



California ISO

# Market Simulation Forum

February 27, 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
  - 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: 02/27/25

- Slide 9 & 10: Updated environment availability
- Slide 11: Updated Market Sim project overview slide
- Slide 12: Updated known issues list
- Slide 16: Updated Unstructured MSIM start date
- Slide 20: Added Black Hills related MSIM dates

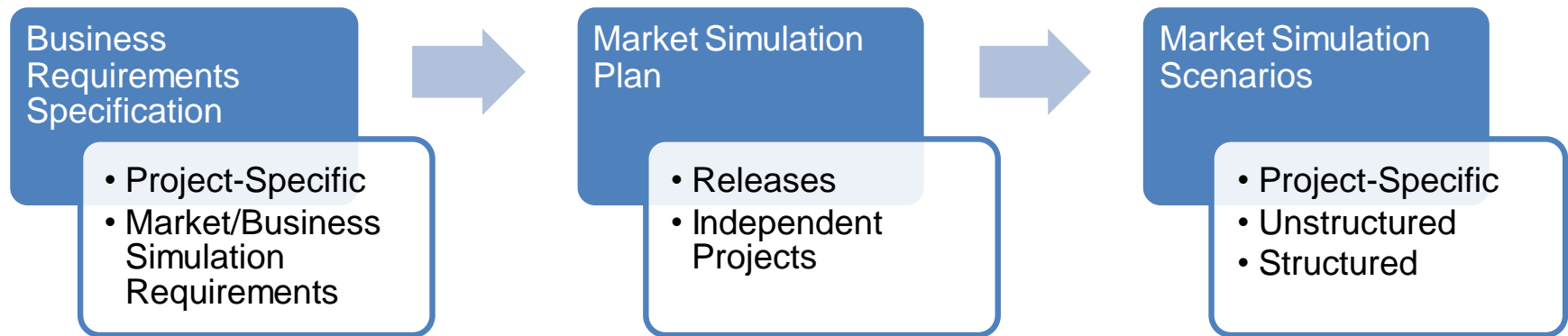
# Market Simulation Overview

- 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 04/14/25	API shall be updated to green on 4/14/25 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
<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	04/30/25
<a href="#">Highest Emergency Rating (HER)</a>	<b>Unstructured MSIM:</b> 2/24/25 – 3/07/25	No settlements impacts	03/20/25
<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>	<b>Unstructured MSIM:</b> Shapefiles only, 3/13/25 – 3/19/25	No settlements impacts	4/9/25
<a href="#">Transmission Exchange Agreement (TEA)</a>	<b>Unstructured MSIM (WAPA):</b> 2/24/25 – 3/21/25 (new Aggregate Tie) <b>Unstructured MSIM (TEA BRS):</b> July 2025	N/A	Full Activation: Oct 2025
<a href="#">DAME / EDAM / WEIM</a>	See slide 20.	N/A	See slide 20.
<a href="#">Application Framework</a>	<b>Unstructured Market Sim (CMRI, OASIS):</b> 02/03/25 – 02/17/25	N/A	3/14/25 (tentative)
<a href="#">SPTO</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>	Issues with webLineR provisioning. Internal team aware and working on having a fix in by 03/07.
<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:

- 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

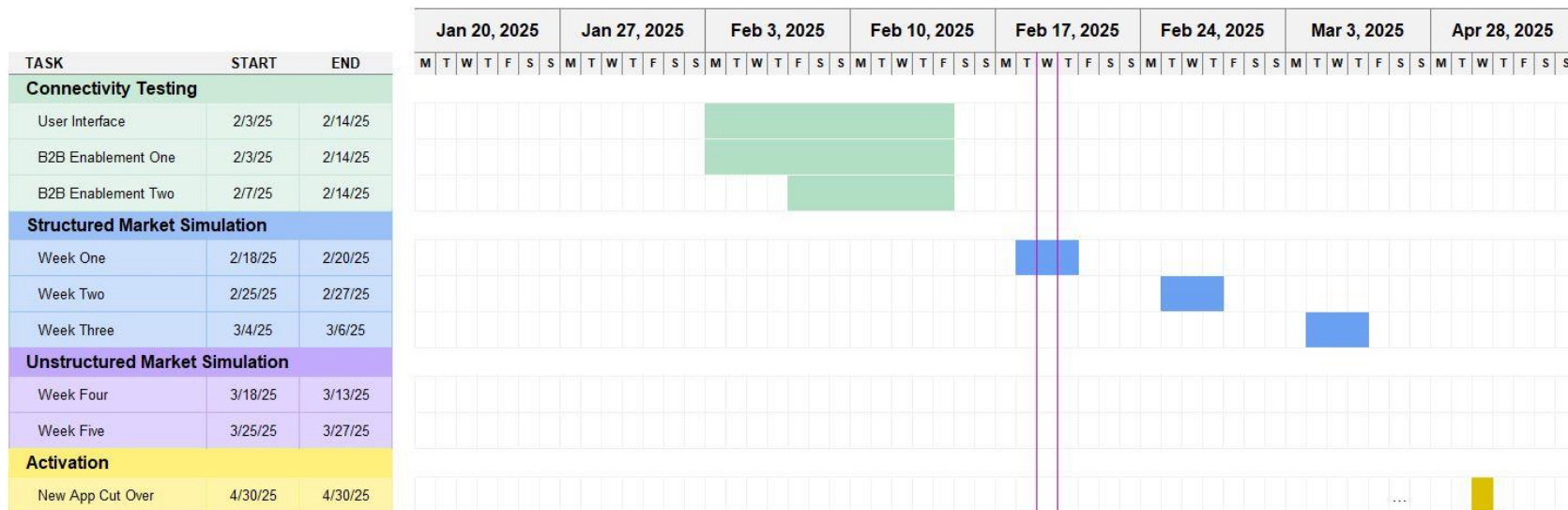
### UI reporting issues:

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
<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	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: <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> 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.  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.	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

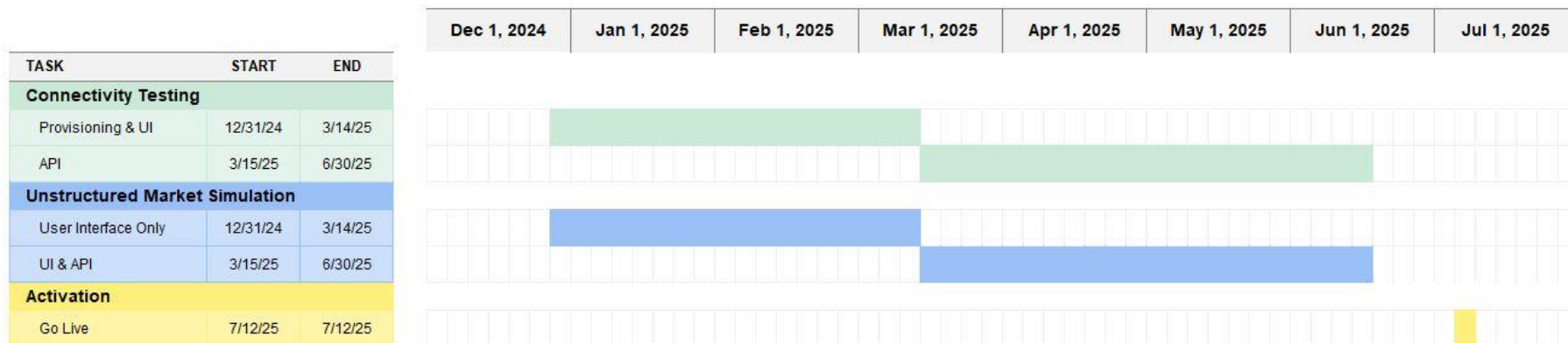
## Market Simulation (webLineR Only):

- 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.





# HR2C RIMS

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

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): 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

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

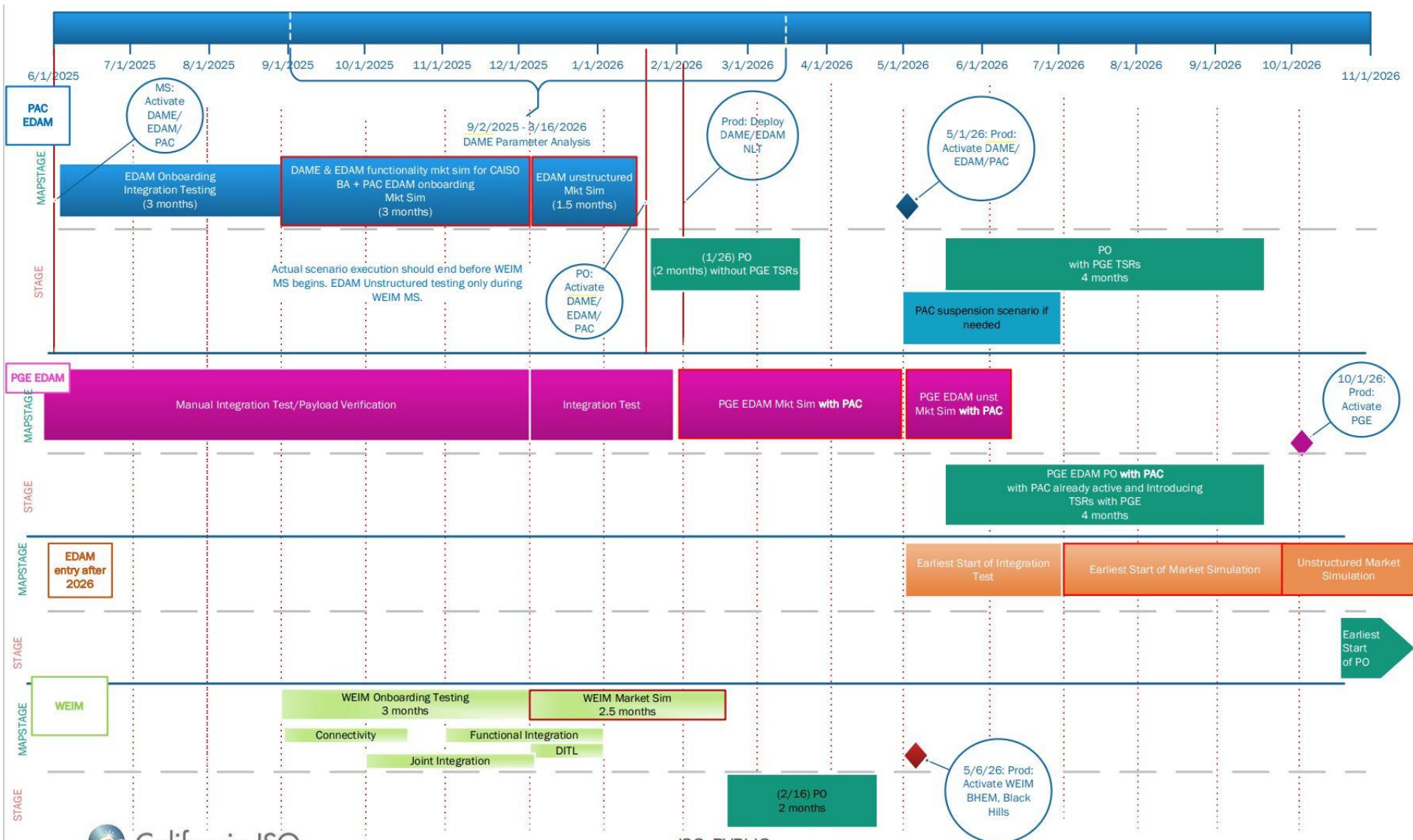
			Feb 17, 2025							Feb 24, 2025							Mar 3, 2025							Mar 10, 2025							Mar 17, 2025							Mar 24, 2025						
TASK			M T W T F S S							M T W T F S S							M T W T F S S							M T W T F S S							M T W T F S S							M T W T F S S						
<b>Unstructured Market Simulation</b>																																												
WAPA Only	2/24/25	3/14/25																																										
<b>Activation</b>																																												
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	NA	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	NA	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	NA	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.

# 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

## Activation:

- **OASIS:** 3/12/25
- **CMRI:** 3/18/25

			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	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 (SPTO)

## Connectivity Testing:

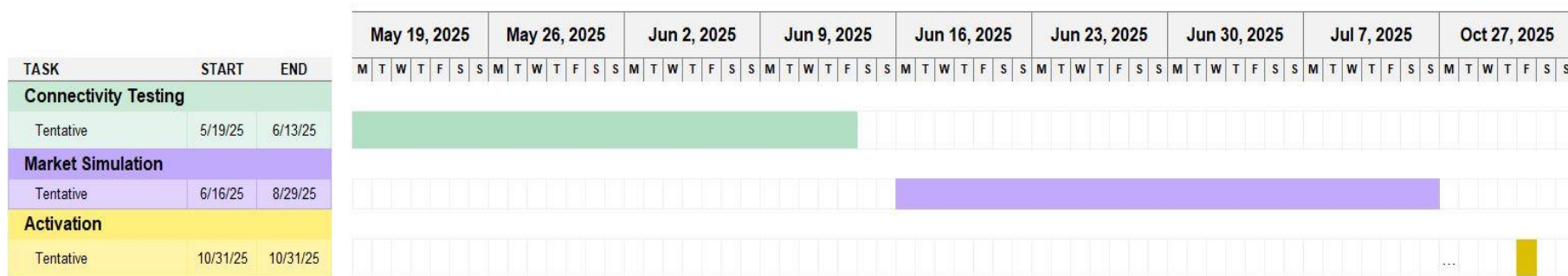
- May – June 2025

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



# Upcoming Meetings

- Market Simulation Forum:
  - Thursday, March 13, 2025 @ 2:00 PM PT
- Release User Group (RUG):
  - Tuesday, March 4, 2025 @ 10:00 AM PT
- CRR Customer Partnership Group (CPG):
  - Thursday, March 20, 2025 @ 3:00 PM PT
- CRR Market Simulation Meeting:
  - Tuesday, March 4, 2025 @ 1:00PM PT

# 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