Market Simulation

Trang Vo
Release Manager

September 30, 2024

Overview

- Market Simulation Communication
- Market Simulation MAP Stage Availability
- Market Simulation Activities
- Market Simulation Settlements
- Market Simulation Initiatives - Current
  - Settlements Fall 2024 Release
  - FERC 2222 – Distributed Curtailment Resources
  - User Interface (UI) Framework Upgrades
- Market Simulation Initiatives - Upcoming
  - Transmission Service & Market Scheduling Priorities Phase 2 Track 3 – Resale Scope (TSMSP2T3)*
  - Congestion Revenue Rights (CRR) System Upgrade
  - Highest Emergency Rating (HER)
  - Western Energy Imbalance (WEIM) Enhancements
  - Enable Non-Generating Resources to Participate in Inter-SC Trade
  - Modification of Maximum Import Bid Price Hourly Energy Shaping Factor
  - Transmission Exchange Agreement (TEA)
  - Hybrid Resources Phase 2C (HR2C) RIMS*
- Next Steps
- References

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Market Simulation Communication

	Monday	Tuesday	Wednesday	Thursday	Friday
September	✓ 2	✓ 3	✓ 4	✓ 5	✓ 6
	✓ 9	✓ 10	✓ 11	✓ 12	✓ 13
	✓ 16	✓ 17*	✓ 18	✓ 19*	✓ 20
	✓ 23	✓ 24*	✓ 25	26*	27
	30 **10AM**				
October		1*	2	3* **10AM**	4
	7	8*	9	10*	11
	14	15	16	17	18
	21	22	23	24	25
	28	29	30	31	

ISO Closure

Market Simulation Forum

*Settlements Trade Date

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Market Simulation MAP Stage Availability

- MAP Stage weekly maintenance window is Friday*

System	UI	API	Comments
ADS			
ALFS	NA	New API framework	
BAAOP	New UI framework		
BSAP	New UI framework		
CIRA		New API framework	*RAAIM: Available for submission of Oct 2024 monthly data by Sep 30, 2024
CMRI			
CRR			
DRRS			
ECIC	NA	New API framework	
FDR	NA	New API framework	
MF			
OASIS			
OMS			
PLC		NA	
RCBSAP	New UI framework		
RIMS		NA	
SIBR	New UI framework		
MRIS			
TR	New UI framework	NA	
webWheel		NA	

AVAILABLE

MAINTENANCE

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

Market Simulation Activities

Initiative	Market Simulation	Comments	Production
Settlements Fall 2024 Release	9/16 – 10/14: Unstructured By 9/30: Submit October Monthly via CIRA for RAAIM for 10/1 & 10/3 Mini-Monthly	Leverage settlements TDs	11/01/24
FERC 2222	9/16 – 10/11: Market Simulation Window 9/16 – 9/27: Connectivity 10/01 – 10/11: Unstructured Market Simulation	No settlements impacts	11/01/24
Framework Upgrades	Unstructured: UI: BAAOP, SIBR, BSAP, RCBSAP, TR available API: ALFS/FDR, CIRA, ECIC	No settlements impacts See UI known issues	Various: October Additional UIs/APIs may go beyond October
TSMSP2T3 – Resale Scope	10/21 – 11/01	TSMSP2T1: Settlements fix will be in sample statements 9/16-10/14 (Production will be retroactive to 6/1/24) TSMSP2T3: Settlements will be included in the 10/7-10/14 statements	11/07/24
HER	November: Unstructured	No settlements impacts	Q4 2024 - 2025
CRR System Upgrade	11/4 – 11/8: Connectivity 11/11: Start Market Simulation - 3 weeks Structured - 2 weeks Unstructured		01/27/25 to 01/30/25; March 2025 is first month with processes fully on the new system
WEIM Enhancements - WEIM Commitment Override – BAAOP UI	October: Unstructured	No settlements impacts	Q4 2024
HR2C RIMS	Early 2025: Unstructured (Shapefiles)	No settlements impacts	Feb 2025
TEA	February 2025: Unstructured		2025

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Market Simulation Settlements Calendar

Calendar Day	Day	CMRI T+1B	Submit Meter Data by T+2B 10:00 for Initial	Publish Initial Statement T+5B	Submit Meter Data by T+5B 18:00 for Recalc	Publish Recalc Statement T+8B	Publish Market Invoice
			T+9B	T+9B	T+70B	T+70B	
17-Sep-24	Tuesday						
18-Sep-24	Wednesday	17-Sep					
19-Sep-24	Thursday		17-Sep				
20-Sep-24	Friday	19-Sep					
23-Sep-24	Monday		19-Sep				
24-Sep-24	Tuesday			17-Sep	17-Sep		
25-Sep-24	Wednesday	24-Sep					
26-Sep-24	Thursday		24-Sep	19-Sep	19-Sep		
27-Sep-24	Friday	26-Sep		Monthly Initial 17-Sep - 19-Sep		17-Sep (9/30)	Daily Initial 17-Sep; Daily Initial 19-Sep; Monthly Initial 17-Sep - 19-Sep
30-Sep-24	Monday		26-Sep				
01-Oct-24	Tuesday			24-Sep	24-Sep	19-Sep	
02-Oct-24	Wednesday	1-Oct				Monthly Recalc 17-Sep - 19-Sep	Daily Recalc 17-Sep; Daily Recalc 19-Sep; Monthly Recalc 17-Sep - 19-Sep
03-Oct-24	Thursday		1-Oct	26-Sep	26-Sep		
04-Oct-24	Friday	3-Oct		Monthly Initial 24-Sep - 26-Sep		24-Sep	Daily Initial 24-Sep; Daily Initial 26-Sep; Monthly Initial 24-Sep - 26-Sep
07-Oct-24	Monday		3-Oct				
08-Oct-24	Tuesday			1-Oct	1-Oct	26-Sep	
09-Oct-24	Wednesday	8-Oct				Monthly Recalc 24-Sep - 26-Sep	Daily Recalc 24-Sep; Daily Recalc 26-Sep; Monthly Recalc 24-Sep - 26-Sep
10-Oct-24	Thursday		8-Oct	3-Oct	3-Oct		
11-Oct-24	Friday	10-Oct		Monthly Initial 01-Oct - 03-Oct *RAAIM		1-Oct	Daily Initial 01-Oct; Daily Initial 03-Oct; Monthly Initial 01-Oct - 03-Oct;
14-Oct-24	Monday		10-Oct				
15-Oct-24	Tuesday			8-Oct	8-Oct	3-Oct	
16-Oct-24	Wednesday					Monthly Recalc 01-Oct - 03-Oct	Daily Recalc 01-Oct; Daily Recalc 03-Oct; Monthly Recalc 01-Oct - 03-Oct;
17-Oct-24	Thursday			10-Oct	10-Oct		
18-Oct-24	Friday			Monthly Initial 08-Oct - 10-Oct		8-Oct	Daily Initial 08-Oct; Daily Initial 10-Oct; Monthly Initial 08-Oct - 10-Oct;

Fall 2024 Settlements Release

✓ Active in MAPSTAGE as of TD 8/1/24

• 9/16/24 – 10/14/24

• Unstructured – Sample Settlements Statements for Tuesday & Thursday TDs 9/17/24 thru 10/10/24

• Scope as of 9/4/24 Communication:

Fall 2024 Settlements Release Component Summary	
CHANGE SUMMARY	**IMPACTS**
FERC 2222 • *FERC Order 2222 seeks to remove barriers for DCR (Distributed Curtailment Resources) participation in RTO/ISO markets. The CAISO will amend it's existing DER (Distributed Energy Resource) policy to accommodate FERC 2222, which will include reducing the maximum capacity requirement and introducing a new DERA resource type with underlying DCR.*	*No PRR required* • There are no configuration/formulation changes, hence no tech doc or PRR/BPM posting. For information only. • Effective Start Date: 11/01/2024
COTP Loss • *Defect: Apply losses for the California Oregon Transmission Project (COTP) scheduled into the California Independent System Operator Corporation (CAISO) Balancing Authority Area using COTP capacity made available by Pacific Gas and Electric Company (PG&E) and the Transmission Agency of Northern California (TANC) consistent with the CAISO Tariff. This is an enhancement to implement an amended LOA among TANC, PGAE, WAPA. Instead of using average Day-Ahead Nodal prices for all nodes that includes the intertie (TRCYCOTPISO), a five-year rolling average cost will be used as as alternative for comparison with an hourly MEAA – another agreement - price. The MEAA price is at the intertie TRCYPGAE and Apnode WAPAMEEA3_ON_ASR-APND.*	*PRR 1583* • For those with schedules tagged at the intertie TRCYCOTPISO, the CAISO shall accumulate daily each scheduling coordinator's portion of COTP losses on an hourly basis and invoice each scheduling coordinator per payment calendar. • Effective Start Date: 11/01/2024
RC Config Change • *Defect: Issue with multiple BAA for Minimum RC Charge Flag. BA_RC_SVCS_NLOAD_TOP_MTH_EXMPT_FLAG has reference date "S" and needs to be updated to "T" to correctly be included in RC Settlement runs.*	*No PRR required* • There are no configuration/formulation changes, hence no PRR/BPM posting. Updates is to reflect CAISO internal processing to ensure data is captured correctly. • Effective Start Date: 11/01/2024
RAAIM LESR change • *Defect: Revise the Generic Availability and Flexible Obligation calculations for Limited Energy Storage Resources (LESR) RA resources. Consistent with how generic obligation award is computed only for positive capacity, the generic availability will recognize only bids/availability for the capacity above zero. Conversely, since flexible obligation award allows for the full range – from negative Pmin to positive Pmax – the flexible obligation assessment shall recognize the negative capacity values, particularly for NGRs which can operate in the negative range.*	*PRR 1584* • This will directly impact non-generating resources (NGR) and LESR generic availability calculation and flexible obligation assessment. More likely, as a result of these resettlement, the other resources (non-NGRs, traditional generators and supply resources) may have more or less adjustments in the incentives they settled previously. The generic issue only occurs when the NGR resources has outage on its positive capacity. The flexible issue more likely will be a charge to NGRs for those with penalties, a slight uptick in incentives if they were previously getting incentives, and a likely net effect to non-NGRs to be an increase incentives. • Effective Start Date: 3/1/2023. This is retrospective going as far back at T+21M.

Fall 2024 Settlements Release (continued)

✓ **Active in MAPSTAGE as of TD 8/1/24**

• 9/16/24 – 10/14/24

• Unstructured – Sample Settlements Statements for Tuesday & Thursday TDs 9/17/24 thru 10/10/24

• Scope as of 9/4/24 Communication:

Fall 2024 Settlements Release Component Summary	
CHANGE SUMMARY	**IMPACTS**
RMR • *Defect: Fix a typo in BD with impact to CC 6470 design template. Typo correction will allow an RMR specific daily amount to be consumed by 7020 correctly.*	***No PRR required*** • There are no configuration/formulation changes, hence no PRR/BPM posting. Update is for typo error clean-up only. • Effective Start Date: 11/1/2024.
BD Name Alias Change • *Defect: Hierarchy Charge Names with Discrepant BILL_DETERMINANT_NAME & BILL_DETERMINANT_ALIAS Values. The BILL_DETERMINANT and ALIAS columns should be exact matches except that the enumeration in the BILL_DETERMINANT column should have an '@' sign in the name. The ALIAS enumeration will have an '_' (underscore) in the same position. As long as we do not plan to recalc the BD for any trade dates in the past that have calculated using the previous spelling in the enumeration column we can make the change prospective without causing calculation errors going forward.*	***No PRR required*** • There are no configuration/formulation changes, hence no PRR/BPM posting. No financial impact because the impacted BDs (some PTB BDs) were never used. • Effective Start Date: 11/1/2024.
T vs. S: • *Defect: Some Bill Determinants need to be updated from reference date "S" to "T" to align with best business practices. During review there were three bill determinants that had a different reference date than expected. While no settlements issues have been reported, to align the bill determinants with best practices, they will be updated prospectively. The following are the bill determinants impacted. RSRC_DAILY_APPLY_WHSL_CHG_FLAG, RSRC_DAILY_NGR_VER_FLAG, BA_5M_RSRC_TIE_DEV_EXEMPT_FLAG.*	***No PRR required*** • There are no configuration/formulation changes, hence no PRR/BPM posting. Updates is to reflect CAISO internal processing to ensure data is captured correctly. • Effective Start Date: 11/1/2024.
TSMSP2: • *When updates (with a 6/1/2024 Effective Date) associated with the TSMSP2 project were released to Production with the Summer 2024 Release a defect discovered that entities with ATC Reservations are seeing a doubling of the export quantities associated with that intertie. This occurred because the PriorityWheelThruPosition payload (which provides the ATC PWT Reservation Quantity derived in WebWheel) provides the CONTRACTRIGHT_MRID attribute and the DReAMS and MSDC team had believed this to be a renaming of the CONTRACT_REF_ID which we were expecting in existing configurations. This is causing conflicts with existing business drivers and leads to inaccurate calculations.*	***PRR 1585*** • A change is required to sum over this conflicting attribute in the configuration so that it not cause conflicts. Its purpose is informational and summing over it will not impact calculations. • Effective Start Date: 6/1/2024.

Draft of 2024 Fall Settlements Release Milestones

Release Milestones:

- ✓ *1st draft config output file + release component summary posted:* **8/13/24**

- ✓ *PRR/BPM posting:* **8/27/24**

- ✓ **2nd draft config output file + revised release component summary posted: 9/4/24**

- Market sim/sample statement window: **9/16 – 10/14**
    - Active in MAPSTAGE as of TD 8/1/24
    - Unstructured – Sample Settlements Statements for Tuesday & Thursday TDs 9/17/24 thru 10/10/24
    - First Sample Settlement TD is 9/17/24, to publish 9/24 for Daily Initial

- Pre-prod configuration output file + release artifact revisions targeting: **10/23**

- Anticipated prod activation effective trade date: **11/1**

- **The ISO presented more details about the Market Simulation for the RAAIM change in last week's Settlement User Group 9/25/24. Added to this Market Simulation presentation for reference.**

Revise Generic Availability and Flexible Obligation Calculations to resolve for RAAIM LESR issue

Mel Ciubal

Market Services, CAISO

9/25/2024

Resolution

- Update Settlements configuration to ensure:
  - Generic availability does not include capacity below zero.
  - Flexible obligation outage thresholds and outage availability uses the full range capacity from Pmin (even if negative value) to Pmax of any resource.

- Formulation configuration only, no primary input change

- Effective Date: 3/1/2023 (retro to T+21M)

Objectives

- Generic awards rely on the Net Qualifying Capacity, NQC, which do not include capacity below zero. So, for generic RA and CPM assessment, restrict to capacity zero and above only.

- Flexible Obligation relies on effective flexible capacity (EFC), which includes full capacity range from Pmin to Pmax. So, for flexible RA and CPM assessment, and particularly for resources which can operate at negative Pmin, include those negative values.

- System calculation needs to follow general principles on the awards of Generic and Flexible RA. The fixes needs to be included in the BPM for Resource Adequacy Assessment Incentive Mechanism (RAAIM) RAAIM PC.

MAPSTAGE Market Simulation for RAAIM LESR fix

- Trade Dates: Oct 1 and Oct 3, mini-monthly

- CIRA UI open for CISO BAA market participants to submit for Oct 2024 month data

  (Submit by COB Sep 30, earlier the better):

  1. Supply plan from supplier Scheduling Coordinator

  2. RA plan from Load Serving Entity (LSE)

- SIBR bids

  Please submit applicable RA availability bids, in DA and/or RT.

- Outages (optional). For LESRs could submit upper operating limit to be at zero, and keep lower operating limit below zero. (None for Oct 1, restrict UOL for Oct 3)

Sample (please use your usual RA plans and bid submissions)

- Resource A (an LESR): Pmin is negative. Pmax is positive, say Pmin = -10 and Pmax = 10

- Resource B (traditional generator): Pmin is 0 or higher. say Pmin = 10 Pmax = 75

- Supply and RA plans submitted
  - Res A: 20 for flex, 10 gen
  - Res B: 50 for flex, 25 for gen

- SIBR bid availability in DA and/or RT as applicable

    Res A: 20 (covering Up 10, Down -10)

    Res B: 75

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Observe

Outage (optional), for LESR restricts upper operating limit to zero.

> Res A: UOL = 0 (unavailable to supply)
>
> Res B: any within its operating range

Expected results:

a) generic availability does not include the negative capacity range

> Res A: 10   Res B: 25

b) Flexible obligation includes the full range

> Res A: 20   Res B: 50

Additional Notes

All these are prior to succeeding calculations in RAAIM,

For the LESR Res A:

Due to Flex priority over generic obligation, only flex will be satisfied for Res A.

Also, if outage is recognized/approved, the original obligation of 10 generic will be zeroed out (due to outage exemption). And the flex obligation of 20 will be cut to 10 (since it cannot operate on the positive range).

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FERC 2222

✓ Register by Friday, 9/13/24

• 9/16 – 10/11: Market Simulation Window

• 9/16 – 9/27: Connectivity

– MF, SIBR, MRI-S ready

• 10/1 – 10/11: Unstructured Market Simulation

• FERC 2222 Impacted Systems: MF, SIBR, MRI-S, RIMS

• BRS response matrix published

ID#	Guidance on Market Participant Impacts	Source System	Sink System	Reason for Potential Scenario
FERC2222 -MKTSIM- 001	Unstructured Testing. SIBR, MFRD, MRI-S enhancements will be made available if a market participant wants to test the HDERA resource type. Unstructured testing requires participant has at least one HDERA and one DERA resource set up in Master File for: • MFRD web service data retrieval • SIBR NBT process (HDERA only), GDF submission with bids • MRI-S meter and (for HDERA only) monitor measurement data submission	SC	MFRD MRI-S Settlements SIBR	• Interface Changes • New/Modified Model Data • New system process

FERC 2222

Unstructured guided scenario	
Description	Verify HDERA resources in CAISO market
ISO Actions	ISO will provision HDERA resources in CAISO markets
WEIM Market Participant Actions	• Submit HDERA resources GRDT for CAISO Masterfile • Verify resource availability in SIBR NBT process and GDF submissions with bids. • Verify MRIS meter and monitor measurement data submission for the resources. • Verify Settlements results for the resources
ISO Market Participant Actions	• Submit HDERA resources GRDT for CAISO Masterfile • Verify resource availability in SIBR NBT process and GDF submissions with bids. • Verify MRIS meter and monitor measurement data submission for the resources. • Verify Settlements results for the resources
Expected Outcome	Resources are available/visible in CAISO systems.
Anticipated Settlement Outcome	N/A
Expected Settlement Outcome	N/A

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Framework Upgrades

- UI/API framework upgrades for multiple systems

- No application functionality changes

- No impact to user access

- Will be made available in MAP-Stage prior to Production cutovers where applicable

Interface	MAP-Stage	Production
UI: BAAOP	✓ July 2024	Oct 7-18, 2024
UI: BSAP	✓ August 2024	Oct 7-18, 2024
UI: RCBSAP	✓ August 2024	Oct 7-18, 2024
UI: SIBR	✓ August 2024	Oct 7-18, 2024
UI: TR	✓	Q4 2024
UI: HANA	NA	Oct 7-18, 2024
UI: HANA STUDY	NA	Oct 7-18, 2024
API: ALFS/FDR	✓	Q4 2024
API: CIRA	✓	Q4 2024
API: ECIC	✓	Q4 2024
Other UIs & APIs	Various	Various

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UI Framework Upgrades

- Known Issues – UIs only
  - SIBR
    - Create Bid Product Type NULL – *Fixed 9/24*
    - Upload bids/trades function not working – *Fixed 9/24*
    - Loading Screen Speed Slow
    - Dynamic Limit Resource not populating for SC

  - BSAP
    - Submit Base Schedule Button Not Available
      - Workaround: right-click to submit

TSMSP2T3

- **Register by Friday, 9/27/24**
- 10/21 – 11/01: Market Simulation Window
- MF, OASIS, webWheel, SIBR, Settlements, Market
- *BRS revision target by week of 9/30/24*
- *Draft* Market/Business Simulation Business Requirements:

Guidance on Market Participant Impacts	Source System	Sink System	Reason for Potential Scenario
Unstructured Market Sim: SCs must have the capability to submit, view, and download their resale information.	N/A	webWheel™	New Process, New Data
SCs performing resale must attest the information entered for resale	N/A	webWheel™	New Process, New Data
Unstructured Market Sim: Market Participants must have the capability to view the resale information.	webWheel™	OASIS	New Process, New Data
End-to-End Internal ISO operator must have the capability to update reason code for submitted resales and Forced Releases	N/A	webWheel™	New Process, New Data
Unstructured Market Sim: SCs must have the capability to submit, view, and download their Forced Release information.	N/A	webWheel™	New Process, New Data

HER

- **Register by September 30, 2024**
- November Unstructured Market Simulation

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: • 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*

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CRR System Upgrade

- **Register by 9/30/24**

- 11/4 – 11/8: Connectivity: ***UI & APIs available***

- 11/11: Start Market Simulation

  - 3 weeks Structured

  - 2 weeks Unstructured

- Access Provisioning: Upcoming; will announce when AIM is ready for access provisioning for MAPSTAGE

- Reminder: OASIS Tech Specs include the new & modified reports (https://developer.caiso.com)

2024 - Congestion Revenue Rights (CRR) Upgrade

Updated September 2024

- Functional UI Site Acceptance Testing and integration testing continues. UI test cases are 92% passed.
- **Connectivity Testing – 1 week after above testing, starting November 4th, just before Market SIM**
- **Training – 2 weeks before Market SIM in late October**
- **Market SIM - 3 weeks structured, then 2 weeks unstructured starting on November 11th**
- 2025 Annual Cycle, carried out in 2024, will occur on the current Production CRR application
- 1 week Cutover to new CRR application 1/27/25 to 1/30/25
- March is first month with processes fully on the new system
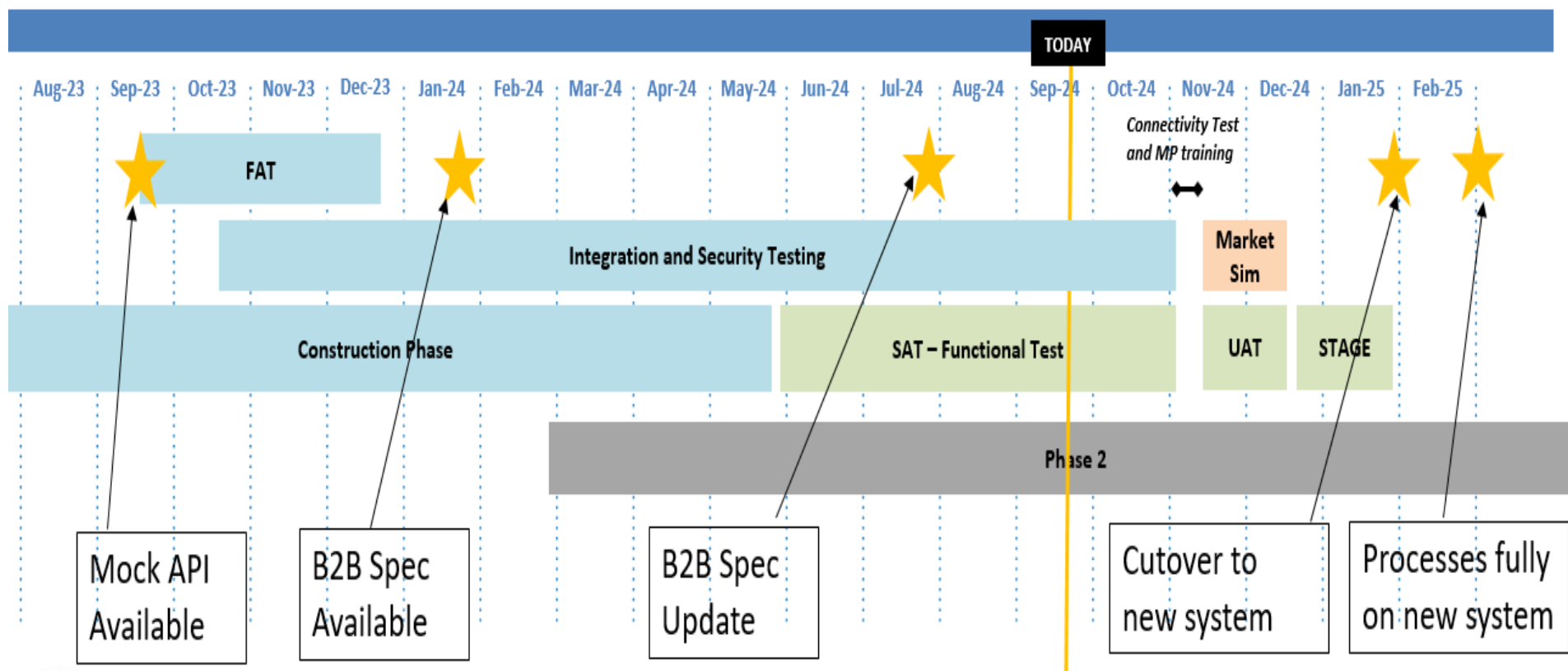
2024 - CRR System Upgrade – Calendar References

- Calendar layout of proposed CRR monthly and Annual Market Sim plan
- DRAFT - CRR 2024 & 2025 Allocation and Auction Markets Calendar

2024 - CRR System Upgrade – Calendar References

Market Sim 2024

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY

week 1
T-2w - Connectivity
Prior to Market Sim - Kickoff and Overview
• Market Sim Plan
• High level overview of new system
   ○ Manual Entry,
   ○ File
   ○ Upload, API
• Public/Private Downloads
• Messages
• Sorting and Filtering
• Documentation and Resources
• Contact Information
	Miscellaneous process
	1. UDC Load Migration Submissions and post (N-hour)
	2. LT Re-nomination
	3. Secondary Market
	4. TOR conversion submission
	
	Allocation Monthly Participants
	1. CEC Load Forecast Submissions
	2. Submit Historical Load
	3. Submit Forecast Load
	
	Allocation Annual Participants
	Submit AN Historical Load for 2024
	
	Public/Private messages
	Public/Private downloads (existing CRRs)
	Market Sim Webex
		Miscellaneous process
		1. UDC Load Migration Submissions Open
		2. Secondary Market
		3. TOR conversion approval
		
		Allocation Monthly Participants
		Post Monthly nomination cap (MEQ T1)
		
		Allocation Annual Participants
		Post Annual nomination cap (SEQ T1, SEQ LT, UB, SS T1, SS LT)
		
		Public/Private messages
		Market Sim Webex
			Miscellaneous process
			1. UDC Load Migration Submissions close and post
			2. Secondary Market
			
			Market Sim Webex 3-4pm PST
				Reserved for CRR team data processing and participant responses
				
				Environment Patching

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Market Sim 2024

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
week 2 **Reserved for CRR team data processing and participant responses** **CRR team setup for Monthly Markets**	**Allocation Monthly Participants** 1. Submit Nominations for Tier 1 Monthly Market 2. Windows Close on <u>Wednesday</u> 3. Download Nomination Cap data 4. Download Allocation Market MN V0 ETC and T1 model results(NDA user) **Auction Monthly Participants** 1. Submit Auction Portfolios Monthly Auction Market • Buy Bids, Sell Offers • Credit - provide $10mil to all MPs for testing 2. Windows Close on <u>Thursday</u> 3. Download Auction market model results(NDA user) Market Sim Webex	**Allocation Monthly Participants** 1. Download Allocation Market T1 Results 2. Submit Nominations for Tier 2 Monthly Market 3. Windows Close on <u>Thursday</u> 4. Download Nomination Cap T2 data 5. Download Allocation Market T2 model results(NDA user) Market Sim Webex	**Allocation Monthly Participants** Review results **Auction Monthly Participants** Review results Market Sim Webex 3-4pm PST	**Reserved for CRR team data processing and participant responses** **Environment Patching**

2024 - CRR System Upgrade – Calendar References

Market Sim 2024

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
week 3 **Reserved for CRR team data processing and participant responses** **CRR team setup for Annual markets**	**Allocation Annual Participants** 1. Submit Nominations for Tier 1 Annual Market 2. Windows Close on Wednesday 3. Download Nomination Cap data 4. Download Allocation Market AN V0 V1 and T1 model results(NDA user) 1. Submit Nominations for LT Annual Market 2. Windows Close on Wednesday 3. Download Nomination Cap data 4. Download Allocation Market ETC and LT model results(NDA user) **Auction Annual Participants** 1. Submit Auction Portfolios Annual Auction Market • Buy Bids, Sell Offers • Credit - provide $10mil to all MPs for testing 2. Re-submit for any processes or scenarios which had issues previously 3. Windows Close on Thursday 4. Download Auction market model results(NDA user) Market Sim Webex	**Allocation Annual Participants** 1. Submit Nominations for Tier 2 Annual Market 2. Windows Close on Thursday 3. Download Nomination Cap T2 data 4. Download Allocation Market T1 Results Market Participant Webex 3-4pm PST	**Allocation Annual Participants** Review results **Auction Annual Participants** Review results **Miscellaneous Annual process** 1. Submit Auction Portfolios for Participant requested scenarios Market Sim Webex	**Reserved for Q&A sessions, issue reporting, etc.** **Environment Patching**

2024 - CRR System Upgrade – Calendar References

Market Sim 2024

	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	
week 4		**Unstructured** • Re-submit for any process of scenarios for customer specific testing Market Sim Webex	**Unstructured**	**Unstructured** Market Sim Webex	**Reserved for CRR team data processing and participant responses** **Environment Patching**	
week 5		**Unstructured Cont.**	**Unstructured Cont.**	**Unstructured Cont.** Market Sim Webex	**Reserved for CRR team data processing and participant responses** **Environment Patching**	

2024 - CRR System Upgrade – Calendar References

November 2024

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
Annual (yellow)	**December** (blue) **January** (red) **Market Sim/Cutover** (black)			**1** 2025 Auction Open
4 Dec List of outages post by 5P Post January Source/Sink List 2025 Auction Closes 5P	**5** Dec Incr. Update by 5P Market Sim – Week 1	**6** Market Sim – Week 1	**7** Dec Tier 1 Opens 1A Dec Tier 1 Closes 5P Jan Hist Load Wind Opens 1A Jan Hist Load Wind Closes 5P Market Sim – Week 1	**8** Jan Frcst Load Wind Opens 1A Market Sim – Week 1
11 Dec Post Tier 1 Results by 5P Post 2025 Auction Results by 5P Jan Frcst Load Wind Closes 5P	**12** Dec Post Set-Aside Dec Tier 2 MEQ Market Sim – Week 2	**13** Dec Tier 2 Opens 1A Dec Tier 2 Closes 5P Market Sim – Week 2	**14** Market Sim – Week 2	**15** Dec Post Tier 2 Results by 5P Market Sim – Week 2
18	**19** Dec Auction Opens 1A Market Sim – Week 3	**20** Dec Auction Closes 5P Dec UDCs submit LM data by 12P Market Sim – Week 3	**21** Market Sim – Week 3	**22** Dec Auction results post by 5P Market Sim – Week 3
25 Jan Post CRR FNM by 5P Market Sim – Week 3	**26** Market Sim – Week 3	**27** Jan Post MEQ Market Sim – Week 3	**28** Holiday (Thanksgiving)	**29** Holiday (Thanksgiving)

2024 - CRR System Upgrade – Calendar References

December 2024

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
2 Post February Source/Sink List	**3** Market Sim – Week 4	**4** Market Sim – Week 4	**5** Market Sim – Week 4	**6** Jan List of outages post by 5P
9 Feb Hist Load Wind Opens 1A Feb Hist Load Wind Closes 5P	**10** Jan Incr. Update by 5P Feb Forecast Load Wind Open 1A Market Sim – Week 5	**11** Feb Forecast Load Wind Closes 5P Market Sim – Week 5	**12** Jan Tier 1 Opens 1A Jan Tier 1 Closes 5P Market Sim – Week 5	**13** Jan Post Tier 1 Results by 5P
16 Jan Post Set-Aside Jan Tier 2 MEQ	**17** Jan Tier 2 Opens 1A Jan Tier 2 Closes 5P	**18**	**19** Jan Post Tier 2 Results by 5P	**20** Jan UDCs submit LM data by 12P
23 Jan Auction Opens 1A	**24** Jan Auction Closes 5P	**25**	**26** Feb Post CRR FNM by 5P	**27** Jan Auction results post by 5P
30 Feb Post MEQ	**31**			

Legend:
- 🟥 January
- 🟦 February
- ⬛ Market Sim/Cutover

2024 - CRR System Upgrade – Calendar References

January 2025

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
■ February ■ March ■ Market Sim/Cutover		**1** Holiday (New Year's Day)	**2**	**3** Feb List of outages post by 5P
6 Post March Source/Sink List	**7** Feb Incr. Update by 5P	**8** Mar Hist Load Wind Opens 1A Mar Hist Load Wind Closes 5P (Entered in current system, will be migrated to new System)	**9** Feb Tier 1 Opens 1A Feb Tier 1 Closes 5P Mar Frcst Load Wind Opens 1A	**10** Mar Frcst Load Wind Closes 5P
13 Feb Post Tier 1 Results by 5P	**14** Feb Post Set-Aside Feb Tier 2 MEQ	**15** Feb Tier 2 Opens 1A Feb Tier 2 Closes 5P	**16**	**17** Feb UDCs submit LM data by 12P Feb Post Tier 2 Results by 5P
20 Holiday (Martin Luther King's B-Day)	**21**	**22** Feb Auction Opens 1A	**23** Feb Auction Closes 5P	**24**
27 Feb Auction results post by 5P	**28** Mar Post CRR FNM by 5P – on SFTP site Production Deployment –Phase 1 cutover	**29** Production Deployment –Phase 1 cutover	**30** Production Deployment –Phase 1 cutover	**31** Production Deployment – Phase 1 cutover Complete

2024 - CRR System Upgrade – Calendar References

February 2025

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
■ March ■ April				
3 **New System Online** **Mar Post MEQ** **Post April Source/Sink List**	**4**	**5** **Apr CEC Load Wind Opens 1A** **Apr CEC Load Wind Closes 5P**	**6** **Mar List of outages post by 5P** **Mar Incr. Update by 5P** **Apr Hist Load Wind Opens 1A** **Apr Hist Load Wind Closes 5P**	**7** **Mar Tier 1 Opens 1A** **Mar Tier 1 Closes 5P** **Apr Frcst Load Wind Opens 1A**
10 **Apr Frcst Load Wind Closes 5P**	**11** **Mar Post Tier 1 Results by 5P**	**12** **Mar Post Set-Aside** **Mar Tier 2 MEQ**	**13** **Mar Tier 2 Opens 1A** **Mar Tier 2 Closes 5P**	**14**
17 **Holiday (Presidents Day)**	**18** **Mar Post Tier 2 Results by 5P**	**19**	**20** **Mar UDCs submit LM data by 12P** **Mar Auction Opens 1A**	**21** **Mar Auction Closes 5P** **Apr Post CRR FNM by 5P**
24	**25** **Mar Auction results post by 5P**	**26** **Apr Post MEQ**	**27**	**28**

California ISO

WEIM Enhancements: WEIM Commitment Override – BAAOP UI

- **Register by September 30, 2024**
- October - Unstructured

ID#	Guidance on Market Participant Impacts	Source System	Sink System	Reason for Potential Scenario
MKT - 010	**Unstructured Market Sim – WEIM External Commitment Override** External WEIM BA Operators must have the capability within RTM - BAAOP to enter commitment overrides directly in the RTM Market UI. Note: See BRQ030.	N/A	*RTM – BAAOP*	Changes to UI

ID#	Business Feature	Req. Type	Potential Application(s) Impacted
FAB – BRQ03	*External WEIM Commitment Override* System (RTM) within BAAOP, must have the capability for external WEIM BA Operators to enter commitment overrides directly in the RTM Market UI. Implementation note: This would be similar functionality as CAISO BA Operations (Generation Dispatcher) having this ability. Implementation note: use the External BAA Operator role for BAAOP. Implementation note: Currently, external WEIM entities call the RTMO to request the commitment override and the RTMO enters the override into the RTM via BAAOP. The RTMOs do not have the authority to deny the request from the external WEIM entity. Implementation note: This requirement applies to any WEIM BAA with existing access to RTM. No new access provisioning needed in AIM, no updates to roles needed in AIM. Implementation note: UI updates only Impacted: BPM, UIs, Unstructured Market Sim	*Core*	*RTM - BAAOP*

Modification of Maximum Import Bid Price Hourly Energy Shaping Factor

Project Information	Details/Date
High Level Project Scope	Modify MIBP Energy Price Hourly Shaping Factor The new formula for shaping factor is based on the high-priced day SMEC only. Use high-priced day SMEC shape to adjust Electric Hub price of the trading day. This is a change from current one that using the SMEC of trade hour in trading day or the same hour of the closest prior day if trading day DAM is not run yet.

Milestone Type	Milestone Name	Dates	Status
Workshop	**Maximum Import Bid Price Workshop**	**May 28, 2024**	✓
BPM	**Market Instruments**	**Yes**	
Production	**Activation**	**November 2024**	

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

- The next Market Simulation Forum will be on Thursday, October 3, 2024 @ ***10:00 AM PT***

- Contact
    - Trang Vo @ tvo@caiso.com
    - MarketSim@caiso.com

References

- The following slides include information from previous presentations and/or for general reference

Market Simulation Support

- Submit questions to CIDI with 'Functional Environment' = "Market Simulation"

- marketsim@caiso.com

- Service Desk: (916) 351-2309

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

HR2C RIMS

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

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	*Unstructured Market Sim, New Data type*
MKT – 005	**Unstructured Market Simulation** *Market Participant must have the capability to upload Topo Map, Sharing Agreement, Shapefile, and provide Site Info via web form.* *Note: See BRQ150, BRQ285, BRQ144, BRQ300.*	N/A	RIMS	*Unstructured Market Sim, New Data type*
MKT – 006	**Unstructured Market Simulation** *Market Participant must have the capability to see on UI uploaded Topo Map, Sharing Agreement, Shapefile, and provide Site Info via web form.* *Note: See BRQ150, BRQ285, BRQ144, BRQ300.*	N/A	RIMS	*Unstructured Market Sim, New Data type*
MKT – 007	**Unstructured Market Simulation** *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.* *Note: BRQ145, BRQ275.*	N/A	RIMS	*Unstructured Market Sim, New Data type*
MKT – 008	**Unstructured Market Simulation** *In the event Market Participant's upload fails validation, Market Participant must receive notification of the error.* *Note: See BRQ350A, BRQ350B, BRQ205, BRQ335, BRQ325.*	N/A	RIMS	*Unstructured Market Sim, New Data type*

TEA

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

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

California ISO

TEA

- **Draft unstructured scenario**

Unstructured guided scenario	
Description	3rd party to purchase right and schedule in the market
ISO Actions	N/A
WEIM Market Participant Actions	Transmission owner right sale should be recorded with CAISO
ISO Market Participant Actions	Needs to establish contract reference numbers (CRN) va MF? Schedule the rights in SIBR Submit tags consistent with their schedule
Expected Outcome	Contract self-schedule will receive priority awards Receive scheduling priority in ITS Receive awards in settlements based on their contract usage Verify the results in CMRI WEIM entities can verify sale information on CMRI
Anticipated Settlement Outcome	Reversal of congestion occurring up to their contract schedule. Receive exemption from wheeling or transmission access charges
Expected Settlement Outcome	Under review

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