



California ISO

Market Simulation Forum

May 1, 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: Updated project dates
- Slide 18: Updated Hybrid Resource 2C ISO Walkthrough date
- Slide 19: Updated TEA MSIM and activation dates
- Slide 22: Updated next meeting dates and times
- Slide 23: Added clarification for Subscriber PTO
- Slide for Application Framework removed as Activated 4/9

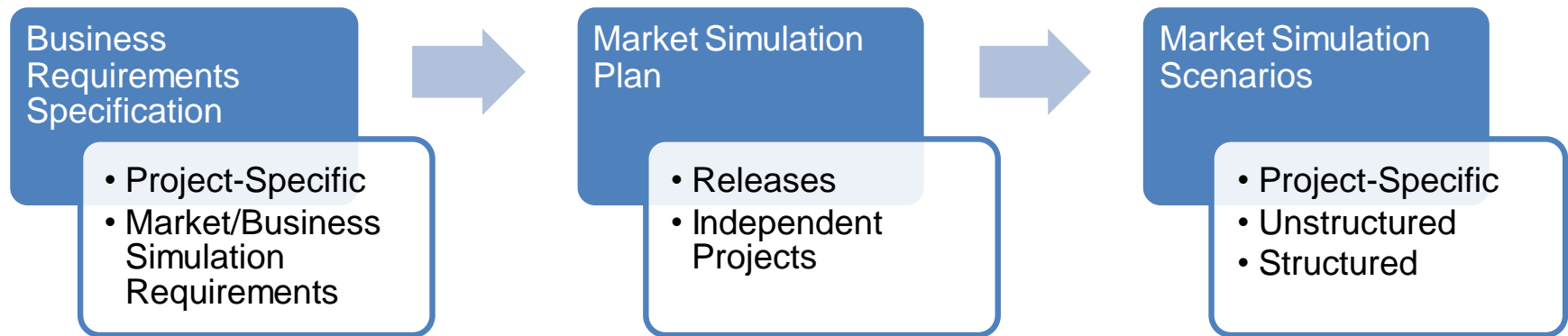
Market Simulation Overview

- 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
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	05/22/2025
Highest Emergency Rating (HER)	Unstructured Market Simulation: 03/18/25 – 04/03/25	No settlements impacts	04/24/2025
FERC881 Track 2	Connectivity Testing: <ul style="list-style-type: none"> UI: 12/31/24 – 04/14/25 API: 04/14/25 – 06/30/25 Market Simulation: <ul style="list-style-type: none"> Unstructured: 04/14/25 – 06/30/25 	N/A	Track 2: July 12, 2025
Hybrid Resources Phase 2C (HR2C) - RIMS	No Market Simulation. ISO to provide live walk-through of functionality on meeting.	No settlements impacts	May 2025 (tentative)
Transmission Exchange Agreement (TEA)	Unstructured MSIM (WAPA): 3/17/25 – 4/4/25 (new Aggregate Tie) Unstructured MSIM (WAPA, TEA BRS): Jan. 2026	N/A	Aggregate Tie: 5/1/25 Full Activation: March 2026
DAME / EDAM / Western EIM	See slide 20.	BPM to be posted 7/1	See slide 20.
Subscriber PTO	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	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.aiso.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:

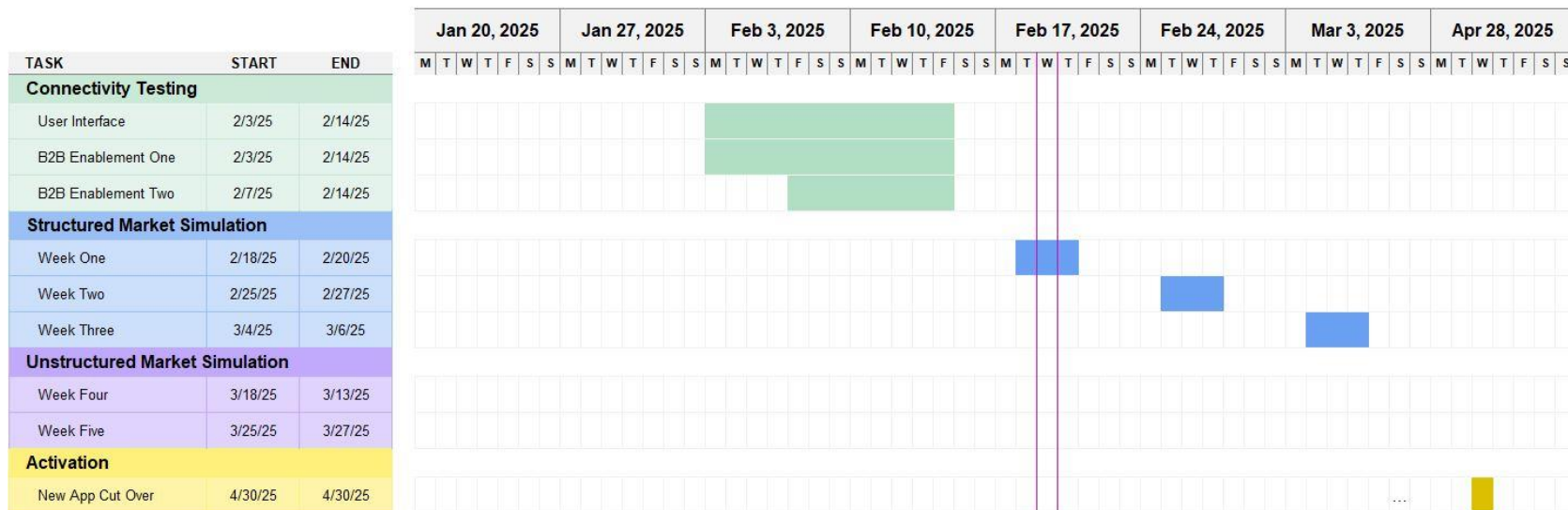
1. Cert Name
2. Time period
3. Screenshots

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
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 – 04/14/25
- API: 04/14/25 – 06/30/25

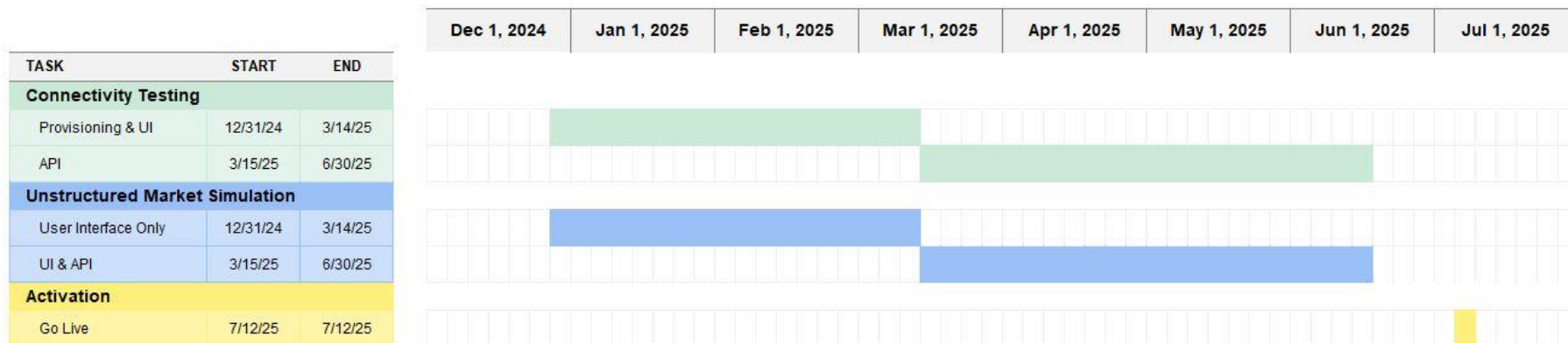
Market Simulation (webLineR Only):

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

Activation (webLineR Only):

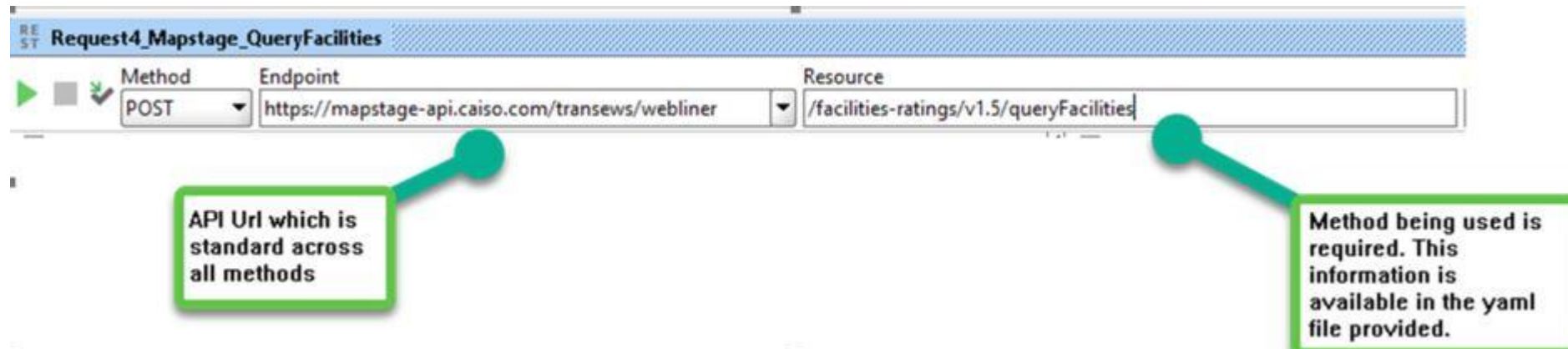
- Go-live: 07/12/25

Note: refer to [webLineR MAPSTAGE](#) to test connectivity. If did not attend the training and would like a copy, please email CustomerTraining@caiso.com 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 **Tuesday, May 6th**.
- Activation: 5/15/2025

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>

- **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): Jan. 2026
- First Activation: Week of 05/1/25 (new Aggregate Tie)
- Full Activation: March 2026

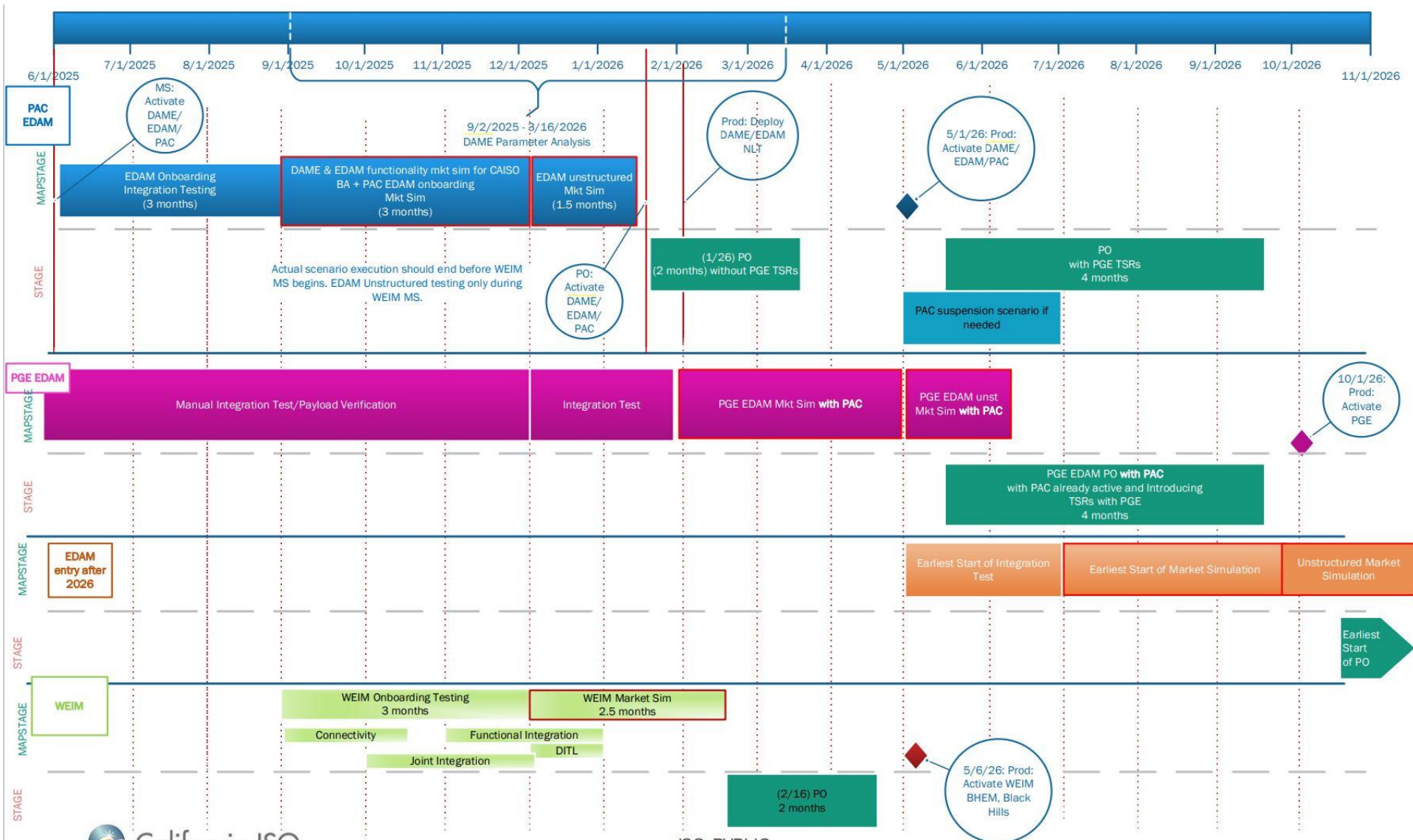
TASK	START	END
Unstructured Market Simulation		
WAPA Only	2/24/25	3/14/25
Activation		
Go-Live	3/24/25	3/24/25

DAME / EDAM / WEIM – Market Simulation Timeline

Initiative	Connectivity Testing	Integration Testing	Structured Market Sim	Unstructured Market Sim	Parallel Operations	Activation
<u>Day-Ahead Market Enhancements</u>	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
<u>Extended Day-Ahead Market</u>	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
<u>EDAM ISO BAA Participation Rules Track A</u>	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
<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. 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



Subscriber Participating Transmission Ownership Model (Subscriber PTO)

Connectivity Testing:

- May – June 2025

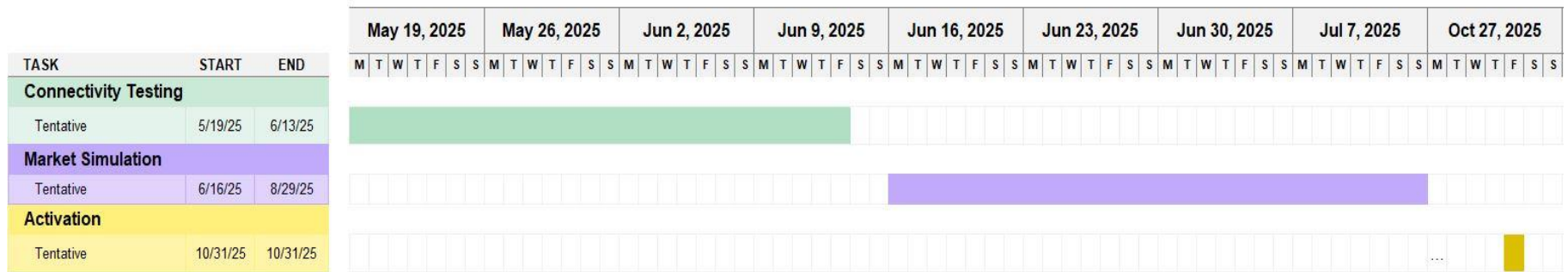
Unstructured Market Simulation:

- August 2025

Activation:

- Oct 2025

Note: Project Management is confirming the relevant dates for two phases. The next presentation to include updates activation and Market Simulation dates.



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, May 15, 2025 @ 2:00 PM PT
- Release User Group (RUG):
 - Tuesday, May 13, 2025 @ 10:00 AM PT
- CRR Customer Partnership Group (CPG):
 - Thursday, May 15, 2025 @ 10:00 AM PT (tentative)
- Technical User Group (TUG):
 - Tuesday, May 6, 2025 @ 10:00AM PT
- DAME, EDAM, EDAM CAISO BAA PR:
 - Thursdays 1PM PT, starting April 24th (registered participants only)

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