ramping Product Improvements - Deliverability

Spring 2022

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

Fall 2022 – tentative, subject to impact assessment

- Commitment Costs and Default Energy Bid Enhancements Phase 2

Release Schedule 2020

Date of Data Refresh: 5/1/2020



| Legend | |
|-------------------|-----------------|
| Market Simulation | CA ISO Holiday |
| External Testing | Deployment Week |

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|------------------|-------------------|-------------------|-------------------|-----------------|------------------|-------------------|-------------------|------------------|------------------|-------------------|-------------------|------------------|-----------------|-------------------|-------------------|-------------------|------------------|------------------|-------------------|-------------------|-------------------|--------------------|---------------------|---------------------|-------------------|--------------------|---------------------|---------------------|--------------------|--------------------|---------------------|---------------------|-------------------|------------------|-------------------|
| 5/4/20 - 5/10/20 | 5/11/20 - 5/17/20 | 5/18/20 - 5/24/20 | 5/25/20 - 5/31/20 | 6/1/20 - 6/7/20 | 6/8/20 - 6/14/20 | 6/15/20 - 6/21/20 | 6/22/20 - 6/28/20 | 6/29/20 - 7/5/20 | 7/6/20 - 7/12/20 | 7/13/20 - 7/19/20 | 7/20/20 - 7/26/20 | 7/27/20 - 8/2/20 | 8/3/20 - 8/9/20 | 8/10/20 - 8/16/20 | 8/17/20 - 8/23/20 | 8/24/20 - 8/30/20 | 8/31/20 - 9/6/20 | 9/7/20 - 9/13/20 | 9/14/20 - 9/20/20 | 9/21/20 - 9/27/20 | 9/28/20 - 10/4/20 | 10/5/20 - 10/11/20 | 10/12/20 - 10/18/20 | 10/19/20 - 10/25/20 | 11/2/20 - 11/8/20 | 11/9/20 - 11/15/20 | 11/16/20 - 11/22/20 | 11/23/20 - 11/29/20 | 11/30/20 - 12/6/20 | 12/7/20 - 12/13/20 | 12/14/20 - 12/20/20 | 12/21/20 - 12/27/20 | 12/28/20 - 1/3/21 | 1/4/21 - 1/10/21 | 1/11/21 - 1/17/21 |
|------------------|-------------------|-------------------|-------------------|-----------------|------------------|-------------------|-------------------|------------------|------------------|-------------------|-------------------|------------------|-----------------|-------------------|-------------------|-------------------|------------------|------------------|-------------------|-------------------|-------------------|--------------------|---------------------|---------------------|-------------------|--------------------|---------------------|---------------------|--------------------|--------------------|---------------------|---------------------|-------------------|------------------|-------------------|

MAP Stage Environment Window

| Activity | Start Date | End Date |
|--|------------|----------|
| MAINTENANCE - Fall 2020 Release Market Simulation Preparations | | |
| CCDEBE Phase 1 - Market Sim | | |
| ESDER Phase 3b - Load Shift Product - Market Sim | | |
| Dispatch Operating Target Tariff Clarification - Market Sim | | |
| Intertie Deviation Settlement - Market Sim | | |
| Excess Behind the Meter Production - Market Sim | | |
| Market Settlement Timeline Transformation - Market Sim | | |
| EIM Enhancements 2020 - Market Sim | | |
| ADS UI Replacement - Market Sim | | |
| FERC841 Requested Adjustments - Market Sim | | |
| FRP Improvements - Buffer and Min - Market Sim | | |
| Aliso Canyon 5 - DCPA - Market Sim | | |
| Hybrid Resources Phase 1 - Market Sim | | |
| Nodal Pricing Model - Market Sim | | |
| EIM - Public Service Company of New Mexico - Market Sim | | |
| EIM - North-Western Energy - Market Sim | | |
| EIM - Los Angeles Dept. of Water & Power - Market Sim | | |
| EIM - Turlock Irrigation District - Market Sim | | |
| EIM - BANC Phase 2 / WAPA - Market Sim | | |

MAINTENANCE - Fall 2020 Release Market Simulation Preparations (07/06-07/27)

| | |
|---|--|
| CCDEBE Phase 1 - Market Sim (07/27-09/04) | |
| ESDER Phase 3b - Load Shift Product - Market Sim (07/27-09/04) | |
| Dispatch Operating Target Tariff Clarification - Market Sim (07/27-09/04) | |
| Intertie Deviation Settlement - Market Sim (07/27-09/04) | |
| Excess Behind the Meter Production - Market Sim (07/27-09/04) | |
| Market Settlement Timeline Transformation - Market Sim (07/27-09/04) | |
| EIM Enhancements 2020 - Market Sim (07/27-09/04) | |
| ADS UI Replacement - Market Sim (07/27-09/04) | |
| FERC841 Adjustments - Market Sim (07/27-09/04) | |
| FRP Improvements - Buffer and Min - Market Sim (07/27-09/04) | |
| Aliso Canyon 5 - DCPA - Market Sim (07/27-09/04) | |
| Hybrid Resources Phase 1 - Market Sim (07/27-09/04) | |
| Nodal Pricing Model - Market Sim (10/05-11/15) | |
| EIM - Public Service Company of New Mexico - Market Sim (12/01-01/31) | |
| EIM - North-Western Energy - Market Sim (12/01-01/31) | |
| EIM - Los Angeles Dept. of Water & Power - Market Sim (12/01-01/31) | |
| EIM - Turlock Irrigation District - Market Sim (12/01-01/31) | |
| EIM - BANC Phase 2 / WAPA - Market Sim (12/01-01/31) | |

Production Environment Window

| Activity | Start Date | End Date |
|---|------------|----------|
| Capacity Procurement Mechanism Soft Offer Cap Effective Trade Date | | |
| CCDEBE Phase 1 Activation | | |
| ESDER Phase 3 - DRRS | | |
| ESDER Phase 3b - Load Shift Product | | |
| Dispatch Operating Target Tariff Clarification | | |
| Intertie Deviation Settlement | | |
| Excess Behind the Meter Production Deployment | | |
| Market Settlement Timeline Transformation Deployment | | |
| EIM Enhancements 2020 | | |
| ADS UI Replacement | | |
| FERC841 Requested Adjustments | | |
| FRP Improvements - Buffer and Min | | |
| Aliso Canyon 5 - DCPA | | |
| Hybrid Resources Phase 1 | | |
| Excess Behind the Meter Production Activation Effective Trade Date | | |
| Market Settlement Timeline Transformation Activation Effective Trade Date | | |
| Nodal Pricing Model Activation | | |

Capacity Procurement Mechanism Soft Offer Cap Effective Trade Date (06/01)

| | |
|---|--|
| CCDEBE Phase 1 (10/01) | |
| ESDER Phase 3 - DRRS (09/14) | |
| ESDER Phase 3b - Load Shift Product (10/01) | |
| Dispatch Operating Target Tariff Clarification (10/01) | |
| Intertie Deviation Settlement (10/01) | |
| Excess Behind the Meter Production Deployment (10/01) | |
| Market Settlement Timeline Transformation Deployment (10/01) | |
| EIM Enhancements 2020 (10/01) | |
| ADS UI Replacement (10/01) | |
| FERC841 Adjustments (10/01) | |
| FRP Improvements - Buffer and Min (10/01) | |
| Aliso Canyon 5 - DCPA (10/01) | |
| Hybrid Resources Phase 1 (10/01) | |
| Excess Behind the Meter Production Activation Effective Trade Date (01/01) | |
| Market Settlement Timeline Transformation Activation Effective Trade Date (01/01) | |
| Nodal Pricing Model Activation (01/15) | |

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



2020 Independent

2020 – Capacity Procurement Mechanism Soft Offer Cap

| Project Info | Details/Date |
|------------------------------|--|
| Application Software Changes | <p>Scope:</p> <ul style="list-style-type: none"> The scope of this initiative includes updating the Capacity Procurement Mechanism (CPM) soft offer cap and the consideration of payments for 12-month CPM designations. <p>Impacted Systems:</p> <ul style="list-style-type: none"> No system/application impacts |
| BPM Changes | <ul style="list-style-type: none"> Reliability Requirements |
| Tariff Changes | <ul style="list-style-type: none"> 43A.4.1.1.1 43A.5.4 43A.6.2 |

| Milestone Type | Milestone Name | Dates | Status |
|-----------------------|--|--|--------|
| Board Approval | Obtain Board of Governors Approval | N/A | |
| External BRS | Milestone: Post External BRS | N/A | |
| Config Guides | Config Guides | N/A | |
| Tech Spec | Create ISO Interface Spec (Tech spec) | N/A | |
| Tariff | File Tariff | Feb 25 , 2020 | ✓ |
| | FERC decision requested by | May 28, 2020 | |
| BPMs | Reliability Requirements - Tariff change 43A.6.2 needs to be added to section 12.3.6 | PRR process will start after FERC decision | |
| Market Sim | Market Sim Window | N/A | |
| Production Activation | CPM Soft Offer Cap | Jun 01, 2020 | |

2020 – Nodal Pricing Model – Advisory Service for PacifiCorp

Reference – ISO market notice from Dec 18, 2019 – see: Stay Informed\Meetings and Events\Miscellaneous stakeholder meetings\Previous Meetings\2019 meetings\PacifiCorp nodal pricing model service informational call - Dec 18,2019 or <http://www.caiso.com/Pages/documentsbygroup.aspx?GroupID=E8304346-54B9-4473-9E45-9C282AAD1340>

Excerpt from the market notice:

“The California ISO is hosting an informational stakeholder call on Dec. 18, 2019, to discuss an agreement that it intends to file with Federal Energy Regulatory Commission (FERC) that will provide PacifiCorp with an advisory nodal pricing model (NPM) service. Information related to this effort available on the ISO website at <http://www.caiso.com/informed/Pages/MeetingsEvents/MiscellaneousStakeholderMeetings/Default.aspx>.

This service will produce separate advisory day-ahead nodal pricing results for locations within PacifiCorp’s balancing authority areas, without a financial settlement or impact to the ISO’s day-ahead market. PacifiCorp will pay the ISO’s estimated cost to provide the service. PacifiCorp plans to use the NPM solution results as the basis for its power cost allocation among the states within which it provides retail electric service, consistent with the recently filed inter-jurisdictional cost allocation agreement.”

As a result of this project, some charge codes will change. ISO will provide specific information for Configuration Guides changes that may impact all market participants.

Configuration Guides will be available on Aug 10, 2020.

FERC approved it on Feb 28, 2020

Target timeline for market simulation Oct 5, 2020 through Nov 13, 2020, with a go-live target of Jan 15.

2020 Fall Release

Fall 2020 Release – Overview

| | BOG | BRS | Config Guide | Tech Spec | Mkt Sim Scenarios | Draft Tariff** | Draft BPMs | Training | Market Sim | Production Activation |
|--|----------|--|-----------------|--|----------------------|-----------------------|-----------------|----------------------------------|-----------------------------------|-----------------------------|
| Fall 2020 Release | | 04/01/20 | 05/29/20 | 05/29/20 | 05/29/20 | 06/26/20 | 07/20/20 | 07/20/20 | Jul 27, 2020 - Sep 4, 2020 | 10/01/20 |
| CCDEBE1 | 03/22/18 | 09/04/19 | N/A | 05/17/19 | | 06/01/20 - Re-file | 10/04/19 | 10/08/19 | Jul 27, 2020 - Sep 04, 2020 | 10/01/20 |
| ESDER Phase 3b - Load Shift Product | 09/05/18 | 07/18/19 02/14/20 03/12/20 04/14/20 | 05/29/20 | 05/01/20 - DRRS 05/29/20 - MF | 05/29/20 06/16/20 | 05/15/20 | 05/01/20 | 06/22/20 | Jul 27, 2020 - Sep 04, 2020 | 09/14/20 - DRRS 10/01/20 |
| Dispatch Operating Target Tariff Clarification | 07/26/18 | 12/26/18 04/30/20 | N/A | 05/29/20 | 05/29/20 | 09/04/18 | 07/20/20 | 07/16/20 | Jul 27, 2020 - Sep 04, 2020 | 10/01/20 |
| Intertie Deviation Settlement | 02/07/19 | 03/02/20 | 05/29/20 | N/A | 05/29/20 06/16/20 | N/A | TBD | 7/20/20 | Jul 27, 2020 - Sep 04, 2020 | 10/01/20 |
| Excess Behind the Meter Production | 11/17/18 | 02/27/20 04/16/20 | 05/29/20 | 05/29/20 | 05/29/20 06/16/20 | 11/04/19 | 07/15/20 | 07/21/20 | Jul 27, 2020 - Sep 04, 2020 | 01/01/21 (TD) |
| Market Settlement Timeline Transformation | 11/14/19 | 02/06/20 | 05/29/20 | 05/29/20 | 05/29/20 06/16/20 | 06/26/20 | 07/20/20 | 07/20/20 | Jul 27, 2020 - Sep 04, 2020 | 01/01/21 (TD) |
| EIM Enhancements 2020 | N/A | 03/24/20 | 05/29/20 | 05/29/20 | 05/29/20 06/16/20 | N/A | TBD | 07/23/20 09/21/20 | Jul 27, 2020 - Sep 04, 2020 | 10/01/20 |
| ADS UI Replacement | N/A | 08/06/18 | N/A | 05/29/20 | 05/29/20 | N/A | 07/20/20 | 06/01/20 06/11/20 07/16/20 | Jul 27, 2020 - Sep 04, 2020 | 10/01/20 |
| FERC 841 – Requested Adjustments | N/A | 04/01/20 | 5/29/20 | 05/29/20 | 05/29/20 06/16/20 | 1/21/20 | TBD | TBD | Jul 27, 2020 - Sep 04, 2020 | 10/01/20 |
| FRP Improvements - Buffer and Min | N/A | 5/05/20 | N/A | N/A | 05/29/20 | N/A | TBD | TBD | Jul 27, 2020 - Sep 04, 2020 | 10/01/20 |
| Aliso Canyon 5 - DCPA | N/A | 5/05/20 | N/A | N/A | 05/29/20 | N/A | 07/20/20 | N/A | Jul 27, 2020 - Sep 04, 2020 | 10/01/20 |
| Hybrid Resources Ph1 | N/A | TBD | N/A | TBD | 05/29/20 | TBD | TBD | TBD | Jul 27, 2020 - Sep 04, 2020 | 10/01/20 |

Fall 2020 Release – System Impacts

| Fall 2020 Release | ADS | CMRI | IFM / RTM | OASIS | Settlements | MF | DRRS | CIRA | MRI-S Metering | MRI-S Settlements | CIDI | BAAOP | BSAP |
|---------------------------------------|-----------|-----------|-----------|-----------|-------------|-----------|-----------|------|----------------|-------------------|------|-------|------|
| ESDER3B | | | | | Y | Tech Spec | Tech Spec | Y | | | | | |
| DOTTC | Tech Spec | | RTM | | | | | | | | | | |
| IDS | Y | | | | Y | | | | | | | | |
| EBtMP | | | | Tech Spec | Y | | | | Tech Spec | | | | |
| Market Settlement Timeline Transf. | | Tech Spec | | Tech Spec | Y | | | | Y | Y | Y | | |
| EIM2020 | | Tech Spec | RTM | Y | Y | Tech Spec | | | | | | Y | Y |
| ADS UI Replacement | Tech Spec | | | | | | | | | | | | |
| FERC Order 841 – Requested Adjustment | | | | | Y | Tech Spec | | | | | | | |
| FRP Improvements - Buffer and Min | | | RTM | Tech Spec | | Y | | | | | | | |
| Aliso Canyon 5 - DCPA | | | Y | | | | | | | | | | |
| Hybrid Resources Ph 1 | | | Y | | | Y | | | | | | | |

Fall 2020 Release – BPM Impacts

| Fall 2020 Release | Mkt Instr | Mkt Ops | Stlmts & Billing | Definition & Acronyms | Outage Mgmt | Reliability Rqmts | Metering | Credit Mgmt & Market Clearing | EIM | Rules of Conduct Admin | Demand Response | Full Network Model | Generator | Gen Interconnection Protocol |
|---|-----------|---------|------------------|-----------------------|-------------|-------------------|----------|-------------------------------|-----|------------------------|-----------------|--------------------|-----------|------------------------------|
| ESDER3B | Y | Y | | | Y | Y | Y | | | | Y | | | |
| Dispatch Op Target Tariff Clarification | Y | Y | | | | | | | | | | | | |
| Intertie Deviation Stlmt | | | Y | | | | | | | | | | | |
| Excess Behind Meter Prod | | | Y | Y | | | Y | | | | | | | |
| Mkt Stlmt Timeline Trans | Y | | Y | Y | | Y | Y | Y | Y | Y | | | | |
| EIM Enh 2020 | Y | | | | | | | | | | | | | |
| ADS UI Repl | Y | Y | | | | | | | | | | | | |
| FERC 841 | Y | | Y | | | | Y | | | | | | | |
| FRP Buffer & Min | Y | Y | | | | | | | | | | | | |
| Aliso Canyon 5 - DCPA | | Y | | | | | | | | | | Y | | |
| Hybrid Resources Ph 1 | Y | Y | | | | | | | Y | | | | Y | Y |

Fall 2020 Release - System Interface Changes - CCDEBE1

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

| CMRI | | | | | | |
|------------------|-------------|--|--|--|--|-----------------------------------|
| Project | Change Type | UI | API Service Name & Major Version, Artifacts | MAP Stage | Production | Technical Specifications |
| LMPME CCDEBE1 | Modify | Tab: Default Bids Existing Report: Default Energy Bid Curves | RetrieveDefaultBidCurves_CMRIv2_AP RetrieveDefaultBidCurves_CMRIv2_DocAttach_AP | LMPME ✓ 9/12/19 CCDEBE1 ✓ 11/6/19 | LMPME ✓ 11/13/19 CCDEBE1 ✓ Deploy 3/26/20 Activation 10/1/20 | 3.9.4 Release Notes 1.2 |
| CCDEBE1 | Modify | Tab: Default Bids Existing Report: Default Commitment Costs | RetrieveExternalDefaultCommitmentCost_CMRIv1_AP RetrieveExternalDefaultCommitmentCost_CMRIv1_DocAttach_AP | ✓ 11/11/19 | ✓ Deploy 3/26/20 Activation 10/1/20 | 3.9.4 Release Notes 1.2 |

<https://developer.caiso.com>

Fall 2020 Release - System Interface Changes

| ADS | | | | | |
|--------------------------|-------------|--|--------------------------|-----------|------------|
| Project | Change Type | Summary | Technical Specifications | MAP Stage | Production |
| ADS Replacement DOTTC | Modify | v7: Instructions to include Unannounced AS Test information <i>There will be additional ADS changes that will be added here</i> | 5/29/20 | 7/27/20 | 10/1/20 |

| DRRS | | | | | |
|---------|-------------|---|--------------------------|-----------|----------------|
| Project | Change Type | Summary | Technical Specifications | MAP Stage | Production |
| ESDER3B | Modify | RequestDRRegistrationData.xsd DRRegistrationData.xsd | 5/6/20 | 7/27/20 | Deploy 9/14/20 |
| ESDER3B | New | Alternate API to only retrieve incremental data changes (Locations, Registrations) | 5/6/20 | 7/27/20 | Deploy 9/14/20 |
| ESDER3B | | Retrieval of the complete location approval process workflow details (LSE & UDC) | 5/6/20 | 7/27/20 | Deploy 9/14/20 |
| ESDER3B | | Retrieval of location records that are under the defense process | 5/6/20 | 7/27/20 | Deploy 9/14/20 |
| ESDER3B | | Retrieval of the location defense process workflow details (Incumbent & Prospective DRPs) | 5/6/20 | 7/27/20 | Deploy 9/14/20 |

| MRI-S | | | | | |
|---------|-------------|--|--------------------------|-----------|-------------------|
| Project | Change Type | Summary | Technical Specifications | MAP Stage | Production |
| EBTMP | Modify | For: - MRIS Meter: Submit Meter & - MRIS Meter: Retrieve Meter additionally include EBtMP measurement type values (as negative load) both Gross Load and EBtMP meter data would associate with same Load Resource ID | 5/29/20 | 7/27/20 | Activation 1/1/21 |

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Fall 2020 Release - System Interface Changes

| Master File | | | | | |
|-------------|-------------|--|--------------------------|-----------|------------|
| Project | Change Type | Summary | Technical Specifications | MAP Stage | Production |
| ESDER3B | | Add enumeration to GRDT web service | 5/29/20 | 7/27/20 | 10/1/20 |
| FERC841 RA | | New GRDT attribute | 5/29/20 | 7/27/20 | 10/1/20 |
| EIM2020 | | New GRDT attribute | 5/29/20 | 7/27/20 | 10/1/20 |
| Other | | Remove MinDispatchLevel (MIN_LOAD) from GRDT | 5/29/20 | 7/27/20 | 10/1/20 |

| CMRI | | | | | |
|---------|-------------|---|--------------------------|-----------|------------|
| Project | Change Type | Summary | Technical Specifications | MAP Stage | Production |
| EIM2020 | New | BAInfeasiblity_v1 BALoadConformingData | 5/29/20 | 7/27/20 | 10/1/20 |

| OASIS | | | | | |
|-------------------------------|-------------|---------|--------------------------|-----------|----------------------|
| Project | Change Type | Summary | Technical Specifications | MAP Stage | Production |
| FRP Improvements Buffer & Min | | TBD | 5/29/20 | 7/27/20 | 10/1/20 |
| EBTMP | | TBD | 5/29/20 | 7/27/20 | Activation 1/1/21 |

2020 – Commitment Cost and Default Energy Bid Enhancements Ph1

| Project Info | Details/Date |
|------------------------------|---|
| Application Software Changes | <p><u>Scope:</u> Enhances the ability to submit market-based commitment cost bids in order to reflect unique costs and volatility:</p> <ul style="list-style-type: none"> • Ex-ante cost adjustment requests • Reference Level Adjustments to default commitment cost bids (start-up and minimum load costs) and default energy bids • Make Day Ahead Market process permanent • Make D+2 Process permanent • Use of indices clarification, and Monday Only in DAM and RTM, per LMPME • Conditionally Available Resources (CAR) <p><u>Impacted Systems:</u></p> <ul style="list-style-type: none"> • SIBR: Allow the submittal of Ex Ante cost adjustments. • CMRI: Provide additional source information for default bids. <p>Submit requests through CIDI for manual consultation and ex-post default bid adjustments.</p> |
| BPM Changes | <ul style="list-style-type: none"> • Market Instruments • Market Operations |
| Business Process Changes | <ul style="list-style-type: none"> • Maintain Major Maintenance Adders (MMG LIII) • Maintain Negotiated Default Energy Bids (MMG LIII) • Maintain Negotiated O_Ms (MMG LIII) • Manage Day Ahead Market (MMG LII) • Manage Market Billing Settlements (MOS LII) • Manage Real Time Hourly Market (RTPD) (MMG LII) • Manage Real Time Operations – Maintain Balance Area (MMG LII) |

Fall 2020 – Commitment Cost and Default Energy Bid Enhancements Ph1

| Milestone Type | Milestone Name | Dates | Status |
|-----------------------|---|------------------------------------|--------|
| Draft Policy | Publish Draft Business Rules externally | Jan 31, 2018 | ✓ |
| Board Approval | Obtain Board of Governors Approval | Mar 22, 2018 | ✓ |
| External BRS | Publish revised external BRS v1.1 | Jan 22, 2019 | ✓ |
| | Publish External BRS v1.2: Phase 1/Phase 2, clarifications | Mar 29, 2019 | ✓ |
| | Publish External BRS v1.3: Reference Level Adjustments | Apr 05, 2019 | ✓ |
| | Publish External BRS v1.4 for CCDEBE tariff traceability | Jul 19, 2019 | ✓ |
| | Publish External BRS v1.5: implementation notes & clarifications | Sep 04, 2019 | ✓ |
| Config Guides | Config Guide | N/A | |
| Tech Spec | Publish Technical Specifications | May 17, 2019 | ✓ |
| | Publish Technical Spec. updates for CARs and Electric Pricing Hub weighting | Jun 28, 2019 | ✓ |
| Tariff | File Tariff - CCDEBE Phase 1 | Oct 11, 2019 | ✓ |
| | FERC rejection with further guidance | Jan 21, 2020 | ✓ |
| | Re-file Tariff | June 1, 2020 | |
| BPMs | Publish draft Market Instruments: Attachment O on CCDEBE Stakeholder Processes page | Oct 04, 2019 | ✓ |
| | PRR 1203 published: CCDEBE updates to Market Instruments BPM, incl. Attachment O | Oct 18, 2019 | ✓ |
| External Training | Deliver External Training | Oct 08, 2019 | ✓ |
| | Finalize external training material | Oct 04, 2019 | ✓ |
| Market Sim | Market Sim Window – Fall 2019 | Oct 14, 2019 - Dec 03, 2019 | ✓ |
| | Market Sim Window – Fall 2020 | Jul 27, 2020 - Sep 04, 2020 | |
| Production Activation | CCDEBE Phase 1 | October 1, 2020 | |

Fall 2020 – ESDER Phase 3b – Load Shift Product

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

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

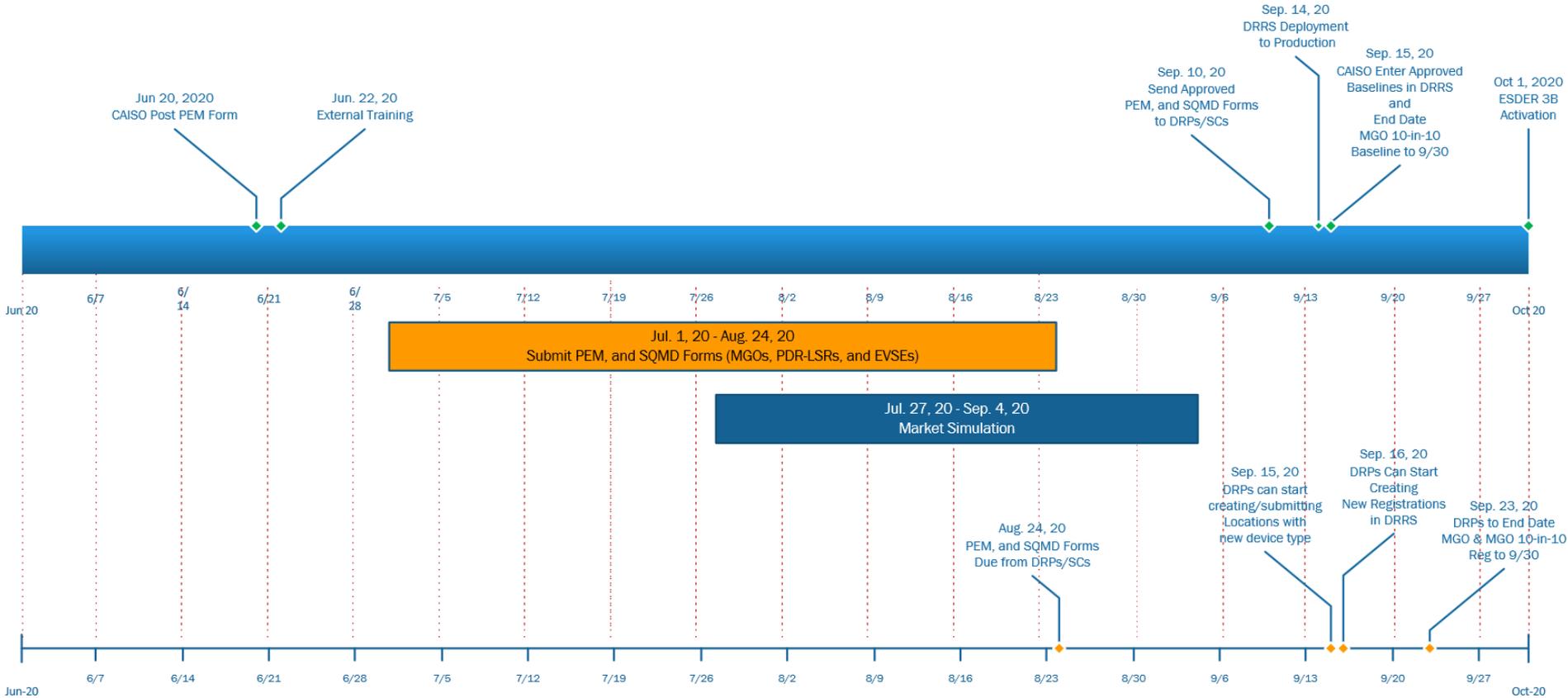
| Project Info | Details/Date |
|---------------|---|
| BPM Changes | <ul style="list-style-type: none"> Market Instruments, Market Operations, Outage Management, Reliability Requirement, Metering and Demand Response |
| Tariff Change | Sections 4.13, 6.4, 6.5, 11.6, 11.8, 31.3, 34.1,34.4, 34.5, 30.7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

| Milestone Type | Milestone Name | Dates | Status |
|-----------------------|---|-----------------------------|--------|
| Board Approval | Obtain Board of Governors Approval | Sep 05, 2018 | ✓ |
| External BRS | Post External BRS v1.4 | Jul 18, 2019 | ✓ |
| | Post External BRS v1.5 | Feb 14, 2020 | ✓ |
| | Post External BRS v1.6 | Mar 12, 2020 | ✓ |
| | Post External BRS v1.6 | Apr 14, 2020 | ✓ |
| Config Guides | Post Draft Config Guides | May 29, 2020 | |
| Tech Spec | Publish Technical Specifications - MF | May 29, 2020 | |
| | Publish Technical Specifications - DRRS | May 01, 2020 | ✓ |
| Tariff | Post Draft Tariff | May 15, 2020 | |
| | File Tariff | Jul 14, 2020 | |
| BPMs | Post Draft BPM changes | May 01, 2020 | ✓ |
| External Training | External Training | Jun 22, 2020 | |
| Market Sim | MARKET SIMULATION | Jul 27, 2020 - Sep 04, 2020 | |
| Production Activation | ESDER Phase 3b - Load Shift Product | Oct 01, 2020 | |
| | ESDER Phase 3 - DRRS | Sep 14, 2020 | |

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

Energy Storage and Distributed Energy Resources Phase 3B – Transition Timeline

DRP/SC ISO Joint



Note: SC shall follow the normal Master File process. Master File may take up to 10 business days for processing.

Fall 2020 – Dispatch Operating Target Tariff Clarification

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

| Milestone Type | Milestone Name | Dates | Status |
|-----------------------|--|-----------------------------|--------|
| Board Approval | Obtain Board of Governors Approval | Jul 26, 2018 | ✓ |
| External BRS | Posted External BRS | Dec 26, 2018 | ✓ |
| | Posted revised External BRS | Apr 30, 2020 | ✓ |
| Config Guides | Design review - BPM and Tariff SMEs | N/A | |
| Tech Spec | Publish Technical Specifications | May 29, 2020 | |
| Tariff | Draft Tariff | Sep 04, 2018 | ✓ |
| | File Tariff | Oct 29, 2018 | ✓ |
| BPMs | Post Draft BPM changes | Jul 20, 2020 | |
| External Training | Deliver External Training | Jul 16, 2020 | |
| Market Sim | Market Sim Window | Jul 27, 2020 - Sep 04, 2020 | |
| Production Activation | Dispatch Operating Target Tariff Clarification | Oct 01, 2020 | |

Fall 2020 – Intertie Deviation Settlement

| Project Info | Details/Date |
|------------------------------|---|
| Application Software Changes | <p>Scope: Implement a new Under/Over Delivery Charge for intertie deviations from Market Schedule and After-The-Fact (ATF) E-Tag, to replace Decline charge</p> <p>Impacted Systems:</p> <p>Settlements</p> <ul style="list-style-type: none"> • Calculate FMM binding intertie award, exclude Curtailment, calculate under/over delivery quantity as deviation of schedule and ATF E-Tag, Charge under/over delivery Charge at 50% of RTD LMP. • Remove the decline charge calculation and Decline Threshold • Allocate Over/Under delivery charge to measured demand <p>ADS - display the HASP schedule, the scheduling coordinator accepted value, and the difference between the two</p> <p>RTM - determine the 15-minute binding award for hourly intertie resources based on the E-Tag at T-40.</p> |
| BPM Changes | Settlements and Billing |
| Tariff Change | Section 11.32 |

| Milestone Type | Milestone Name | Dates | Status |
|-----------------------|------------------------------------|-----------------------------|--------|
| Board Approval | Obtain Board of Governors Approval | Feb 07, 2019 | ✓ |
| External BRS | Post External BRS | Mar 02, 2020 | ✓ |
| Config Guides | Post Draft Config Guides | May 29, 2020 | |
| Tech Spec | Publish Technical Specifications | N/A | |
| Tariff | Tariff Activities | N/A | |
| BPMs | Post BPM Changes | TBD | |
| External Training | Deliver External Training | Jul 20, 2020 | |
| Market Sim | Market Sim Window | Jul 27, 2020 - Sep 04, 2020 | |
| Production Activation | Intertie Deviation Settlement | Oct 01, 2020 | |

Fall 2020 – Excess Behind the Meter Production

| Project Info | Details/Date |
|------------------------------|---|
| Application Software Changes | <p>Scope:</p> <ul style="list-style-type: none"> • Clarify the Tariff definition of Gross Load per amended tariff definition • Establish how EBtMP will be submitted, reported, and settled • Provide option for entities with meter agreements existing prior to ISO to submit EBtMP interval meter data • Update definitions for Net Load and Unaccounted For Energy settlement calculations • Publish EBtMP performance to market participants <p>Impacted Systems:</p> <p>MRI-S - Meter submission</p> <ul style="list-style-type: none"> • Allow SC to submit Gross Load and EBtMP under the single Resource ID <ul style="list-style-type: none"> • New EBtMP measurement type for interval meter data submission; existing Load measurement type interval meter data submission with represent new Gross Load tariff definition <ul style="list-style-type: none"> • Meter submission UI and API will accept the new EBtMP measurement type <p>OASIS</p> <ul style="list-style-type: none"> • Publish hourly aggregated EBtMP by TAC area once meter data submission deadline passes for settlement date <p>Settlements</p> <ul style="list-style-type: none"> • Modify Net Load and UFE calculations to align with tariff amendments: <ul style="list-style-type: none"> • $NET\ LOAD = GROSS\ LOAD\ METER - EXCESS\ BTMPRODUCTION\ METER$ • $UFE\ QUANTITY = GENERATION\ METER + INTERTIE\ IMPORT\ METER - (NET\ LOAD\ METER + EXPORT\ INTERTIE\ METER + RTD\ LOSS\ MW)$ • New Excess Behind the Meter Production (EBtMP) metered value bill determinant will be provided (similar to metered Load today) • Modify follow charge codes to settle based on Gross Load (Reliability based charge codes, list may not be comprehensive – See updated Settlements Configuration Guides) <ul style="list-style-type: none"> • 372 High Voltage Access Charge Allocation (UDC gross load) • 382 High Voltage Wheeling Allocation (Non PTO load) • 383 Low Voltage Wheeling Allocation (Non PTO load) • 591 Emissions Cost Recovery (Measured Demand) • 1101 Black Start Capability Allocation • ... |

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

| Project Info | Details/Date |
|--------------------------------------|---|
| Application Software Changes (cont.) | <p>Impacted Systems:</p> <p>Settlements (continued);</p> <ul style="list-style-type: none"> • Modify follow charge codes to settle based on Gross Load (Reliability based charge codes, list may not be comprehensive – See updated Settlements Configuration Guides) <ul style="list-style-type: none"> • 1302 Long Term Voltage Support Allocation • 1303 Supplemental Reactive Energy Allocation • 6090 Ancillary Service Upward Neutrality Allocation • 6194 Spinning Reserve Obligation Settlement • 6196 Spinning Reserve Neutrality Allocation • 6294 Non-Spinning Reserve Obligation Settlement • 6296 Non-Spinning Reserve Neutrality Allocation • 6594 Regulation Up Obligation Settlement • 6596 Regulation Up Neutrality Allocation • 6694 Regulation Down Obligation Settlement • 6696 Regulation Down Neutrality Allocation • 7256 Regulation Up Mileage Allocation • 7266 Regulation Down Mileage Allocation • 7896 Monthly CPM Allocation |
| BPM Changes | <ul style="list-style-type: none"> • Definitions & Acronyms: <ul style="list-style-type: none"> • Update definition of Gross Load • Add Excess Behind the Meter Production • Metering <ul style="list-style-type: none"> • Submission, retrieval of new measurement type (EBtMP) • Settlements & Billing <ul style="list-style-type: none"> • See Settlements Configuration Guide for changes |
| Tariff Change | <ul style="list-style-type: none"> • Appendix A: <ul style="list-style-type: none"> • Clarify Gross Load definition, Update Demand definitions, • Add new term Excess Behind the Meter production • Section 11: <ul style="list-style-type: none"> • Update reliability based tariff reference sections to be based upon gross load |

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

EBTMP Frequently Asked Questions (FAQ) guide available via the [Release Planning](#) page of www.caiso.com.

Fall 2020

- ⊕ Automated Dispatch System (ADS) replacement 
- ⊕ Dispatch operating target tariff clarification - implementation 
- ⊕ Energy imbalance market enhancements 2020 
- ⊕ Energy storage and distributed energy resources phase 3 - implementation 
- ⊖ Excess behind the meter production - implementation 
 -  [Business Requirements Specification v1.1 - Excess Behind the Meter Production](#) 4/18/2020 15:55
 -  [Business Requirements Specification v1.1 - Excess Behind the Meter Production - Redline](#) 4/18/2020 15:55
 -  [Frequently Asked Questions v1.1 - Excess Behind the Meter Production](#) 4/18/2020 15:55
 -  [Frequently Asked Questions v1.1 - Excess Behind the Meter Production - Redline](#) 4/18/2020 15:55
 -  [Frequently Asked Questions - Scheduling Coordinator Meter Entity Gross Load Calculation Example](#) 4/18/2020 15:55
- ⊕ FERC Order No. 841 requested adjustments 
- ⊕ Intertie deviation settlement - implementation 
- ⊕ Market settlement timeline transformation 

Clarification provided for:

- Final submission timeline (T+52B) per Settlement Timeline Transformation
- DLAP, net, and gross load data submission

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

| Milestone Type | Milestone Name | Dates | Status |
|-----------------------|---|-----------------------------|--------|
| Board Approval | Obtain Board of Governors Approval | Nov 17, 2018 | ✓ |
| External BRS | Publish Market Notice, External BRS to Release Planning | Feb 27, 2020 | ✓ |
| | Publish External BRS update (v1.1), FAQ update | Apr 16, 2020 | ✓ |
| Config Guides | Post Draft Config Guides | May 29, 2020 | |
| Tech Spec | Publish Technical Specifications | May 29, 2020 | |
| Tariff | File Tariff | Oct 01, 2020 | |
| | Tariff Stakeholder Walkthrough | Dec 04, 2019 | ✓ |
| | Draft Tariff published | Nov 04, 2019 | ✓ |
| BPMs | Post Draft BPM changes | Jul 15, 2020 | |
| | Publish Final Business Practice Manuals | Aug 10, 2020 | |
| External Training | Deliver external training webinar | Jul 21, 2020 | |
| Market Sim | Market Sim Window | Jul 27, 2020 - Sep 04, 2020 | |
| Production Activation | Excess Behind the Meter Production Deployment | Oct 01, 2020 | |
| | Excess Behind the Meter Production Effective Trade Date | Jan 01, 2021 | |

Fall 2020 – Market Settlement Timeline Transformation

| Project Info | Details/Date |
|--------------------------------------|--|
| Application Software Changes | <p>Scope:</p> <ul style="list-style-type: none"> • The California ISO is proposing changes to its market settlement timeline to reduce market participant financial exposure by producing initial settlement statements that will more closely approximate the final settlement, and allow sufficient time for CAISO and market participants to resolve disputes. • The California ISO's current settlement timeline is compressed, which places potentially avoidable burdens on CAISO and market participants. The compressed timeline causes CAISO to publish initial statements of lower financial quality and to sometimes delay the publication of its settlement statements. These inefficiencies impact market participants as they must bear a financial burden of varying magnitude for many business days. • The California ISO and market participants also devote a large level of effort to correct data, re-calculate, process, and validate relatively small financial adjustments associated with optional re-calculations long after the settlement trade date has passed. • To resolve inefficiencies and issues, CAISO proposes to calculate and publish two settlement statements within seventy (70) business days after a trade date and re-align the due dates for settlement quality meter data. • Additionally, and under certain defined circumstances, CAISO proposes to re-calculate and publish three settlement statements between seventy (70) business days after a trade date and twenty-four (24) months after a trade date thus reducing the normal settlement life cycle from thirty-six to twenty-four months. |
| Application Software Changes (cont.) | <p>Impacted Systems:</p> <p>CIDI:</p> <p>The disputable statements in the Statement Disputed drop-down list will be updated to include the new statements per the MSTT. CAISO will continue to accept disputes from the date of statement publication through the dispute deadline, as prescribed by the tariff, and continue to calculate the Adjustment Publication Date based on the Correction Statement, as selected by the dispute analyst, and the Trade Date disputed.</p> <p>CMRI: Data retention impact due to reducing from 39 months to 27 months.</p> <p>MRI-S Metering:</p> <ul style="list-style-type: none"> • Impacts to the external data submission windows that currently exist, as well as the data transfers from MV-90 to MRI-S Metering and MRI-S Metering to Settlements. • Data submission/freeze timeline. <p>MRI-S Settlements:</p> <ul style="list-style-type: none"> • Update the Post Date calculation, as the payment calendar will change. • Auto scheduling for statement generation. • Statement posting. |

Fall 2020 – Market Settlement Timeline Transformation (cont.)

| Project Info | Details/Date | |
|--------------------------------------|--|--|
| Application Software Changes (cont.) | <p>Market Clearing: Updates needed to the deviation Interest calculations and credit calculation functions. Updates needed for invoice clearing and interest calculations. Check PTB publication timeline for any updates. Will impact the Extrapolation Component (one of 16 EAL Components) for Daily & Monthly Extrapolation and credit calculation.</p> <p>Recalculation Log: Post update recalculation log.</p> <p>Payment Calendar: Post the payment calendar to reflect overlap between existing and new timeline.</p> <p>OASIS:</p> <ul style="list-style-type: none"> • Data retention impact due to reducing from 39 months to 27 months. • FERC 841 related data availability needs to be vetted. | |
| BPM Changes | Credit Management and Market Clearing Definitions & Acronyms Energy Imbalance Market Market Instruments Metering Reliability Requirement | Rules of Conduct Administration Settlements and Billing <ul style="list-style-type: none"> • Section 2.3.2 – Schedule for Settlement Statement Publication • Section 2.3.5.1.1 – Dispute Timing • Section 2.3.6 – Billing & Payment • Section 2.4 – Payment Calendars |
| Tariff Change | Section 10: Metering Section 11: California ISO Settlements and Billing (Publication Contingency document) Section 12: Creditworthiness Section 13: Dispute Resolution | Section 26: Transmission Rates And Charges Section 27: California ISO Markets And Processes Section 29: Energy Imbalance Market Section 37: Rules Of Conduct |

Fall 2020 – Market Settlement Timeline Transformation (cont.)

| Milestone Type | Milestone Name | Dates | Status |
|-----------------------|--|-----------------------------|--------|
| Board Approval | Obtain Board of Governors Approval | Nov 14, 2019 | ✓ |
| External BRS | Post External BRS | Feb 06, 2020 | ✓ |
| Config Guides | Post Draft Configuration Guides | May 29, 2020 | |
| Tech Spec | Create ISO Interface Spec (Tech spec) | May 29, 2020 | |
| Tariff | Draft Tariff | Jun 26, 2020 | |
| BPMs | Post Draft BPM changes | Jul 20, 2020 | |
| External Training | Deliver External Training | Jul 20, 2020 | |
| Market Simulation | Market simulation window | Jul 27, 2020 - Sep 04, 2020 | |
| Production Activation | Market Settlement Timeline Deployment | Oct 01, 2020 | |
| | Market Settlements Timeline Effective Trade Date | Jan 01, 2021 | |

Fall 2020 – EIM Enhancements 2020

| Project Info | Details/Date |
|------------------------------|--|
| Application Software Changes | <p>Scope: Energy Imbalance Market Enhancements 2020, is to collectively address important issues identified by EIM market participants through Customer Inquiry, Dispute and Information system (CIDI) requests to improve the visibility, functions and features in Energy Imbalance Market (EIM)</p> <p>Technology team and customer services review the 66 EIM enhancement requests by EIM entities and 4 internal request by ISO market operator. Combine each EIM entities submitted the priority list of 10 enhancements, ISO determine to include total 15 requests in EIM enhancement 2020 project.</p> <p>Impacted Systems: BAAOP</p> <ul style="list-style-type: none"> • Allow EIM entity override activation for the contingencies up to 15 in NA contingency list • Add visibility of other adjacent BAA's ETSR locks and reasons • Add Static ETSR transfer data to RTD Dispatch Control Display (ETSR tab). Add Static ETSR transfer data to BAAOP ETSR Detail Display (in RTD) • Fix/Improve SVG One Lines. Request to be able to view SE and telemetry values for all substation flows and elements. • In RTD/RTPD Dispatch Control display, in Dispatch Instruction Review table, add columns for UP and DN remaining ramp capacity (5/15 minute respectively). In addition, include the sum of these columns at bottom of table. Example Calculation: RTD UP Ramp = MIN(5MinRampRate, [UpperLim-CurrentDispatch]). • Add Supplemental DOT to VER resources to Dispatch Control displays; Detail: In BAAOP RTD/RTPD Dispatch Control, add SUPP DOT column • Fix the functionality for Manual Dispatches - users should be able to utilize MSG functions, such as designating a specific configuration, and users should be able to do commitment override • Utilize the "information" button in the market UI to connect to Knowledge Articles from CIDI for both ISO and EIM Operator • EIM Entities have a notification status of market inputs, showing if BAAOP received the latest payload of critical market inputs. Example Critical data submissions: (not all inclusive) <ul style="list-style-type: none"> • BAAOP Dynamic Limits • BAAOP RTIS • ALFS (load forecast and/or VER forecast) • ICCP link |

Fall 2020 – EIM Enhancements 2020 (cont.)

| Project Info | Details/Date |
|--------------------------------------|---|
| Application Software Changes (cont.) | <p><u>Impacted Systems:</u></p> <p>BSAP</p> <ul style="list-style-type: none"> • Add Manual Dispatch information to BSAP Resource Bal Viewer. Add any applicable deviations that used in the test to BSAP BAA Bal Viewer. • For the Bid Range Capacity Test Results report, Requirement Amount Column needs to publish the true requirement, not just the INCREMENTAL/DECREMENTAL requirement <p>RTM</p> <ul style="list-style-type: none"> • Publish the data of the MW infeasibility data and ABC Up and Down Dispatches of RTPD/RTD • Publish the effective load bias for the market run for RTPD and RTD • Publish the effective ETSR import and export limits for the market run for RTPD and RTD <p>CMRI</p> <ul style="list-style-type: none"> • Display and publish, download the data of the MW infeasibility data and ABC Up and Down Dispatches of RTPD/RTD • Display and publish, download the data of the effective load bias for the market run for RTPD and RTD • Display and publish, download the effective ETSR import and export limits for the market run for RTPD and RTD • For the Bid Range Capacity Test Results report, Requirement Amount Column needs to display and publish, download the true requirement, not just the INCREMENTAL/DECREMENTAL requirement <p>OASIS</p> <ul style="list-style-type: none"> • The Net EIM transfer limit report in OASIS shall be available for download via API. <p>Settlements</p> |
| BPM Changes | Market Instruments |
| Tariff Change | N/A |

Fall 2020 – EIM Enhancements 2020 (cont.)

| Milestone Type | Milestone Name | Dates | Status |
|-----------------------|---------------------------------------|--|--------|
| Board Approval | Obtain Board of Governors Approval | N/A | |
| External BRS | Milestone: Post External BRS | Mar 24, 2020 | ✓ |
| Config Guides | Post Draft Config Guides | May 29, 2020 | |
| Tech Spec | Create ISO Interface Spec (Tech spec) | May 29, 2020 | |
| Tariff | File Tariff | N/A | |
| BPMs | Draft BPM changes | TBD | |
| External Training | Deliver External Training | Jul 23, 2020 Overview Training Sep 21, 2020 | |
| Market Sim | Market Sim Window | Jul 27, 2020 - Sep 04, 2020 | |
| Production Activation | EIM Enhancements 2020 | Oct 01, 2020 | |

Fall 2020 – ADS Replacement

| Project Info | Details/Date |
|------------------------------|--|
| Application Software Changes | <ul style="list-style-type: none"> • Transition to web-based user interface to eliminate the need to install thick client • Transition ADS provisioning to the Access and Identity Management (AIM) application including Resource Level Access Controls (RACL) access • The query tool will provide 30 days of historical data • Various user interface enhancements adding content per Operation's request • ADS B2B services changes |
| BPM Changes | <ul style="list-style-type: none"> • Market Instruments • Market Operations |
| Tariff Changes | <ul style="list-style-type: none"> • N/A |

| Milestone Type | Milestone Name | Dates | Status |
|-----------------------|--|-----------------------------|--------|
| Board Approval | Obtain Board of Governors Approval | N/A | |
| External BRS | Post External BRS | Aug 06, 2018 | ✓ |
| ADS Update | ADS Update Meeting | Aug 15, 2018 | ✓ |
| ADS Demonstration | ADS WebEx Demonstration | Apr 16, 2020 | ✓ |
| Config Guides | Design review - BPM and Tariff SMEs | N/A | |
| Tech Spec | Publish Technical Specifications | May 29, 2020 | |
| Preview | ADS Replacement Application Preview | Jun 22, 2020 | |
| Tariff | Tariff Activities | N/A | |
| BPMs | Post Draft BPM changes | Jul 20, 2020 | |
| External Training | Provisioning ADS ACL Training | Jun 01, 2020 | |
| | External Training Part 1 (Application Preview preparation) | Jun 11, 2020 | |
| | Deliver External Training Part 2 | Jul 16, 2020 | |
| Market Sim | Market Sim Window | Jul 27, 2020 - Sep 04, 2020 | |
| Production Activation | ADS Replacement | Oct 01, 2020 | |
| Production | ADS Parallel Operations | TBD | |
| Decommission | Old ADS Decommission | TBD | |

ADS Replacement & ADS Query Tool Changes

- ADS Replacement project is scheduled to go-live in 2020
 - UI Technology upgrade
 - Replace Delphi thick-client with browser based thin-client
 - Support for Chrome and 'Edge with Chromium' Only (no IE support)
 - Slight changes in UI look and feel
 - New ADS UI demonstrated at ADS CPG on 4/16
- External BRS posted in 2018, provides details of planned changes.
 - <http://www.aiso.com/Documents/BusinessRequirementsSpecification-ADSReplacement.pdf>
- Noteworthy items for Settlements User Group, w.r.t the ADS Query Tool
 - XML export option will not available
 - Excel export option will be supported
 - Query tool data will be limited to 30 days (not 39 months)

ADS Replacement & ADS Query Tool Changes

- Some of the data set you would query from ADS Query tool is also available in the following CMRI Reports:
 - RTD Schedules.
 - FMM Schedules
 - HASP Schedules
- If you need additional ADS query tool data beyond 30 days, that is not in the CMRI reports, you must plan to download and accumulate data on your end.
- Follow the RUG for timelines associated to the ADS Replacement Project

Fall 2020 – FERC Order 841 – Requested Adjustments

Project Info

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

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

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

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

Fall 2020 – FERC Order 841 – FERC requested adjustments

| Project Info | Details/Date |
|------------------------------|--|
| Application Software Changes | <ul style="list-style-type: none"> • Master File • Settlements |
| BPM Changes | <ul style="list-style-type: none"> • Market Instruments • Metering • Settlements and Billing |
| Tariff Changes | <ul style="list-style-type: none"> • New Tariff Section 10.1.3.4 • Updates to 4.6.11, 27.9, Appendix K |

| Milestone Type | Milestone Name | Dates | Status |
|-----------------------|---------------------------------------|-----------------------------|--------|
| Board Approval | Obtain Board of Governors Approval | N/A | |
| External BRS | Milestone: Post External BRS | Apr 01, 2020 | ✓ |
| Config Guides | Post Draft Config Guides | May 29, 2020 | |
| Tech Spec | Create ISO Interface Spec (Tech spec) | May 29, 2020 | |
| Tariff | File Tariff | Jan 21, 2020 | ✓ |
| BPMs | Post Draft BPM changes | TBD | |
| External Training | Deliver External Training | TBD | |
| Market Sim | Market Sim Window | Jul 27, 2020 - Sep 04, 2020 | |
| Production Activation | FERC 841 - Requested Adjustments | Oct 01, 2020 | |

Fall 2020 – FRP Improvements – Buffer and Min

Project Info

Improvements are needed for addressing the flexible ramping product (FRP) issues identified in the CAISO Energy Markets Price Performance report. The flexible ramping product secures additional ramping capability that can be dispatched in subsequent market runs to cover a range in the forecasted net load.

The scope behind this policy and project include:

- To maintain up to 100% (configurable) of FRP awards in the buffer interval that were procured in the prior Fifteen Minute Market (FMM) to preserve ramping capability for the Real Time Dispatch (RTD).
- Changing Proxy Demand Response (PDR) dispatch capability default from five minute to hourly.
- **To enforce a minimum FRP requirement in the Balancing Authority Area (BAA) that will ensure a minimum amount of FRP to be procured from resources within the BAA.**

| Project Info | Details/Date |
|------------------------------|--|
| Application Software Changes | <ul style="list-style-type: none">• Master File• RTM (Real Time Market)• OASIS (Open Access Same time Information System) |
| BPM Changes | <ul style="list-style-type: none">• Market Instruments• Market Operations |
| Tariff Changes | <ul style="list-style-type: none">• N/A |

Fall 2020 – FRP Improvements – Buffer and Min

| Milestone Type | Milestone Name | Dates | Status |
|-----------------------|---------------------------------------|-----------------------------|--------|
| Board Approval | Obtain Board of Governors Approval | N/A | |
| External BRS | Milestone: Post External BRS | May 05, 2020 | |
| Config Guides | Post Draft Config Guides | N/A | |
| Tech Spec | Create ISO Interface Spec (Tech spec) | N/A | |
| Tariff | File Tariff | N/A | |
| BPMs | Post Draft BPM changes | TBD | |
| External Training | Deliver External Training | TBD | |
| Market Sim | Market Sim Window | Jul 27, 2020 - Sep 04, 2020 | |
| Production Activation | FRP Improvements - Buffer and Min | Oct 01, 2020 | |

Fall 2020 – Aliso Canyon Ph5 - Dynamic Competitive Path Assessment

| Project Info | Details/Date |
|------------------------------|---|
| Application Software Changes | <p>Scope: This project will consider enhancements to the existing Dynamic Competitive Path Assessment (DCPA) and Gas Nomogram capabilities currently in production.</p> <p>IFM/RTN: Formulate and solve the linear programming problem for maximizing the Residual Supplier Index (RSI) for each binding constraint that DCPA is applied.</p> <p>SMDM: Enhance the User Interface to include “All Markets” when the user is defining “Market” within the Curtailment to Process section.</p> <p>SMDM: Creation of error message if the RT curtail type “incremental” or “absolute” are used and total curtailment is left null.</p> |
| BPM Changes | <ul style="list-style-type: none"> Managing Full Network Model Market Operations |
| Tariff Changes | <ul style="list-style-type: none"> N/A |

| Milestone Type | Milestone Name | Dates | Status |
|-----------------------|--|-----------------------------|--------|
| Board Approval | Obtain Board of Governors Approval - NO BOG Needed | N/A | |
| External BRS | Milestone: Post External BRS | May 05, 2020 | |
| Config Guides | Post Draft Config Guides | N/A | |
| Tech Spec | Publish Technical Specifications | N/A | |
| Tariff | File Tariff | N/A | |
| BPMs | Post Draft BPM changes | Jul 20, 2020 | |
| External Training | Deliver External Training | N/A | |
| Market Sim | Market Sim Window | Jul 27, 2020 - Sep 04, 2020 | |
| Production Activation | Aliso Canyon Phase 5 - Dynamic Competitive Path Assessment | Oct 01, 2020 | |

Fall 2020 – Hybrid Resources

| Project Info | Details/Date |
|------------------------------|---|
| Application Software Changes | <p>Scope:</p> <ul style="list-style-type: none"> - Update NRI process (for ISO co-located resources) and EIM Entity SC Process (for EIM co-located resources) to account for association to interconnection constraint; determine constraint max and min limits - Model co-located resources with generation aggregate interconnection constraint - IFM and RTM market enhancements to model, enforce interconnection constraint for co-located resources <p>Impacted Systems:</p> <ul style="list-style-type: none"> - Master File enhancements to model interconnection constraint for associated co-located resources (ISO and EIM) - IFM/RTM markets will model the generation aggregate interconnection constraint (includes modeling constraint within EIM Resource Sufficiency Tests) |
| BPM Changes | <ul style="list-style-type: none"> • Energy Imbalance Market • Generator Management • Generator Interconnection Protocol • Market Operations • Market Instruments |
| Tariff Changes | <ul style="list-style-type: none"> • Tariff Sections TBD |

| Milestone Type | Milestone Name | Dates | Status |
|-----------------------|---------------------------------------|-----------------------------|--------|
| Board Approval | Obtain Board of Governors Approval | N/A | |
| External BRS | Milestone: Post External BRS | TBD | |
| Config Guides | Post Draft Config Guides | N/A | |
| Tech Spec | Create ISO Interface Spec (Tech spec) | TBD | |
| Tariff | Draft Tariff | TBD | |
| BPMs | Draft BPM changes | TBD | |
| External Training | Deliver External Training | TBD | |
| Market Sim | Market Sim Window | Jul 27, 2020 - Sep 04, 2020 | |
| Production Activation | Hybrid Resources Phase 1 | Oct 01, 2020 | |

2021 Spring Release

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

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

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

Stay Informed

Ways to participate in releases

- Visit the Release Planning page
 - <http://www.caiso.com/informed/Pages/ReleasePlanning/Default.aspx>
- Attend meetings
 - Release Users Group (RUG) bi-weekly meetings
 - Initiative status updates
 - System change updates on independent releases
 - Market Simulation calls
 - Visit the ISO calendar at www.caiso.com for meeting dates and times and add events to your calendar
 - Typically held on Mondays and Thursdays
 - Market Performance and Planning Forum
 - Bi-monthly review of market performance issues
 - High level discussion of release planning, implementation and new market enhancements

What to look for on the calendar...

Calendar of Meetings, Training and Events

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

| 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) 8:30am - 9:30am 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) 8:15am - 9:00am 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)

