



Market Simulation Forum

December 19, 2024

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ISO PUBLIC

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Overview

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 - FERC881 Track 2
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 - Highest Emergency Rating (HER)
 - Enable Non-Generating Resources to Participate in Inter-SC Trade
 - Hybrid Resources Phase 2C (HR2C) RIMS
 - Transmission Exchange Agreement (TEA)
- Next Steps

Summary Of Changes: 12/19/24

- Deleted TSMSP2/3 slides as completed Market Simulation testing
- Updated Market Simulation Forum Calendar
- Updated CRR System Upgrade Market Simulation Meeting Schedule
- Updated CRR System Upgrade dates for Connectivity Testing, Market Simulation, and Production
- Updated Highest Emergency Rating (HER) dates for Unstructured Market Simulation, and Production
- Added new slide for FERC881 Market Simulation

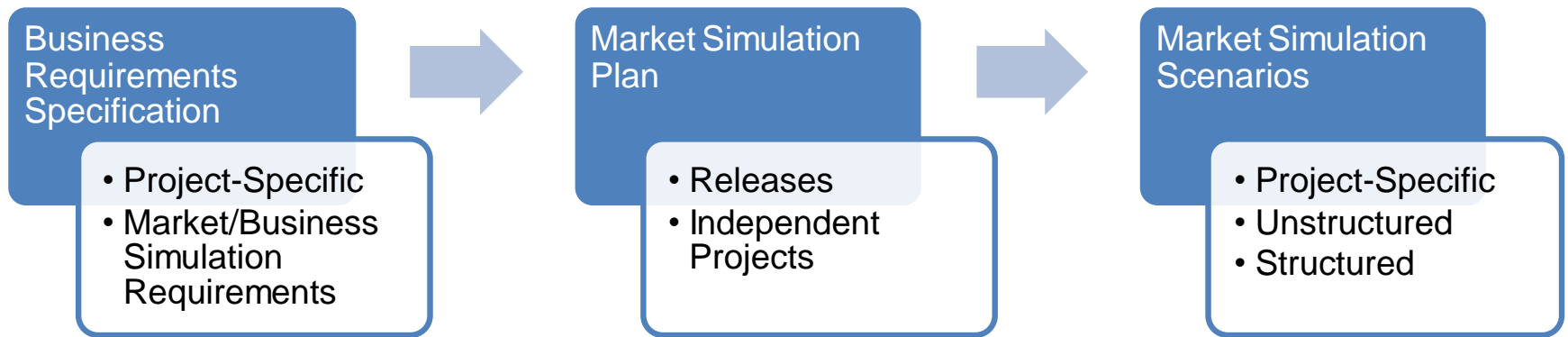
Market Simulation Overview

- 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
December	2	3	4	5	6
	9	10	11	12	13
	16	17	18	19	20
	23	24	25	26	27
	30	31			
January			1	2	3
	6	7	8	9	10
	13	14	15	16	17
	20	21	22	23	24
	27	28	29	30	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			
ALFS	Not Available		
BAAOP			
BSAP			
CIRA			
CMRI			
CRR		Not Available	
New CRR	ETA 01/21/25	API Subset 01/21/25	
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	ETA 12/31/24	ETA 02/10/25	

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	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	TEA		
DRRS			
ECIC			
FDR			
MF			
OASIS			
RCBSAP	20.2	18	
SIBR			
TR			

AHEAD OF PRODUCTION
SYNCED WITH PRODUCTION
BEHIND PRODUCTION

Market Simulation Activities

Initiative	Market Simulation	Comments	Production
Congestion Revenue Rights (CRR) System Upgrade	Connectivity Testing: <ul style="list-style-type: none"> 12/16/24 – 01/03/25 Market Simulation: <ul style="list-style-type: none"> Structured: 01/06/25 – 01/24/25 Unstructured: 01/27/25 – 02/07/25 	N/A	03/25/25 – 03/27/25
Highest Emergency Rating (HER)	Unstructured MSIM: 01/06/25 – 01/20/25	No settlements impacts	01/21/25
FERC881 Track 2	Connectivity Testing: <ul style="list-style-type: none"> UI: 12/31/24 – 02/14/25 API: 02/10/25 – 02/14/25 Market Simulation: <ul style="list-style-type: none"> Structured: 02/17/25 – 05/30/25 	N/A	Track 2: June 2025
Hybrid Resources Phase 2C (HR2C) - RIMS	Unstructured MSIM: Shapefiles only, Early 2025	No settlements impacts	Feb 2025
Transmission Exchange Agreement (TEA)	Q2 2025	N/A	2025
Enable Non-Generating Resources to Participate in Inter-SC Trade	TBD	N/A	TBD

CRR System Upgrade

- ✓ **Registration:** by 9/30/24
- **CRR Customer Partnership Group (CPG):** Next CPG Thursday, January 23, 2025
- **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): 01/21/24 – 01/23/25
- B2B API (First): 01/21/25 – 01/23/25
- B2B API (Second): 01/24/25 – 01/31/25

Structured Market Simulation:

- Week 1: 02/04/25 – 02/06/25
- Week 2: 02/11/25 – 02/13/25
- Week 3: 02/18/25 – 02/20/25

Unstructured Market Simulation:

- Week 4: 02/25/25 – 02/27/25
- Week 5: 03/04/25 – 03/06/25

Production New Application Cutover: 03/25/25 – 03/27/25

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

Jan-20 Jan-27 Feb-03 Feb-10 Feb-17 Feb-24 Mar-03 Mar-10 Mar-17 Mar-24 Mar-31

Con
- UI

Connectivity -
API

Market Sim - Structured

Market Sim - Unstructured

Cut
Over

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 01/06/25 – 01/20/25
- Production 01/21/25

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	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"> • 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) 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:

- User Interface: 12/31/24 – 02/14/25
- API: 02/10/25 – 02/14/25

Market Simulation:

- Structured: 02/17/25 – 05/30/25

Production: June 2025



HR2C RIMS

- **Register by December 31, 2024**
- Early 2025: Unstructured Shapefiles Market Simulation
- Production Feb. 2025

ID#	Guidance on Market Participant Impacts	Source System	Sink System	Reason for Potential Scenario
MKT-004	<p>Unstructured Market Simulation</p> <p>Market Participants must have the capability to input Site information data into web form submission.</p> <p>Note: BU requested that Market Participants have the opportunity to practice filling out and submitting the form prior to production.</p>	N/A	RIMS	<i>Unstructured Market Sim, New Data type</i>
MKT – 005	<p>Unstructured Market Simulation</p> <p><i>Market Participant must have the capability to upload Topo Map, Sharing Agreement, Shapefile, and provide Site Info via web form.</i></p>	N/A	RIMS	<i>Unstructured Market Sim, New Data type</i>
MKT – 006	<p>Unstructured Market Simulation</p> <p><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></p>	N/A	RIMS	<i>Unstructured Market Sim, New Data type</i>
MKT – 007	<p>Unstructured Market Simulation</p> <p><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></p>	N/A	RIMS	<i>Unstructured Market Sim, New Data type</i>
MKT – 008	<p>Unstructured Market Simulation</p> <p><i>In the event Market Participant's upload fails validation, Market Participant must receive notification of the error.</i></p>	N/A	RIMS	<i>Unstructured Market Sim, New Data type</i>

TEA

- **Register by December 31, 2024**
- Q2 2025 Market Simulation
- MF, SIBR, ETCC, ITS, Settlements, CMRI, OASIS
- Production 2025

ID#	Guidance on Market Participant Impacts	Source System	Sink System	Reason for Potential Scenario
MKT-001	Owner of Transmission Owner Rights must have the capability to send sale information to CAISO. Note: See BRQ003 for more information.	OASIS OATI	Internal ISO System	Interface changes, New system process
MKT-002	Entities with pre-registered CRNs must have the capability to purchase Transmission Owner Rights. Note: See BRQ002 for more information.	N/A	MF	Interface changes, New system process, Rule Impacts
MKT-003	Entities with Parent CRN and have active transacted purchases with Sub CRNs will have access to both Parent and Sub CRN Report data in CMRI.	CMRI	User Client, System	Interface changes, Report Changes, New system process, Rule Impacts

Enable Non-Generating Resources to Participate in Inter-SC Trade

Information	Details
Source	2024 Annual Policy Initiatives Roadmap Process
Category	Storage
Submission	Enable non-generating resources to participate in inter-SC trade
Summary	Allow non-generating resources to participate in inter-SC trade and offer physical energy product in order to continue effective integration of higher capacities of energy storage and meet RA and GHG compliance goals.
Description	In the current market design, standalone battery storage projects are not available to be selected in the "location" dropdown list for transactive physicals in IST. To continue effective integration of higher capacities of energy storage and meet RA and GHG compliance goals, the ISO should allow NGRs to participate in inter-SC trade and offer physical energy product. Enabling battery storage to participate in physical IST would increase market efficiency and reduce uncertainty in the preschedule window, and would allow battery storage to offer supplemental capacity or replacement energy through IST.
Presentation	May 15, 2024
System Impacts	Scheduling Infrastructure & Business Rules (SIBR)

Milestone Type	Milestone Name	Dates	Status
BPM	Publish PRR: Market Instruments		
SIBR Release Notes	Publish SIBR Release Notes		
SIBR Rules	Publish Inter-SC Trades Rules		
SIBR SC User Guide	Update to allow NGR for Physical Trades		
SIBR Inter-SC Trades (IST) Tutorial	Update to allow NGR for Physical Trades		
Market Simulation	Market Simulation		
Production	Activation		

**This effort is separate from the "Inter-SC Trades in Regional Markets" policy initiative*

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

Next Steps

- Next Market Simulation Forum:
 - Monday, January 6, 2025 @ 2:00 PM PT
- Next Release User Group:
 - Tuesday, January 7, 2025 @ 10:00 AM PT
- Next Customer Partnership Group:
 - Thursday, January 16, 2025
- Next CRR Market Simulation Meeting:
 - Tuesday, February 4, 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