



# Market Simulation – Fall 2023

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# Recordings

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# Agenda

- Market Simulation Issue Management
- MAP Stage Availability
- Fall 2023 Market Simulation Initiatives & Timelines
- Fall 2023 Market Simulation Settlements Calendar
- Structured Scenario Registration Details
- Fall 2023 - System Interface Changes
- Initiatives
  - Maximum import capability enhancements
  - Energy storage enhancements Track 2
  - Washington WEIM greenhouse gas enhancements
  - WEIM resource sufficiency evaluation redesign phase 2
  - Hybrid Resources 2C – Metered Quantities
- Next Steps

# Market Simulation Issue Management

- Submit all issues to the CIDI case management system
- CIDI tickets must have “**Functional Environment**” = “**Market Simulation Fall 2023**” to be reviewed by ISO SMEs

# Market Simulation MAP Stage Availability

MAP Stage weekly maintenance window is Friday\*

System	UI	API	Comments
ADS			
ALFS	NA		
BAAOP			
BSAP			
CIRA			
CMRI			
CRR		NA	
DRRS			
MF			
OASIS			Less than 5 mins downtime between 14:00-15:00
OMS			
RCBSAP			
RIMS		NA	
SIBR			
MRIS			

AVAILABLE

MAINTENANCE

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

# Fall 2023 Market Simulation Initiatives & Timelines

<u>Fall 2022 Initiatives</u>	<u>Start Date</u>	<u>Start Date (Trade Date)</u>	<u>End Date</u>	<u>Structured Simulation Start (Trade Date)</u>
<b><u>Fall 2022 Market Simulation</u></b>	08/14	08/14	09/29	
Maximum import capability enhancements	08/14	08/14	09/29	08/17
Energy storage enhancements Track 2	09/18	09/18	09/29	09/19, 09/21
Washington WEIM greenhouse gas enhancements	09/07	09/07	09/29	N/A
WEIM resource sufficiency evaluation redesign phase 2	09/07	09/07	09/29	09/07
Hybrid Resources 2C – Metered Quantities	09/07	09/07	09/29	N/A

## Market Simulation Plan:

<https://www.caiso.com/Documents/MarketSimulationPlan-Fall2023Release.pdf>

# Fall 2023 Market Simulation Settlements Calendar



## Market Simulation Fall 2023 Calendar (MAP STAGE) Aug 29, 2023 through Sep 28, 2023

Calendar Day	Day	CMRI T+1B	Submit Meter Data by T+2B 10:00 for Initial T+9B	Publish Initial Statement T+6B	Submit Meter Data by T+6B 18:00 for Recalc T+70B	Publish Recalc Statement T+8B T+70B	Publish Market Invoice
28-Aug-23	Monday						
29-Aug-23	Tuesday						
30-Aug-23	Wednesday	29-Aug					
31-Aug-23	Thursday		29-Aug				
01-Sep-23	Friday	31-Aug					
02-Sep-23	Saturday						
03-Sep-23	Sunday						
04-Sep-23	Monday						
05-Sep-23	Tuesday		31-Aug			ISO Holiday	
06-Sep-23	Wednesday	5-Sep		29-Aug	29-Aug		
07-Sep-23	Thursday		5-Sep				
08-Sep-23	Friday	7-Sep		31-Aug	31-Aug		
09-Sep-23	Saturday						
10-Sep-23	Sunday						
11-Sep-23	Monday		7-Sep			29-Aug	Daily Initial 29-Aug; Daily Initial 31-Aug; Monthly Initial 29-Aug - 31-Aug;
12-Sep-23	Tuesday			Monthly Initial 29-Aug - 31-Aug	5-Sep		
13-Sep-23	Wednesday	12-Sep				31-Aug	
14-Sep-23	Thursday		12-Sep	7-Sep	7-Sep		Daily Recalc 29-Aug; Daily Recalc 31-Aug; Monthly Recalc 29-Aug - 31-Aug;
15-Sep-23	Friday	14-Sep		Monthly Initial 05-Sep - 07-Sep		Monthly Recalc 29-Aug - 31-Aug	Daily Initial 05-Sep; Daily Initial 07-Sep; Monthly Initial 05-Sep - 07-Sep;
16-Sep-23	Saturday					5-Sep	
17-Sep-23	Sunday						
18-Sep-23	Monday		14-Sep				
19-Sep-23	Tuesday			12-Sep	12-Sep	7-Sep	
20-Sep-23	Wednesday	19-Sep					Daily Recalc 05-Sep; Daily Recalc 07-Sep; Monthly Recalc 05-Sep - 07-Sep;
21-Sep-23	Thursday		19-Sep	14-Sep	14-Sep		
22-Sep-23	Friday	21-Sep		Monthly Initial 12-Sep - 14-Sep		12-Sep	Daily Initial 12-Sep; Daily Initial 14-Sep; Monthly Initial 12-Sep - 14-Sep;
23-Sep-23	Saturday						
24-Sep-23	Sunday						
25-Sep-23	Monday		21-Sep				
26-Sep-23	Tuesday			19-Sep	19-Sep	14-Sep	
27-Sep-23	Wednesday	26-Sep					Daily Recalc 12-Sep; Daily Recalc 14-Sep; Monthly Recalc 12-Sep - 14-Sep;
28-Sep-23	Thursday		26-Sep	21-Sep	21-Sep	Monthly Recalc 12-Sep - 14-Sep	
29-Sep-23	Friday	28-Sep		Monthly Initial 19-Sep - 21-Sep		19-Sep	Daily Initial 19-Sep; Daily Initial 21-Sep; Monthly Initial 19-Sep - 21-Sep;
30-Sep-23	Saturday						
01-Oct-23	Sunday						
02-Oct-23	Monday		28-Sep				
03-Oct-23	Tuesday			26-Sep	26-Sep	21-Sep	
04-Oct-23	Wednesday						Daily Recalc 19-Sep; Daily Recalc 21-Sep; Monthly Recalc 19-Sep - 21-Sep;
05-Oct-23	Thursday			28-Sep	28-Sep	Monthly Recalc 19-Sep - 21-Sep	
06-Oct-23	Friday					26-Sep	Daily Initial 26-Sep; Daily Initial 28-Sep; Monthly Initial 26-Sep - 28-Sep;
07-Oct-23	Saturday			Monthly Initial 26-Sep - 28-Sep			
08-Oct-23	Sunday						

Market Simulation Settlements Calendar Fall 2023 :

<https://www.caiso.com/Documents/MarketSimulationSettlementsCalendar-Fall2023.pdf>



# Structured Scenario Registration Details

Market Participants will need to register their request with the ISO to participate in this simulation via the [MarketSim@caiso.com](mailto:MarketSim@caiso.com) mailbox.

Date of registration for MIC enhancements was July 31, 2023.

Date of registration for rest of the projects is extended till Aug 15, 2023.

We will do our best to accommodate late registration



# Fall 2023 Release Overview – System Interface Changes

System	Project	UI	API	Data/Comments	Tech Specs
ADS*	ESET2	Existing	Existing	<p>New ED Reason Codes: “SOC Hold” and “SOC Charge”</p> <p>We will be adding Instruction Types 11 and 12 for ESE2.</p> <p>instructionType Instruction Type – One of the following values:            0 = DOT (5 minute/Hourly/OOS)            1 = Min Constraint (OOS)            2 = Max Constraint (OOS)            3 = Fixed Constraint (OOS)            4 = Start up (Commitment)            5 = Shut down (Commitment)            6= Capacity Award (AS Award)            7 = MSG Transition Instruction            8 = FMM Energy Award            9 = Unannounced AS Test            10 = Operational Instruction  <b>11 = SOC Hold (OOS)</b>  <b>12 = SOC Charge (OOS)</b></p>	8/10/23
CMRI*	ESET2	<p><b>New</b> report to display Exceptional Dispatch Hold State of Charge</p> <p>New: Post-Market &gt; Exceptional Dispatch Hold State of Charge</p>	<p><b>New:</b>            RetrieveStorageUpliftData_CMRIv1            RetrieveStorageUpliftData_CMRIv1_DocAttach</p>		7/17/23

# Fall 2023 Release Overview – System Interface Changes

System	Project	UI	API	Data/Comments	Tech Specs
CMRI*	RSEE2T2	<p><i>New report for resource-specific market priority types and associated MW schedules breakdown for export resources</i></p> <p><b>New:</b> Day-Ahead &gt; RUC Import Export Schedules by Market Priority Types</p>	<p><b>New:</b> RetrieveMarketPriorityType_CMRIv1</p> <p><b>New:</b> RetrieveMarketPriorityType_CMRIv1_Doc Attach</p>	<p><i>Similar to the Existing Day-Ahead &gt; DA Import-Export Schedules report, but the Schedule Type column shall be replaced with “Market Priority Type” and its data enumeration shall be:</i></p> <ul style="list-style-type: none"> <li>• ETC/TOR</li> <li>• DAPT</li> <li>• DALPT</li> <li>• DAECON</li> </ul>	8/10/23
CMRI*	RSEE2T2	<p><i>New report for resource-specific market priority types and associated MW schedules breakdown for export resources</i></p> <p><b>New:</b> Real-Time &gt; Real-Time Export Schedules by Market Priority Types</p>	<p><b>New:</b> RetrieveMarketPriorityType_CMRIv1</p> <p><b>New:</b> RetrieveMarketPriorityType_CMRIv1_Doc Attach</p>	<p><i>Similar to Existing Real-Time -&gt; Real-Time Unit Commitment (RTUC) Advisory Schedules report, but only report binding intervals for export resources and the Schedule Type column shall be replaced with “Market Priority Type” and its data enumeration shall be:</i></p> <ul style="list-style-type: none"> <li>• ETC/TOR</li> <li>• DAPT</li> <li>• DALPT</li> <li>• DAECON</li> <li>• RTPT</li> <li>• DALPT</li> <li>• DAECON</li> </ul>	08/10/23
OASIS*	ESET2	Existing: Energy > System > Operator-Initiated Commitment report	Existing: System > Operator-Initiated Commitment report	New ED type Reason Code: “SOC Hold” and “SOC Charge”	7/17/23
MF RDT*	RSEE2T2	Add a new Resource-Specific Capacity Test Failed-to-Start Rule Exemption flag	Add a new Resource-Specific Capacity Test Failed-to-Start Rule Exemption flag		08/10/23

# Fall 2023 Release Overview – System Interface Changes

System	Project	UI	API	Data	Technical Specifications
RIMS	ESET2	Existing: Existing > App & Study > Equipment Configuration tab > Generation as Modeled and Implemented grid	NA	> Pull storage resource MWh from MF > Add new field for calculated MWh > Add new field for storage resource duration in hours	NA
ITS	RSEE2T2	Existing	NA	Exports e-Tagging Submission Requirement > SCs shall be required to e-tag the following as “Firm Provisional Energy (G-FP)”, via utilizing Misc. field: <ul style="list-style-type: none"> <li>o RT economic (RTECON) exports that clear HASP</li> <li>o DA economic (DAECON) exports that clear both RUC and HASP</li> <li>o RTLPT exports that clear HASP</li> <li>o DALPT exports that clear both RUC and HASP</li> </ul> > SCs shall be required to e-tag the following as “Firm Energy (G-F)”: <ul style="list-style-type: none"> <li>o RTPT exports that clear HASP</li> <li>o DAPT exports that clear both RUC and HASP</li> </ul>	NA
CMRI	WA WEIM GHGE	NA	NA	New Attributes/Records to indicate state/include GHG index price for each state	NA
OASIS*	WA WEIM GHGE	Existing: Prices > Index Prices > Greenhouse Gas Allowance Index Prices	Existing – Prices > Index Prices > Greenhouse Gas Allowance Index Prices	Add WA GHG index prices, display average of daily WA GHG price indices	7/17/23
MF RDT*	WA WEIM GHGE	Add a new BAA level attribute to identify BAAs associated with Washington State	<i>SubmitGeneratorRDT_MFRDv6</i> <i>SubmitGeneratorRDT_MFRDv6_DocAttach</i> <i>RetrieveGeneratorRDT_MFRDv6</i> <i>RetrieveGeneratorRDT_MFRDv6_DocAttach</i>	1. Convert the GHG details in 0..N nested element to record GHG details for each State applicable to the Generator. 2. Add an additional element “State” to indicate CA, WA etc.	08/10/23
SIBR	WA WEIM GHGE	Existing	Existing	Consume WA GHG adders	NA
CIRA	MIC Enhancements	Yes	NA	New Screens: <ul style="list-style-type: none"> <li>• SC Request Unassigned Import Capability</li> <li>• Reserved Import Capability</li> <li>• Contact Information</li> </ul> New Reports: <ul style="list-style-type: none"> <li>• Import Capability RA Report</li> </ul>	NA
OASIS*	MIC Enhancements	New: Available Import Capability Data New: Import Capability used in RA Plan Data	New: AVAIL_IMP_CAP_GRP New: ANNUAL_IMP_CAP_USED_RA_PLAN_GRP MONTHLY_IMP_CAP_USED_RA_PLAN_GRP <a href="https://developer.caiso.com">https://developer.caiso.com</a>		7/17/23

# Maximum Import Capability Enhancements

- **Timeline:** 08/14 - 09/29
- **Structured:** 8/17

Structured Scenarios Document –

<https://www.caiso.com/Documents/Market-Simulation-Structured-Scenarios-Maximum-import-capability-enhancements.pdf>

# Maximum Import Capability Enhancements – Market Sim Scenario

Scenario Number	Unstructured scenario (MIC)	
1	Description	Facilitate submission and retrieval of import capability reports.
	ISO Actions	Facilitate preparation of customer data for setup (NQC/Supply Plan/RA Plan) data from Production to MapStage.  Inform the month and year for which the data would be made available.
	WEIM Market Participant Actions	N/A
	ISO Market Participant Actions	<ol style="list-style-type: none"> <li>1. Submit request for unassigned import capability as part of step 13 of the import allocation process for 2023 &amp; 2024 RA years.</li> <li>2. Upload trades and RA showing for 2023.</li> <li>3. Update contact information for 2023.</li> <li>4. Update the reserve versus tradeable capability for 2023.</li> <li>5. Validate two new OASIS reports for 2023                             <ul style="list-style-type: none"> <li>• OASIS &gt; Resource Adequacy &gt; Available Import Capability</li> <li>• OASIS &gt; Resource Adequacy &gt; Import Capability Used in RA Plan Data (Monthly &amp; Annually)</li> </ul> </li> </ol>
	Expected Outcome	Participants to verify: <ol style="list-style-type: none"> <li>a) Submitting Step 13 request for Unassigned Import Capability.</li> <li>b) Monthly available Import capability.</li> <li>c) Monthly / Annual import capability in RA plan.</li> <li>d) OASIS reports                             <ol style="list-style-type: none"> <li>i. OASIS &gt; Resource Adequacy &gt; Available Import Capability</li> <li>ii. OASIS &gt; Resource Adequacy &gt; Import Capability Used in RA Plan Data (Monthly &amp; Annually)</li> </ol> </li> </ol>
	Anticipated Settlement Outcome	N/A
	Expected Settlement Outcome	N/A

# Energy Storage Enhancements Track 2

- **Timeline:** 09/18- 09/29
- **Structured:** 09/19

Structured Scenarios document -

<https://www.aiso.com/Documents/MarketSimulationStructuredScenarios-EnergyStorageEnhancementsTrack2.pdf>

**Note:** Additional requirements (BRQ 250-254) added in BRS.

CAISO will add a guided unstructured scenario for the additional requirements

# Energy storage enhancements Track 2 - Market Sim Scenario

Scenario Number	Structured scenario	
1	Description	Demonstrate proper settlement for energy storage resources for different ED types.
	ISO Actions	1) Operators will issue ED's for 2 storage resources to hold SOC. 2) Operators will then issue another ED for 1 storage resource with a "hold" ED to move SOC
	WEIM Market Participant Actions	N/A
	ISO Market Participant Actions	N/A
	Expected Outcome	Different ED types for storage resource are being settled properly.
	Anticipated Settlement Outcome	When an energy resource receives a Hold SOC ED, it is anticipated to have Real Time Excess Cost for Instructed Energy Settlement and Exceptional Dispatch Hold SOC Uplift Settlement.
	Expected Settlement Outcome	6482, 6485

# Energy Storage Enhancements Track 2 - Market Sim Scenario

Scenario Number	Unstructured Guided scenario	
2	Description	Verify hourly do not charge from the grid bidding functionality for Standalone or Sub ACC constraints.
	ISO Actions	N/A
	WEIM Market Participant Actions	Submit hourly bid attribute type to not charge from the grid in RTM Submit economic bids for all the resources behind the standalone or sub ACC constraint; for LES resources, submit economic bids to charge/discharge.
	ISO Market Participant Actions	Submit hourly bid attribute to not charge from the grid in RTM and IFM Submit economic bids for all the resources behind the standalone or sub ACC constraint; for LES resources, submit economic bids to charge/discharge.
	Expected Outcome	Market shall enforce a withdrawal limit of 0 MW for the Standalone or Sub ACC constraint.
	Anticipated Settlement Outcome	N/A
	Expected Settlement Outcome	N/A



# WEIM Resource Sufficiency Evaluation Redesign Phase2

- **Timeline:** 09/07 - 09/29
- **Structured:** 09/07

Structured Scenarios document -

<https://www.caiso.com/Documents/MarketSimulationStructuredScenarios-ResourceSufficiencyEvaluationEnhancements-Phase2Track2.pdf>

# WEIM Resource Sufficiency Evaluation Redesign Phase2

Scenario Number	Unstructured scenario (RSEE2 Track -2)	
1	Description	Facilitate submission and Auto Approval of G-FP Export e-Tagging with correct CAISO priority type.
	ISO Actions	N/A
	WEIM Market Participant Actions	<ul style="list-style-type: none"> <li>a) Market Participants should e-tag several export resources as “Firm Provisional Energy (G-FP)”.</li> <li>b) Mark “CAISO Priority Type” in “Misc Info” as RTECON, RTLPT or DALPT</li> <li>c) Market Participants should e-tag several export resources as “non-Firm Provisional Energy”.</li> <li>d) Mark “CAISO Priority Type” in “Misc Info” as CRN ID, DAPT and RTPT</li> </ul>
	ISO Market Participant Actions	N/A
	Expected Outcome	Market Participants verify G-FP e-tags in their own Web Smart Tag system. CAISO Operators will verify ITS for G-FP e-tags.
	Anticipated Settlement Outcome	N/A
	Expected Settlement Outcome	N/A

# WEIM Resource Sufficiency Evaluation Redesign Phase2

Scenario Number	Unstructured scenario (RSEE2 Track -2)	
2	Description	Verify approval of G-F Export e-Tagging with correct CAISO priority type
	ISO Actions	N/A
	WEIM Market Participant Actions	a) Market Participants should e-tag several export resources as "Firm Provisional Energy (G-F)" (via Market Path product field). b) Mark "CAISO Priority Type" in "Misc Info" as RTPT and/or DALPT
	ISO Market Participant Actions	N/A
	Expected Outcome	Market Participants verify G-F e-tags in their own Web Smart Tag system for approval. CAISO Operators will verify ITS for G-F e-tags.
	Anticipated Settlement Outcome	N/A
	Expected Settlement Outcome	N/A

# WEIM Resource Sufficiency Evaluation Redesign Phase2

Scenario Number	Unstructured scenario (RSEE2 Track -2)	
3	Description	Verify denial of G-F Export e-Tagging with correct CAISO priority type.
	ISO Actions	N/A
	WEIM Market Participant Actions	a) Market Participants should e-tag several export resources as “Firm Energy (G-F)”. (via Market Path product field). b) Mark “CAISO Priority Type” in “Misc Info” as RTECON, RTLPT and/or DALPT
	ISO Market Participant Actions	N/A
	Expected Outcome	Market Participants verify G-F e-tags in their own Web Smart Tag system for denial. CAISO Operators will verify ITS for G-F e-tags.
	Anticipated Settlement Outcome	N/A
	Expected Settlement Outcome	N/A

# WEIM Resource Sufficiency Evaluation Redesign Phase2

Scenario Number	Structured scenario (RSEE2 Track -2)	
4	Description	Verify Pro-Rata curtailment of low priority exports
	ISO Actions	a) CAISO initiates EEA3 level alert. b) CAISO initiates pro-rata curtailments of low priority exports of G-FP eTags with the following CAISO Priority types: <ul style="list-style-type: none"> <li>• RTECON</li> <li>• RTLPT</li> <li>• DALPT (non-high priority DA export)</li> </ul>
	WEIM Market Participant Actions	Market Participants should do the following before EEA3 alert is issued <ol style="list-style-type: none"> <li>a) e-Tag several export resources as "Firm Provisional Energy (G-FP)" (via Market Path product field).</li> <li>b) Mark "CAISO Priority Type" in "Misc Info" as RTECON, RTLPT, or DALPT</li> <li>c) e-Tag several export resources as other than "Firm Provisional Energy (G-FP)" (via Market Path product field).</li> <li>d) Mark "CAISO Priority Type" in "Misc Info" as CRN ID, DAPT, RTPT</li> </ol>
	ISO Market Participant Actions	N/A
	Expected Outcome	Market Participants verify curtailed G-FP e-tags in their own Web Smart Tag system. CAISO Operators will verify ITS for the curtailed G-FP e-tags.
	Anticipated Settlement Outcome	N/A
	Expected Settlement Outcome	N/A

# WEIM Resource Sufficiency Evaluation Redesign Phase2

Scenario Number	Unstructured scenario (RSEE2 Track -2)	
5	Description	Verify ADS instructions include Market Priority when HASP results broadcast to ADS: CRN_ID, DAPT, DALPT, RTPT, RTLPT, RTECON
	ISO Actions	N/A
	WEIM Market Participant Actions	Market Participants should confirm market priority in ADS based on bids and HASP results
	ISO Market Participant Actions	N/A
	Expected Outcome	Market Participants verify in ADS Market Priority CAISO Operators verify in ADS Market Priority
	Anticipated Settlement Outcome	N/A
	Expected Settlement Outcome	N/A

# Hybrid Resources 2C – Metered Quantities

- **Timeline:** 09/07- 09/29
- For the unstructured Market Simulation:
  - SC's of Hybrid resources must have the ability to submit Metered Quantities on a component ID only, which would override the current Metered Quantities

# Next Steps

- The next teleconference is scheduled on August 17<sup>th</sup> at 2 PM



# References

# Fall 2023 MAP Stage Connectivity Testing

- **Timeline:**
  - Start 8/11

# ISO Market Simulation Support

- **Hours:** Monday thru Friday 0900-1800 PDT
- **ISO's 24x7 Service Desk:** (916) 351-2309 (Connectivity – UI or API)
- **Email:** [MarketSim@caiso.com](mailto:MarketSim@caiso.com)

# Fall 2023 Communication Plan

- **Schedule**

<b><i>Monday</i></b>	<b><i>Tuesday</i></b>	<b><i>Thursday</i></b>
Aug 14, 21, 28 Sep 11, 18, 25	Sep 5	Aug 10, 17, 24, 31 Sep 07, 14, 21, 28

- **Connection Information**

- **Web Conference Information**

- Web Address: <https://caiso.webex.com/meet/MarketSim>
- Meeting Number: 962 067 710
- Audio connection instructions will be available after connecting to the web conference. When prompted, select "Call me" and enter the phone number you will use during the call. You will be called by the conference shortly.

- **Conference Call Information**

- Dial-in Number:
  - 1-844-517-1271 (Toll Free)
  - 1-682-268-6591
- Access Code: 962 067 710