



Market Simulation Forum

February 20, 2025

Martin Kraynov

Market Simulation Coordinator

ISO PUBLIC

COPYRIGHT ©2025 BY CALIFORNIA INDEPENDENT SYSTEM OPERATOR. ALL RIGHTS RESERVED.

Overview

- Presentation Summary of Changes
- Market Simulation Overview
- Market Simulation MAP Stage Availability
- Market Simulation MAP Stage Code
- Market Simulation Activities
- Market Simulation Settlements (if needed)
- Market Simulation Initiatives - Current
 - Congestion Revenue Rights (CRR) System Upgrade
 - FERC881 Track 2
 - Application Framework (aka EOL)
 - Highest Emergency Rating (HER)
- Market Simulation Initiatives - Upcoming
 - Hybrid Resources Phase 2C (HR2C) RIMS
 - Transmission Exchange Agreement (TEA)
 - EDAM/DAME/WEIM/BAA/ISO
 - Subscriber Participation Transmission Ownership Model (SPTO)

Summary Of Changes: 02/20/25

- Slide 8: Updated CRR MSIM Week 4 and 5 Dates
- Slide 9 & 10: Updated environment availability
- Slide 11: Updated Market Sim project overview slide
- Slide 18: Updated full activation date for TEA initiative
- Slide 22: Added slide for SPTO

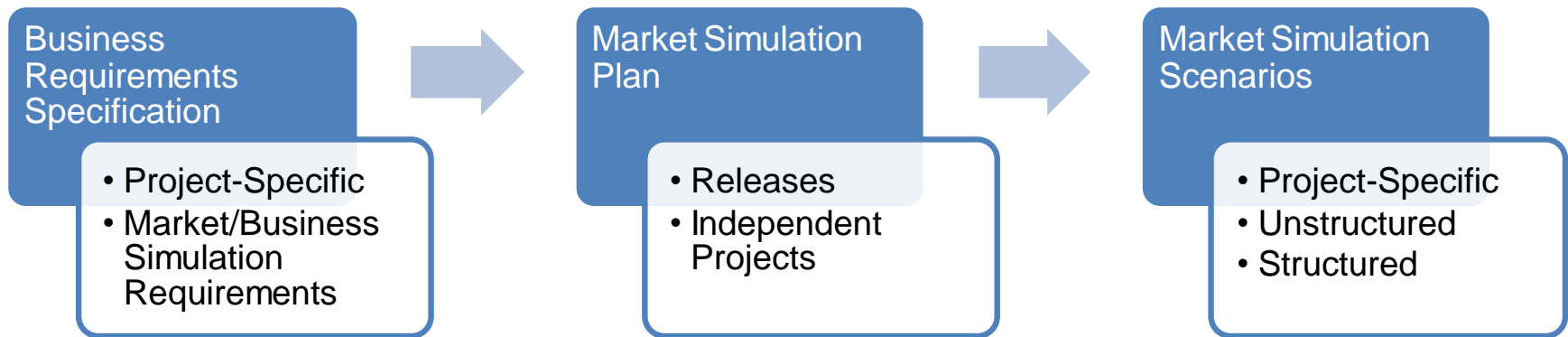
Market Simulation Overview

- Covers activities in the MAP Stage environment
- MAP Stage is an integrated Production-like environment that is available to customers with provisioned access
- Allows customers to experience ISO release/project implementations prior to Production implementation
- Market Simulation will allow customers and the CAISO to conduct specific market scenarios in a test environment prior to the Production activation to ensure that all system interfaces are functioning as expected and to produce simulated market results
- Customers may also use MAP Stage to validate the interaction of customer-driven changes with the ISO systems

Reasons for Market Simulation

- **Rule impacts:** Generalized changes in market rules, bidding rules, settlements rules, market design changes, or other business rules.
- **Interface changes:** Changes that impact templates (RA Supply Plan, Master File RDT, etc.), User Interfaces (UI), Application Programming Interface (API) / Web Service.
- **New/modified application/report:** Changes that cause addition/modification of ISO systems or reports, especially when data input is required by the customer
- **New/modified system process:** Modification of data flow in systems, especially if the new/modified process requires the customer to demonstrate proficiency prior to Production
- **New/modified model data:** Addition or substantial modification of model data as a market solution or export provided by the ISO
- **New/modified user role:** The addition or modification of access permissions for a user role

Market Simulation for ISO Implementation of Releases & Projects - Deliverables



Market Simulation Forums

Scheduled for 2-3PM PT

	Monday	Tuesday	Wednesday	Thursday	Friday
February	3	4	5	6	7
	10	11	12	13	14
	17	18	19	20	21
	24	25	26	27	28
March	3	4	5	6	7
	10	11	12	13	14
	17	18	19	20	21
	24	25	26	27	28
	31				

**Market
Simulation
Forum**

ISO Closure

CRR System Upgrade – Market Simulation Meetings

Scheduled for 1-2PM PT

	Monday	Tuesday	Wednesday	Thursday	Friday
February	3	4	5	6	7
	10	11	12	13	14
	17	18	19	20	21
	24	25	26	27	28
March	3	4	5	6	7
	10	11	12	13	14
	17	18	19	20	21
	24	25	26	27	28
	31				

**CRR MSIM
Meetings**

ISO Closure

Market Simulation MAP Stage Availability

- MAP Stage weekly maintenance window is Friday*

System	UI	API	Comments
ADS			Closed 3/10 to 3/15
ALFS	Not Available		Closed 3/10 to 3/15
BAAOP			Closed 3/10 to 3/15
BSAP			Closed 3/10 to 3/15
CIRA			Closed 3/10 to 3/15
CMRI			Closed 3/10 to 3/15
CRR (old)		Not Available	Read-only available after cut-over to new CRR. Closed 3/10 to 3/15.
CRR (new)			Closed on Friday 2/21, and 3/10 to 3/15
DRRS			Closed 3/10 to 3/15
ECIC	Not Available		Closed 3/10 to 3/15
FDR	Not Available		Closed 3/10 to 3/15
MF			Closed 3/10 to 3/15
OASIS			Closed 3/10 to 3/15
OMS			Closed 3/10 to 3/15
PLC		Not Available	Closed 3/10 to 3/15
RCBSAP			Closed 3/10 to 3/15
RIMS		Not Available	Closed 3/10 to 3/15
SIBR			Closed 3/10 to 3/15
MRIS			Closed 3/10 to 3/15
TR		Not Available	Closed 3/10 to 3/15
webWheel		Not Available	Closed 3/10 to 3/15
webLineR	12/31/24	API available starting 04/01/25	API shall be updated to green on 4/01/25 to reflect availability. Closed 3/10 to 3/15.
AVAILABLE			
MAINTENANCE			

Market Simulation MAP Stage Code

System	MAP-STAGE	PRODUCTION	Comments
Market	12/2/24 – Release 20.01	12/10/24 – Release 20.01	
FNM	DB130.5 to MS Oct 2024 TD 10/18	DB132	
ADS			
ALFS			
BAAOP			
BSAP			
CIRA			
CMRI	Application Framework		
DRRS			
ECIC			
FDR			
MF			
OASIS	Application Framework		
RCBSAP	20.2	18	
SIBR			
TR			

AHEAD OF PRODUCTION
SYNCED WITH PRODUCTION
BEHIND PRODUCTION

Market Simulation Activities

Initiative	Market Simulation	Comments	Activation
Congestion Revenue Rights (CRR) System Upgrade	Connectivity Testing: <ul style="list-style-type: none"> MUI: 02/03/25 – 02/14/25 B2B API (First): 02/03/25 – 02/14/25 B2B API (Second): 02/07/25 – 02/14/25 Market Simulation: <ul style="list-style-type: none"> Structured: 02/18/25 – 03/05/25 Unstructured: 03/18/25 – 03/27/25 	N/A	04/30/25
Highest Emergency Rating (HER)	Unstructured MSIM: 2/24/25 – 3/07/25	No settlements impacts	03/20/25
FERC881 Track 2	Connectivity Testing: <ul style="list-style-type: none"> UI: 12/31/24 – 04/01/25 API: 04/01/25 – 06/30/25 Market Simulation: <ul style="list-style-type: none"> Unstructured: 04/01/25 – 06/30/25 	Training will be held on 2/19 at 9:00 AM – 10:30 AM PT	Track 2: July 12, 2025
Hybrid Resources Phase 2C (HR2C) - RIMS	Unstructured MSIM: Shapefiles only, 3/13/25 – 3/19/25	No settlements impacts	4/9/25
Transmission Exchange Agreement (TEA)	Unstructured MSIM (WAPA): 2/24/25 – 3/21/25 (new Aggregate Tie) Unstructured MSIM (TEA BRS): July 2025	N/A	Full Activation: Oct 2025
DAME / EDAM / WEIM	See slide 20.	N/A	See slide 20.
Application Framework	Unstructured Market Sim (CMRI, OASIS): 02/03/25 – 02/17/25	N/A	3/14/25 (tentative)
SPTO	See slide 23.	Training: Jun - Sept	Oct 2025

Map-Stage Environment Issues

Initiative	Defects
Congestion Revenue Rights (CRR) System Upgrade	N/A
Highest Emergency Rating (HER)	N/A
FERC881 Track 2	N/A
Hybrid Resources Phase 2C (HR2C) - RIMS	N/A
Transmission Exchange Agreement (TEA)	N/A
DAME / EDAM / WEIM	N/A
Application Framework	Known issues with OASIS and CMRI after cutover. Internal teams are reviewing the issue and working on a solution.
Other projects and issues	

CRR System Upgrade

- ✓ **Registration:** by 9/30/24
- **Multiple Training Sessions:** From 10/28
- **Access Provisioning:** Ready for **MAPSTAGE** provisioning
 - CRR: EXTERNAL CRR HOLDER READ-ONLY ACCESS
 - CRR: EXTERNAL CRR HOLDER READ/WRITE ACCESS
 - CRR: EXTERNAL CRR NDA REPORTS READ-ACCESS
 - CRR: EXTERNAL UTILITY DISTRIBUTION COMPANY (UDC) READ/WRITE ACCESS
 - CRR: EXTERNAL TRANSMISSION OWNERSHIP RIGHT (TOR) OWNER READ/WRITE ACCESS
 - CRR: EXTERNAL CALIFORNIA ENERGY COMMISSION (CEC) READ/WRITE ACCESS
- **Reminder:** OASIS Tech Specs include the new & modified reports (<https://developer.caiso.com>)

CRR System Upgrade – Market Simulation Timeline

Connectivity Testing:

- CRR Market Interface UI (MUI): 02/03/24 – 02/14/25
- B2B API (First): 02/03/25 – 02/14/25
- B2B API (Second): 02/07/25 – 02/14/25

Structured Market Simulation:

- Week 1: 02/18/25 – 02/20/25
- Week 2: 02/25/25 – 02/27/25
- Week 3: 03/04/25 – 03/06/25

Unstructured Market Simulation:

- Week 4: 03/18/25 – 03/20/25
- Week 5: 03/25/25 – 03/27/25

Activation & New Application Cutover: 04/30/25

UI reporting issues:

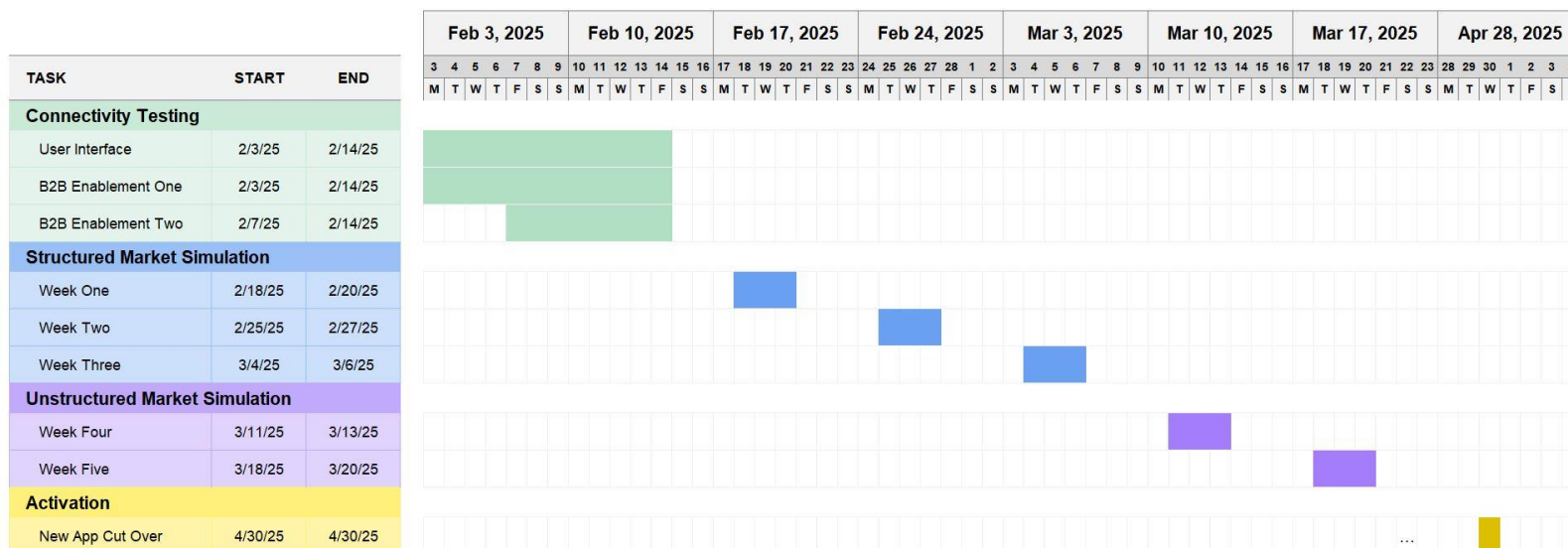
1. Cert Name
2. Time period
3. Screenshots

B2B reporting issues:

1. Cert Name
2. Time period
3. Request Header UUID (for restAPIs only)
4. Endpoint used
5. Request submitted to CRR app (SCID/entityID used)
6. Response from CRR app
7. Screenshots

Note: Refer to CRR [Market Simulation Plan](#) for Market Simulation Scenarios and detailed Market Simulation Calendar.

Market Participant Portal URL for [CRR UI](#) updated for Connectivity Testing. See [Mock APIs](#) and request Parameters and responses.



Highest Emergency Rating (HER)

- ✓ **Register by September 30, 2024**
- ✓ OMS maintenance 10/21-10/25
- ✓ OMS Connectivity starts 10/28
- ✓ Training 10/28
- Unstructured Market Simulation: 02/24/25 – 03/07/25
- Activation: 03/20/25

Guidance on Market Participant Impacts	Source System	Sink System	Reason for Potential Scenario
End-to-End Testing: RC Customers to adjust the ER, HER and limit durations. Note: Reference BRQ403 for more information.	webOMS	webOMS, HANA	New Data Fields

ID#	Business Feature	Req. Type	Potential Application Impacted
HER – BRQ403	<p>System (webOMS) must have the capability for all current user who have read/write access to adjust the following new transmission MVA rating data elements/fields:</p> <ul style="list-style-type: none"> • Emergency Rating Duration (set in minutes) • Highest Emergency Rating Limit (set in MVA) • Highest Emergency Rating Duration (set in minutes) • Start/End time of override (existing field, set for above fields) <p>Implementation note: Operators shall be able to adjust to a higher rating, in addition to how they currently adjust to a lower rating; ; ISO users and RC customers shall use existing “Nature of Work” type of “EQUIPMENT_DERATE” in order to adjust rating higher or lower.</p> <p>Implementation and note: ISO users and RC customers shall utilize existing “Nature of Work” type of “EQUIPMENT_DERATE” in order to adjust to a higher or lower rating.</p>	Core	webOMS

FERC Order 881 Track 2 – Market Simulation Timeline

Connectivity Testing (webLineR Only):

- Provisioning & UI: 12/31/24 – 04/01/25
- API: 04/01/25 – 06/30/25

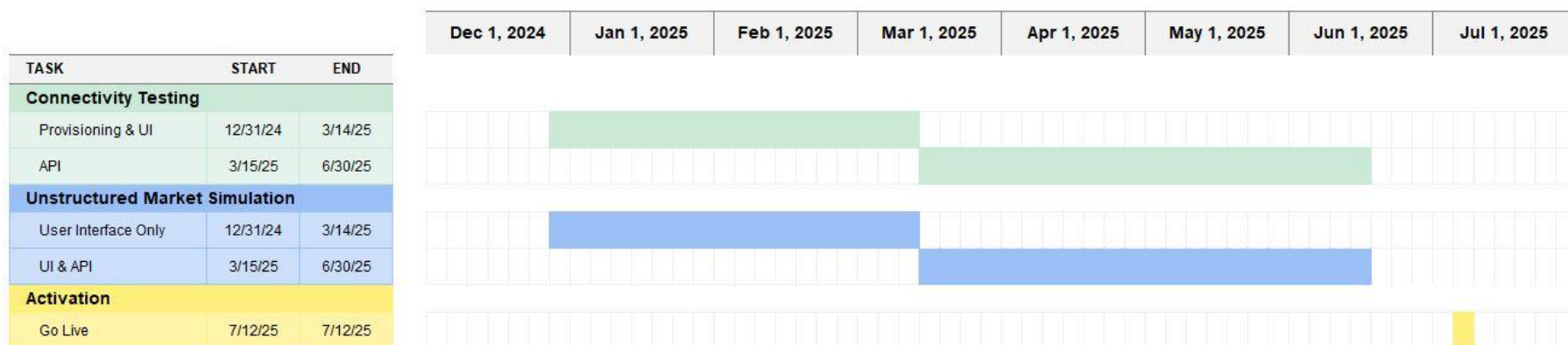
Market Simulation (webLineR Only):

- Unstructured (UI Only): 12/31/24 - 04/01/25
- Unstructured (UI & API): 04/01/25 – 06/30/25

Activation (webLineR Only):

- Go-live: 07/12/25

Note: refer to [webLineR MAPSTAGE](#) to test connectivity. If did not attend the training and would like a copy, please email CustomerTraining@caiso.com for training material.



HR2C RIMS

- **Register by December 31, 2024**
- Unstructured MSIM (Shapefiles): 03/13/25 – 03/19/25
- Activation: 04/09/25

ID#	Guidance on Market Participant Impacts	Source System	Sink System	Reason for Potential Scenario
MKT-004	Unstructured Market Simulation Market Participants must have the capability to input Site information data into web form submission. Note: BU requested that Market Participants have the opportunity to practice filling out and submitting the form prior to production.	N/A	RIMS	<i>Unstructured Market Sim, New Data type</i>
MKT – 005	Unstructured Market Simulation <i>Market Participant must have the capability to upload Topo Map, Sharing Agreement, Shapefile, and provide Site Info via web form.</i>	N/A	RIMS	<i>Unstructured Market Sim, New Data type</i>
MKT – 006	Unstructured Market Simulation <i>Market Participant must have the capability to see on UI uploaded Topo Map, Sharing Agreement, Shapefile, and provide Site Info via web form.</i>	N/A	RIMS	<i>Unstructured Market Sim, New Data type</i>
MKT – 007	Unstructured Market Simulation <i>Market Participants must have the capability to add Topo Map, Site Info, Shapefile, and Sharing Agreement (applicable only to Fuel Type of Solar) to Bucket 1 for any hybrid resource project created with a fuel type of Solar or Wind.</i>	N/A	RIMS	<i>Unstructured Market Sim, New Data type</i>
MKT – 008	Unstructured Market Simulation <i>In the event Market Participant's upload fails validation, Market Participant must receive notification of the error.</i>	N/A	RIMS	<i>Unstructured Market Sim, New Data type</i>

Transmission Exchange Agreement (TEA)

- **Register by December 31, 2024**
- MF, SIBR, ETCC, ITS, Settlements, CMRI, OASIS
- Unstructured MSIM (WAPA Only): 02/24/25 - 03/21/25
- Unstructured MSIM (TEA BRS): July 2025
- First Activation: Week of 03/24/25 (new Aggregate Tie)
- Full Activation: October 2025

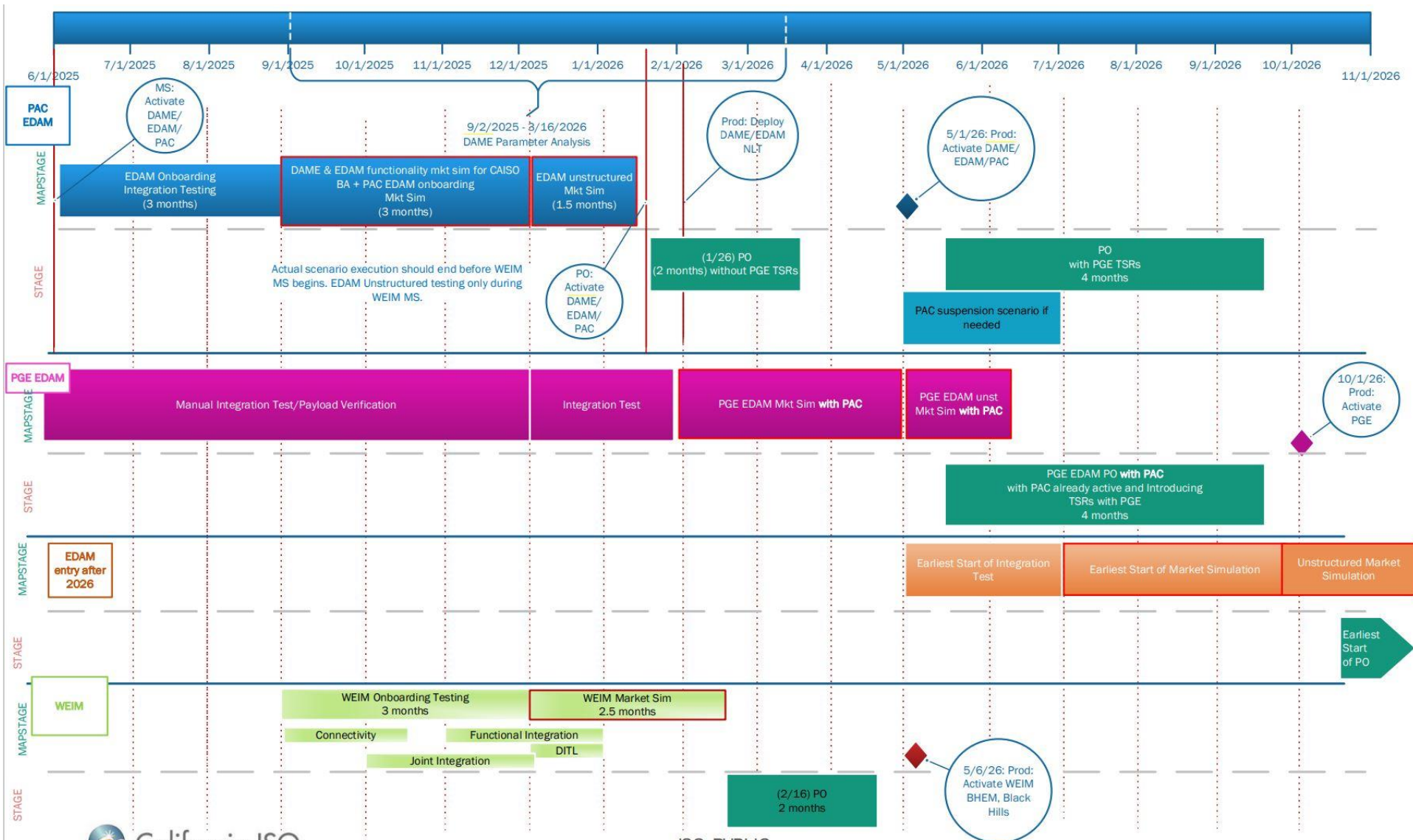
			Feb 17, 2025							Feb 24, 2025							Mar 3, 2025							Mar 10, 2025							Mar 17, 2025							Mar 24, 2025									
TASK	START	END	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S			
Unstructured Market Simulation																																															
WAPA Only	2/24/25	3/14/25																																													
Activation																																															
Go-Live	3/24/25	3/24/25																																													

DAME / EDAM / WEIM – Market Simulation Timeline

Initiative	Connectivity Testing	Integration Testing	Structured Market Sim	Unstructured Market Sim	Parallel Operations	Activation
<u>Day-Ahead Market Enhancements</u>	06/01/25 – 09/01/25	NA	09/01/25 – 12/01/25	12/01/25 – 01/15/26	01/26/26 – 03/26/26 (EDAM OB)	05/01/26
<u>Extended Day-Ahead Market</u>	06/01/25 – 09/01/25	NA	09/01/25 – 12/01/25	12/01/25 – 01/15/26	01/26/26 – 03/26/26 (EDAM OB)	05/01/26
<u>EDAM ISO BAA Participation Rules Track A</u>	06/01/25 – 09/01/25	NA	09/01/25 – 12/01/25	12/01/25 – 01/15/26	01/26/26 – 03/26/26 (EDAM OB)	05/01/26
<u>Extended Day-Ahead Market On-Boarding - Pacificorp</u>	05/01/25 – 05/31/25	06/01/25 – 09/01/25	09/01/25 – 12/01/25	12/01/25 – 01/15/26	01/26/26 – 03/26/26	05/01/26
<u>Extended Day-Ahead Market - PGE</u>	11/01/25 – 11/30/25	12/01/25 – 01/31/26	02/01/26 – 04/30/26	05/01/26 – 06/12/26	05/18/26 – 09/04/26	10/01/26
<u>WEIM - Berkshire Hathaway Energy Montana</u>	09/01/25 – 10/17/25	10/01/26 – 11/30/26	12/01/25 – 02/13/26	NA	02/16/26 – 04/17/26	05/06/26
<u>WEIM – Black Hills</u>	09/01/25 – 10/17/25	10/01/26 – 11/30/26	12/01/25 – 02/13/26	NA	02/16/26 – 04/17/26	05/06/26

Note: [Spring 2026 Release Market Sim Plan](#) posted on Release Planning page.

DAME / EDAM / WEIM – Market Simulation Timeline



Application Framework (EOL)

Connectivity Testing:

- OASIS and CMRI UI: 02/03/25 – 02/17/25
- OASIS and CMRI API: 02/03/25 – 02/17/25

Unstructured Market Simulation:

- OASIS and CMRI: 02/03/25 – 02/17/25

Note: Due to known issue with certificate provisioning after cutover, an additional MSIM period will be offered after provisioning issue fix.

Activation: 3/14/25 (tentative)

TASK	START	END
Connectivity Testing		
CMRI, OASIS UI	2/3/25	2/17/25
CMRI, OASIS API	2/3/25	2/17/25
Unstructured Market Simulation		
CMRI, OASIS	2/3/25	2/17/25
Activation		
Go-live (tentative)	3/14/25	3/14/25

[illegible]

Subscriber Participating Transmission Ownership Model (SPTO)

Connectivity Testing:

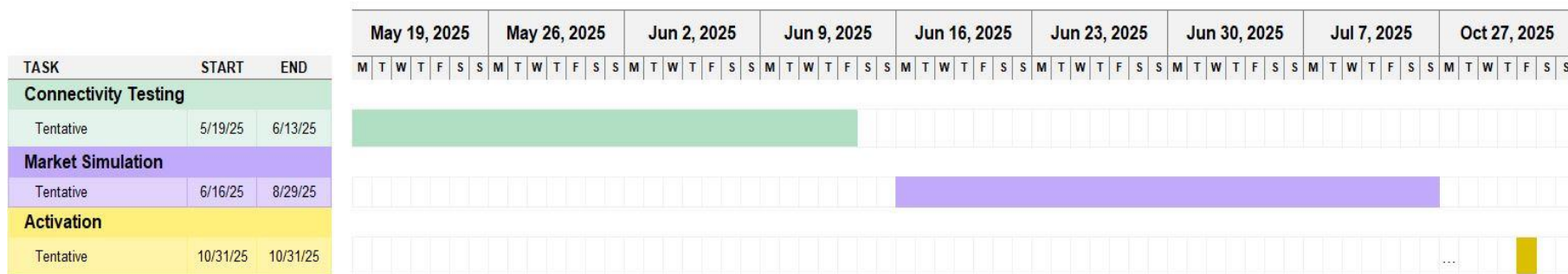
- May – June 2025

Market Simulation:

- June – August 2025

Activation:

- Oct 2025



Next Steps

- Work with your UAA to provision your organization's access to MAP Stage for access to the systems to execute Market Simulation
- Review BRS Market Simulation requirements, Market Simulation Plans, Market Simulation Scenarios and provide any feedback
- Register for participation in Market Simulation
- Attend the Release User Group Forums, every other week, for implementation updates, including active and upcoming Market Simulation activities
- During active Market Simulations, attend the weekly Market Simulation Forums

Market Simulation Registration

- **Please register for your participation in Market Simulation activities for each Market Simulation initiative as appropriate**
 - If you have intent to actively engage in MAP Stage testing of access, systems, functionality, processes, and/or review of results/data
- **This informs CAISO Market Simulation to provide more specific support for your efforts, including**
 - Data setup for your testing
 - More immediate communication and coordination impacting your testing/review
 - More detailed information for the applicable initiatives
- **How to register**
 - Submit CIDI with ‘Functional Environment’ = “Market Simulation”
 - Identify the Market Simulation initiative(s) you will participate in
 - Identify any specific resources as applicable
 - List the contacts and e-mail addresses that you would like to include
 - CIDI is preferred and if you don’t have CIDI, you can e-mail marketsim@caiso.com with the same information

Upcoming Meetings

- [Market Simulation Forum:](#)
 - Thursday, February 27, 2025 @ 2:00 PM PT
- [Release User Group \(RUG\):](#)
 - Tuesday, March 4, 2025 @ 10:00 AM PT
- [CRR Customer Partnership Group \(CPG\):](#)
 - Thursday, February 27, 2025 @ 1:00 PM PT
- CRR Market Simulation Meeting:
 - Tuesday, February 24, 2025 @ 1:00PM PT

Market Simulation Support

- Email general questions to marketsim@caiso.com
- Submit market simulation specific issues and questions in CIDI with subject: **“Project Name: System Name – Issue Title” with Functional Environment set to Market Simulation.**
 - If not related to a Project submit subject as “NA: System Name – Issue Title”
- Service Desk: (916) 351-2309