



California ISO

# Market Simulation Forum

April 24, 2025

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ISO PUBLIC

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# 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
  - FERC881 Track 2
  - Transmission Exchange Agreement (TEA)
- Market Simulation Initiatives - Upcoming
  - Subscriber Participation Transmission Ownership Model (Subscriber PTO)
  - EDAM/DAME/Western EIM/BAA/ISO

# Summary Of Changes

- Slide 10: HER Activation date updated
- Slide 13: CRR Activation date updated
- Slide 14: Added CRR dates for July Postings
- Slide 17: Added slide for webLineR API access clarification
- Slide 22: Updated next meeting dates and times

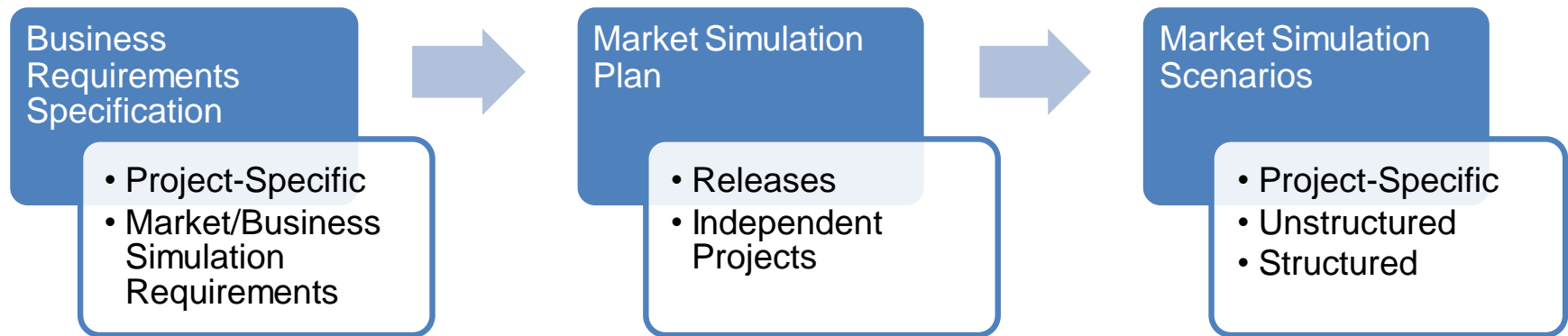
# Market Simulation Overview

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

**Market  
Simulation  
Forum**

**ISO Closure**

**Cancelled**

# Market Simulation MAP Stage Availability

- *MAP Stage weekly maintenance window is Friday\**

System	UI	API	Comments
ADS			
ALFS	Not Available		
BAAOP			
BSAP			
CIRA			
CMRI			
CRR (old)		Not Available	CRR (old) Read-only available after cut-over.
CRR (new)			
DRRS			
ECIC	Not Available		
FDR	Not Available		
MF			
OASIS			
OMS			
PLC		Not Available	
RCBSAP			
RIMS		Not Available	
SIBR			
MRIS			
TR		Not Available	
webWheel		Not Available	
webLineR	12/31/24	From 4/14	
AVAILABLE			
MAINTENANCE			

\*Maintenance may also occur after 1600 PT on other days and may deviate from the weekly maintenance window as necessary



# Market Simulation MAP Stage Code

System	MAP-STAGE	PRODUCTION	Comments
Market	Release 23	Release 23	
FNM	DB134	DB134 from 4/14	
ADS			
ALFS			
BAAOP			
BSAP			
CIRA			
CMRI		From 4/9	
DRRS			
ECIC			
FDR			
MF			
OASIS		From 4/1	
RCBSAP			
SIBR			
TR			

AHEAD OF PRODUCTION
SYNCED WITH PRODUCTION
BEHIND PRODUCTION

# Market Simulation Activities

Initiative	Market Simulation	Comments	Activation
<a href="#">Congestion Revenue Rights (CRR) System Upgrade</a>	<b>Connectivity Testing:</b> <ul style="list-style-type: none"> <li>MUI: 02/03/25 – 02/14/25</li> <li>B2B API (First): 02/03/25 – 02/14/25</li> <li>B2B API (Second): 02/07/25 – 02/14/25</li> </ul> <b>Market Simulation:</b> <ul style="list-style-type: none"> <li>Structured: 02/18/25 – 03/05/25</li> <li>Unstructured: 03/18/25 – 03/27/25</li> </ul>	N/A	05/22/2025
<a href="#">Highest Emergency Rating (HER)</a>	<b>Unstructured Market Simulation:</b> 03/18/25 – 04/03/25	No settlements impacts	04/24/2025
<a href="#">FERC881 Track 2</a>	<b>Connectivity Testing:</b> <ul style="list-style-type: none"> <li>UI: 12/31/24 – 04/14/25</li> <li>API: 04/14/25 – 06/30/25</li> </ul> <b>Market Simulation:</b> <ul style="list-style-type: none"> <li>Unstructured: 04/14/25 – 06/30/25</li> </ul>	N/A	Track 2: July 12, 2025
<a href="#">Hybrid Resources Phase 2C (HR2C) - RIMS</a>	No Market Simulation. ISO to provide live walk-through of functionality on meeting.	No settlements impacts	May 2025 (tentative)
<a href="#">Transmission Exchange Agreement (TEA)</a>	<b>Unstructured MSIM (WAPA):</b> 3/17/25 – 4/4/25 (new Aggregate Tie) <b>Unstructured MSIM (WAPA, TEA BRS):</b> July 2025	N/A	<b>Aggregate Tie:</b> 5/1/25 <b>Full Activation:</b> Oct 2025
<a href="#">DAME / EDAM / Western EIM</a>	See slide 20.	BPM to be posted 7/1	See slide 20.
<a href="#">Application Framework</a>	<b>Unstructured MSIM:</b> 02/03/25 – 02/17/25	N/A	CMRI (4/9/25), OASIS (4/1/25)
<a href="#">Subscriber PTO</a>	See slide 23.	Training: Jun - Sept	Oct 2025

# Map-Stage Environment Issues

Initiative	Defects
<a href="#">Congestion Revenue Rights (CRR) System Upgrade</a>	N/A
<a href="#">Highest Emergency Rating (HER)</a>	N/A
<a href="#">FERC881 Track 2</a>	N/A
<a href="#">Hybrid Resources Phase 2C (HR2C) - RIMS</a>	N/A
<a href="#">Transmission Exchange Agreement (TEA)</a>	N/A
<a href="#">DAME / EDAM / WEIM</a>	N/A
<a href="#">Application Framework</a>	N/A
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: **(completed)**

- 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: **(completed)**

- 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: **(completed)**

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

## Activation & New Application Cutover: 05/22/2025

### UI reporting issues:

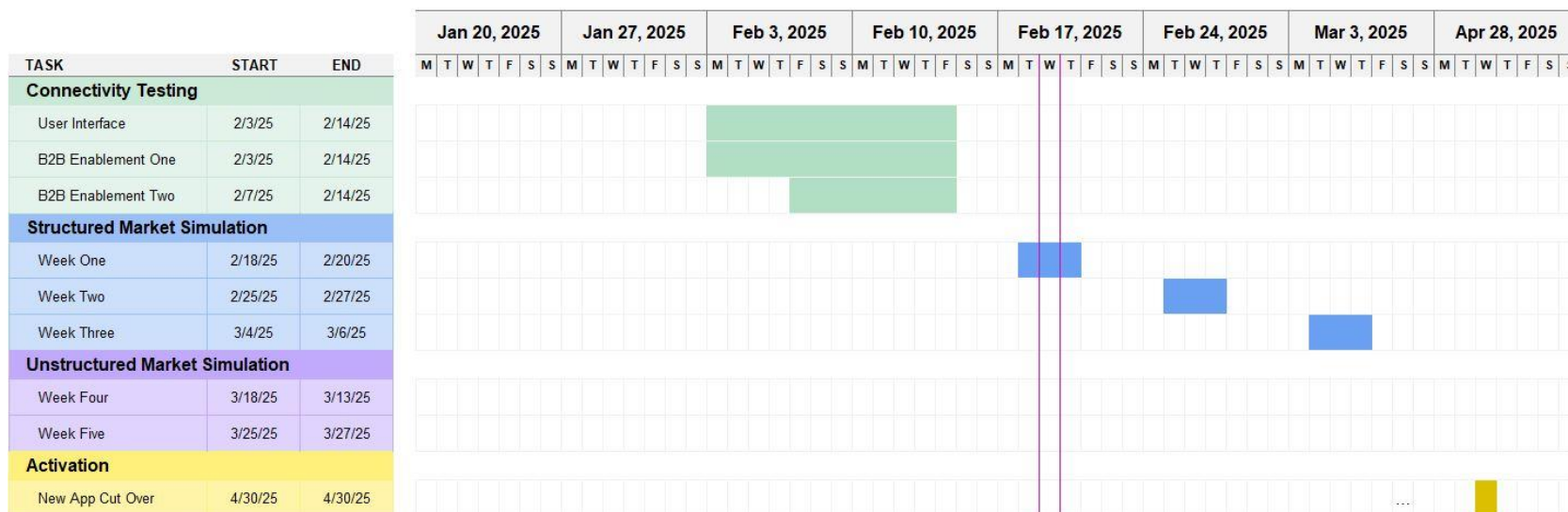
1. Cert Name
2. Time period
3. Screenshots

### 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.



# CRR System Upgrade – Market Simulation Timeline

## **Training:**

- **4/23/25 at 9am:** Refresher Training for Congestion Revenue Rights (CRR) System Upgrade Project for CRR Holders
- **4/23/25 at 1pm:** Refresher Training for Congestion Revenue Rights (CRR) System Upgrade Project for Allocations and Load Migration for LSEs
- **4/24/25 at 9am:** Refresher Training for Congestion Revenue Rights (CRR) System Upgrade Project for Utility Distribution Company (UDC)

## **Postings:**

- **05/23/25 – July Post CRR FNM by SP**
- **06/10/25 – July Post MEQ**
- **06/03/25 – July List of Outages Post by SP**
- **06/10/25 – July Tier 1 (T1) opens 1A (tentative)**

Note: Updates to [Web Posting](#) posted. This document is being provided for visibility only, no action required from participants for this document.

# Highest Emergency Rating (HER)

- ✓ **Register by September 30, 2024**
- ✓ OMS maintenance 10/21-10/25 (completed)
- ✓ OMS Connectivity starts 10/28 (completed)
- ✓ Training 10/28 (completed)
- Unstructured Market Simulation: 03/18/25 – 04/03/25 (completed)
- Activation: **April 24, 2025**

Guidance on Market Participant Impacts	Source System	Sink System	Reason for Potential Scenario
<b>End-to-End Testing:</b>  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"> <li>• Emergency Rating Duration (set in minutes)</li> <li>• Highest Emergency Rating Limit (set in MVA)</li> <li>• Highest Emergency Rating Duration (set in minutes)</li> <li>• Start/End time of override (existing field, set for above fields)</li> </ul> <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 – 04/14/25
- API: 04/14/25 – 06/30/25

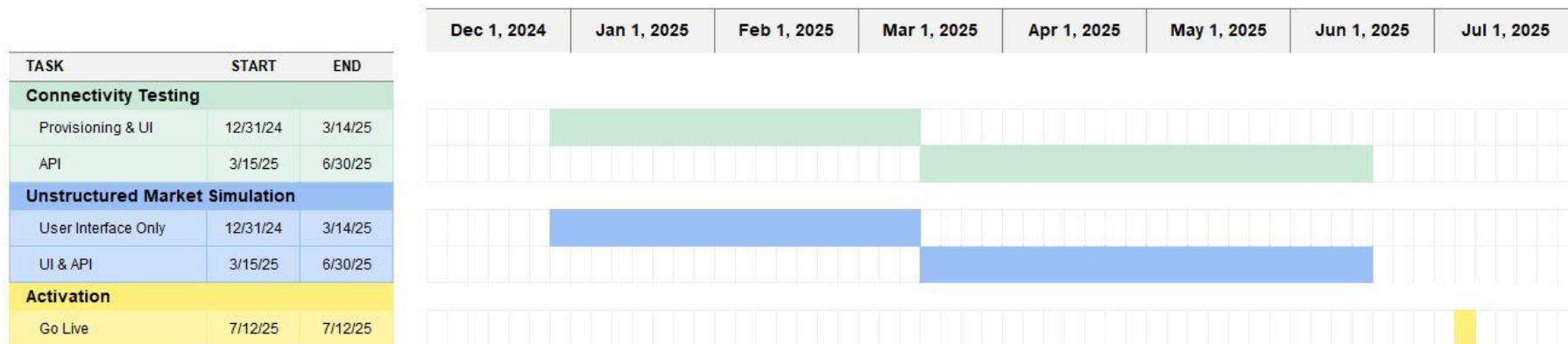
## Market Simulation (webLineR Only):

- Unstructured (UI Only): 12/31/24 - 04/14/25
- Unstructured (UI & API): 04/14/25 – 06/30/25

## Activation (webLineR Only):

- Go-live: 07/12/25

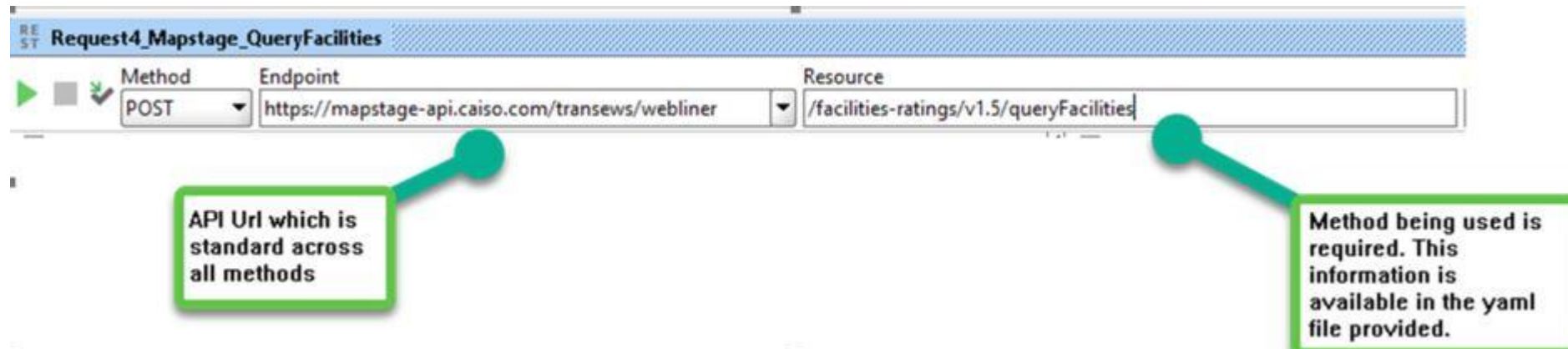
Note: refer to [webLineR MAPSTAGE](#) to test connectivity. If did not attend the training and would like a copy, please email [CustomerTraining@caiso.com](mailto:CustomerTraining@caiso.com) for training material. Note: Extension being provided for Track 3 does not impact Track 1 and Track 2 FNM and/or ICCP functionality.





## FERC881 Track 2 – webLineR Question

The API URL is <https://mapstage-api.caiso.com/transews/webliner/> and is reflected on the ISO Developer site. As this is not a webpage participants will need to use a tool like SOAPUI or Postman to submit API requests and provide the method utilized. For example:



Note: webLineR UI, <https://mapstage-webliner.caiso.com> is a webpage and can be accessed via a valid certificate.

# HR2C RIMS

- **Register by December 31, 2024**
- **No Market Simulation.** ISO walkthrough provided on Wednesday, April 30<sup>th</sup>.
- **Activation: 5/15/2025**

ID#	Guidance on Market Participant Impacts	Source System	Sink System	Reason for Potential Scenario
MKT-004	<b>Unstructured Market Simulation</b>  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	<b>Unstructured Market Simulation</b>  <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	<b>Unstructured Market Simulation</b>  <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	<b>Unstructured Market Simulation</b>  <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	<b>Unstructured Market Simulation</b>  <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): 03/17/25 - 04/4/25 (completed)
- Full Scope Unstructured MSIM (WAPA Only, TEA BRS): July 2025
- First Activation: Week of 05/1/25 (new Aggregate Tie)
- Full Activation: October 2025

Note: Refer to [TEA External BRS](#) for overview of functionality for October Activation.

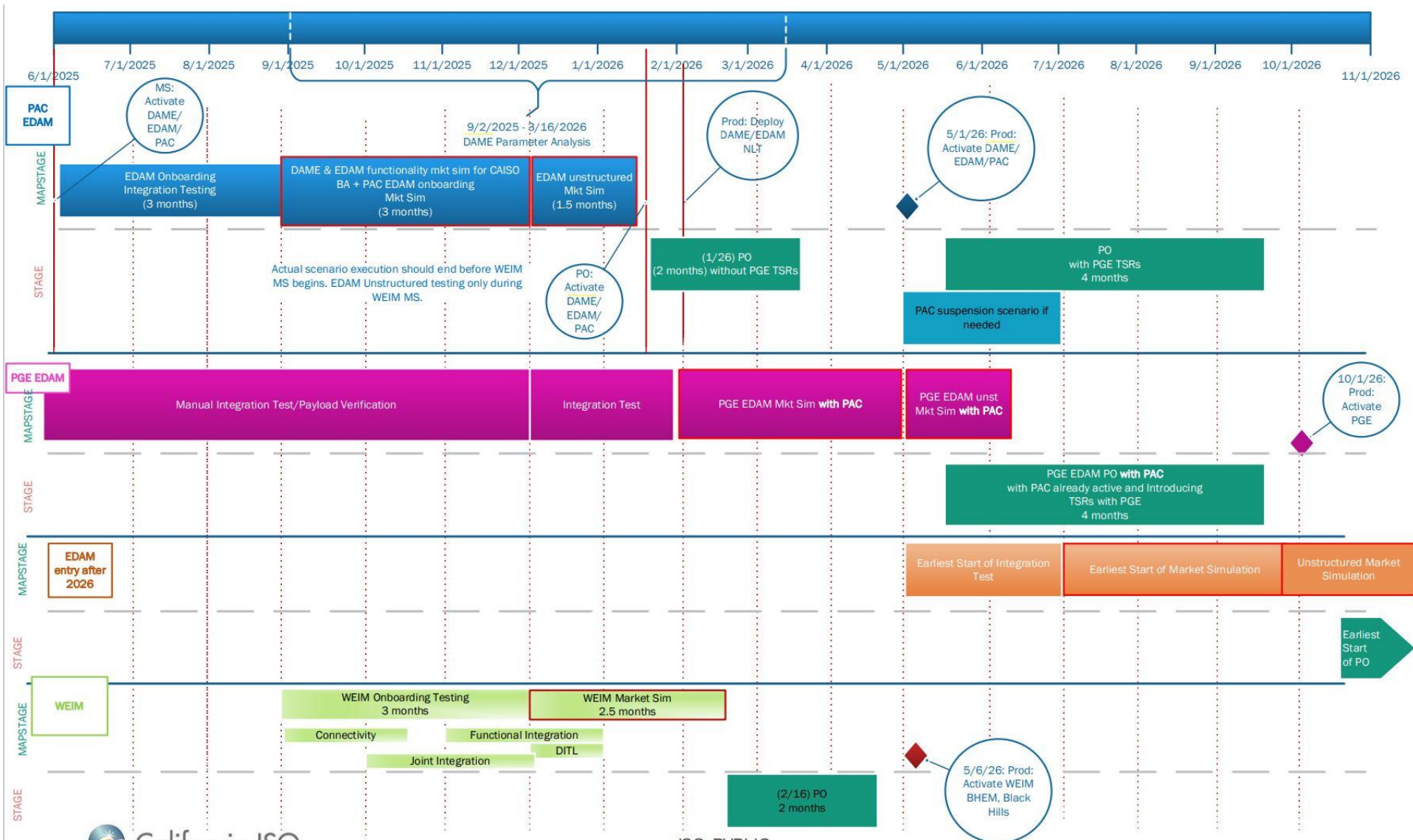
			Feb 17, 2025							Feb 24, 2025							Mar 3, 2025							Mar 10, 2025							Mar 17, 2025							Mar 24, 2025						
TASK			M							M							M							M							M							M						
START																																												
END																																												
Unstructured Market Simulation																																												
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
<a href="#"><u>Day-Ahead Market Enhancements</u></a>	06/01/25 – 09/01/25	06/01/25 – 09/01/25	09/01/25 – 12/01/25	12/01/25 – 01/15/26	01/26/26 – 03/26/26 (EDAM OB)	05/01/26
<a href="#"><u>Extended Day-Ahead Market</u></a>	06/01/25 – 09/01/25	06/01/25 – 09/01/25	09/01/25 – 12/01/25	12/01/25 – 01/15/26	01/26/26 – 03/26/26 (EDAM OB)	05/01/26
<a href="#"><u>EDAM ISO BAA Participation Rules Track A</u></a>	06/01/25 – 09/01/25	06/01/25 – 09/01/25	09/01/25 – 12/01/25	12/01/25 – 01/15/26	01/26/26 – 03/26/26 (EDAM OB)	05/01/26
<a href="#"><u>Extended Day-Ahead Market On-Boarding - Pacificorp</u></a>	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
<a href="#"><u>Extended Day-Ahead Market - PGE</u></a>	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
<a href="#"><u>WEIM - Berkshire Hathaway Energy Montana</u></a>	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
<a href="#"><u>WEIM – Black Hills</u></a>	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. Developer related documentation available for [CMRI](#) and [OASIS](#) for DAME and EDAM. [EDAM Market Simulation Scenarios v1.1](#) and [From/To](#) document.

# DAME / EDAM / WEIM – Market Simulation Timeline



# Application Framework (EOL)

## Connectivity Testing: **(completed)**

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

## Unstructured Market Simulation: **(completed)**

- OASIS and CMRI: 02/03/25 – 02/17/25

## Activation: **(completed)**

- **OASIS:** Week of 4/01/25
- **CMRI:** Week of 4/09/25

			Feb 3, 2025					Feb 10, 2025					Feb 17, 2025					Feb 24, 2025					Mar 10, 2025					Mar 17, 2025								
TASK	START	END	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
Connectivity Testing																																				
CMRI, OASIS UI	2/3/25	2/17/25																																		
CMRI, OASIS UI	2/3/25	2/17/25																																		
Unstructured Market Simulation																																				
CMRI, OASIS	2/3/25	2/17/25																																		
Activation																																				
OASIS	3/12/25	3/12/25																																		
CMRI	3/18/25	3/18/25																																		



# Subscriber Participating Transmission Ownership Model (Subscriber PTO)

## Connectivity Testing:

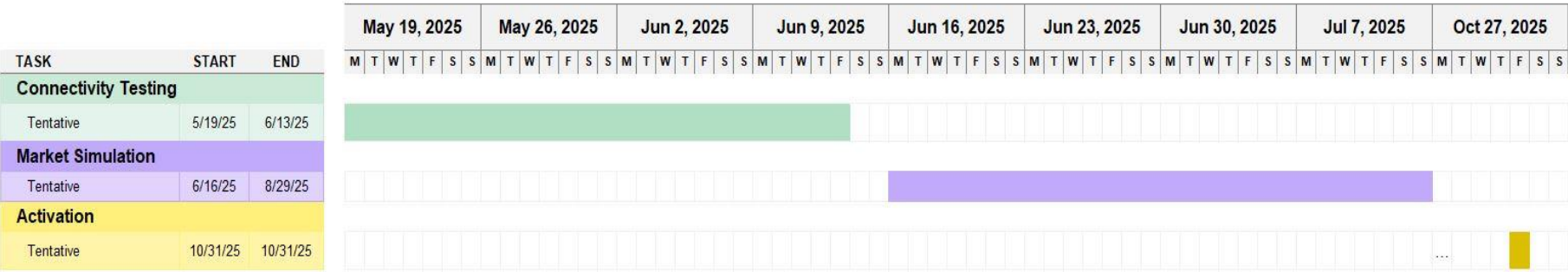
- May – June 2025

## Unstructured Market Simulation:

- 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](mailto:marketsim@caiso.com) with the same information

# Upcoming Meetings

- Market Simulation Forum:
  - Thursday, May 1, 2025 @ 2:00 PM PT
- Release User Group (RUG):
  - Tuesday, April 29, 2025 @ 10:00 AM PT
- CRR Customer Partnership Group (CPG):
  - Thursday, May 29, 2025 @ 10:00 AM PT
- Technical User Group (TUG):
  - Tuesday, May 6, 2025 @ 10:00AM PT
- DAME, EDAM, EDAM CAISO BAA PR:
  - Thursdays 1PM PT, starting April 24<sup>th</sup> (registered participants only)

# Market Simulation Support

- Email general questions to [marketsim@caiso.com](mailto: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