



California ISO

Market Simulation Plan Fall 2022 Release

Initiatives –


Central procurement entity

Flexible ramping product - deliverability

Hybrid resources phase 2B

Reliability demand resource response phase 2

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Location of Document – [\(link\)](#)

Revision History

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1. Introduction

The objective of this document is to provide the information needed by market participants in order to engage in the Fall 2022 Release initiatives, thereby enabling them to smoothly transition and utilize the new features and functionality that will be available when they go into production.

1.1 Scope of Initiatives


ISO release planning sites for the Fall 2022 Release initiatives – ([link](#))

1. Central procurement entity ([link](#))
2. Flexible ramping product – deliverability ([link](#))
3. Hybrid resources phase 2B ([link](#))
4. Reliability demand resource response phase 2 ([link](#))

1.2 Market Simulation

The ISO conducts market simulations on a regular basis as part of its process of bringing new capabilities to its markets. This provides participants an opportunity to test their systems and procedures in advance of the market implementation. The market simulation process serves a number of purposes for both the ISO and market participants. It also facilitates an effective market operations dress rehearsal and helps expedite a smooth production launch. The benefits of market simulation may include but are not limited to:

- Allowing for system or procedural problem identification and mitigation before the market is operationally or financially binding.
- Enabling market participants to observe the behavior of ISO systems and markets in a simulated production environment, particularly in regards to new functions and features introduced through the addition of the modifications included in the Fall 2022 Release initiatives.
- Establishing confidence in the operational processes and systems associated with the new market functionality implementation.
- Providing a hands-on environment to allow participants to interact with new and unique features and functionality.

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- Providing an environment where market participants can scrutinize and tailor their own tools, applications, and business practices to participate in new market functionality.
- Providing a means of capturing additional market participant input and feedback regarding the implementation of the new market features and functionality, beyond what might have been received in the stakeholder process.
- Providing market participants the tools to help determine:
 - Proper exchange of market related data and validation of new timelines.
 - Common understanding of data submittal requirements and timelines.
 - Familiarity with market rules and timelines.
- An opportunity to verify the ISO Bid-to-bill process in a pre-production environment that includes simulated market and operational data inputs. Allowing the market participants to verify systems, process and procedures which may need modifying due to the functional changes tied to the release.

1.3 Schedule Summary

Fall Release 2022 Market Simulation High Level Time line is the following.

Phase 1 Market Simulation Type	Start	End
Connectivity Testing	08/22/2022	08/29/2022
Structured Simulation	08/30/2022	09/30/2022
Unstructured Simulation	08/30/2022	09/30/2022
Supported Regression Testing	09/26/2022	09/30/2022

ISO will continue to have MAP Stage available for market participants to support regression testing if necessary beyond go live.

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2. Market Simulation Approach


2.1 High Level Overview

The timeline for the Fall 2022 Release initiatives market simulations is identified below. Critical pre-simulation activities are identified in section 2.2 of this document.

<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>
<u>Fall 2022 Market Simulation</u>	08/30/22	08/30/22	09/30/22	
Central procurement entity	09/19/22	09/22/22		09/22/22
Flexible ramping product – deliverability	09/15/22	09/19/22		09/19/22
Hybrid resources phase 2B	09/06/22	09/06/22		09/06/22
Reliability demand resource response phase 2	09/19/22	09/19/22		09/19/22

2.2 Pre-Simulation Activities

The Fall 2022 Release initiatives market simulations will be conducted in the MAP Stage environment. Participants will need to obtain access to this environment if they do not already have access. The ISO envisions participants may wish to access Master File (MF), Market Participant Portal (MPP), Outage Management System (WebOMS), Demand Response Registration System (DRRS), Customer Interface for Resource Adequacy (CIRA), Scheduling Infrastructure and Business Rules (SIBR), Base Schedule Aggregation Portal (BSAP), Balancing Authority Area Operations Portal (BAAOP), CAISO Market Results Interface (CMRI), Automated Dispatch System (ADS), and Market Results Interface Settlements (MRIS). For those who do not already have access to the MAP Stage systems, access can be requested by completing an Application Access Request

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Form (AARF) or modifying existing certificates through the Access Identity Management (AIM) application. Information regarding the completion of AIM and AARF forms can be found on the ISO portal under application access request forms and application installation instructions heading.

Information pertaining to accessing the externally facing ISO environments is detailed in the System Access Information (SAI) for market participants document located on the ISO public site in the “Application Access” ([link](#)).

Systems Access Information Document – ([link](#))

2.3 Pre-Simulation and Simulation Activities Calendar

Activity	Description	Timeframe
MAP Stage Maintenance	MAP Stage maintenance for market simulation preparation for the Fall 2022 Release	08/15-08/22
Fall 2022 Releases Market Simulation Kick-Off Teleconference	ISO to conduct a teleconference to provide MPs with a Fall 2022 Releases market simulation briefing	08/18/2022
Structured Simulation Resource Registration	As identified in the structured simulation documents for each initiative; registration for the resources to be validated during the structured simulation phase of the market simulation	08/12/2022
Fall 2022 Release Simulation Begins	Fall 2022 Releases market simulation in the MAP Stage environment	08/30/2022
Fall 2022 Connectivity Testing	MAP Stage open for interface access validation	08/22 - 08/29
Fall 2022 Structured Scenarios	Fall 2022 Structured Scenarios to be executed.	08/30 - 09/30

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3. General Information

3.1 Participant Observation and Inputs

During the Fall 2022 Release initiatives market simulations, participants will be able to observe market results in the same applications that are available in Production: OASIS, CMRI, ADS, etc.

ISO will seed bids and base schedules on your behalf in MAP Stage, participants are encouraged to input data into the ISO Bid-to-bill using all systems available in Production: MRI-S, SIBR/BSAP, ADS and OMS etc., for a more realistic simulation.

Day Ahead Market (DAM) bids are submitted for T+4 >> (**NOTE:** CB bids are submitted for T+2, if participant submits for T+4 they will be over-written)

- Example: on 9/10 bids are submitted for 9/14

Participants wishing to check and or submit DA bids for T+1 – T+4) can do so after 7am on T.

- Example T=9/10 - DA bids can be submitted for 9/11, 9/12, 9/13 and if after 8am for 9/14
- In the example no seeded bids will over-write submitted bids for T+1, T+2, T+3. For T+4 if the submitted bids come in after 7am they will not be over-written by seeded bids.

Real Time Market (RTM) bids are submitted for T+1 at 11:00am

- Example: on 9/10 static bids are submitted at 11:00am for 9/11
- Participants wishing to check and or submit RT bids for T+1 can do so after 12:00pm (noon), no seeded data will over-write submitted bids.


Day Ahead Base Schedules BSAP (DAM) base schedules are submitted for T+4

Real Time Base Schedules BSAP (RTM) base schedules are submitted for T+ 4

- Example: on 9/10 base Schedules (DAM/RTM) are submitted for 9/14

Participants wishing to check and or submit base schedules for T+1 – T+4) can do so after 8am on T.

- Example T=9/10 - DA/RT base schedules can be submitted for 9/11, 9/12, 9/13 and if after 7am for 9/14
- In the example no seeded base schedules will over-write submitted base schedules for T+1, T+2, T+3. For T+4 if the submitted base schedules come in after 8am they will not be over-written by seeded base schedules.

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SIBR RTM functionality for validating submitted bids or generating submitted bid based on DA market results will still apply, typically MAP Stage market results are not published until after 12pm.

All RTM bids are revalidated between 22:10 and 23:00 for the next day based on latest commitment cost data received.

All DAM bids are revalidated beginning at 03:10 and again at 09:10 for future dates based on latest Master File and commitment cost data received.

All base schedules are revalidated beginning at 08:25 for the next day only based on latest Master File data received.

Bids and Base Schedules must be submitted or verified by participants wanting to validate functionality in SIBR and BSAP or downstream applications with regard to project expectations.

3.2 Release Web Service Changes


ISO has provided all the necessary technical specifications for the Web Service changes in scope for Fall 2022 Release -

<https://developer.caiso.com>

Resource Data Template (RDT) submission and or modifications for the Fall 2022 Release initiatives will take 10 business days to process. Prior to the start of simulation all modified RDT's for the Fall 2022 Release should be emailed to RDT@caiso.com please also Cc MarketSim@caiso.com. Once simulation begins RDT's should be submitted to the MAP Stage Master File with an expected turnaround time of 10 business day, similar to Production.

ISO will be settling unstructured scenario trade dates for the Fall 2022 Release simulations.

ISO will be offering Settlements statements during the Fall 2022 Release market simulation. Similar to Production the ISO will be using estimated Meter data with our initial statements and MP submitted meter data where applicable, for the Re-calc statements.

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3.3 Known Issue List

ISO will create and publish a known issues list and post in on the release planning site – [\(link\)](#)

3.4 Structured Scenarios

MP's will need to register their request with the ISO to participate in this simulation via the MarketSim@caiso.com mailbox.

Please submit the information requested by 08/12/22.

For initiatives not listed, there will be no structured scenarios executed –

1. Central procurement entity [\(link\)](#)
2. Flexible ramping product – deliverability [\(link\)](#)
3. Hybrid resources phase 2B [\(link\)](#)
4. Reliability demand resource response phase 2 [\(link\)](#)

3.5 ISO's Approach

Unstructured Simulation –

If a MP would like to see specific market conditions for their resource please contact ISO at MarketSim@caiso.com preferably TD-1 prior to the unstructured TD's DAM or RT market run.


Regression Simulation –

If a MP would like to see specific market conditions for their resource please contact ISO at MarketSim@caiso.com preferably TD-1 prior to the regression TD's DAM or RT market run.


3.6 Configuration Guides and Payment Calendars

ISO Settlements Calendar and Configuration guides Fall 2022 Release -


- Draft Settlements Configuration Guides – [\(link\)](#)
- Settlements Calendars –

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Calendar Day	Day	CMR I T+1 B	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		
22-Aug-22	Monday							
23-Aug-22	Tuesday							
24-Aug-22	Wednesday	23-Aug						
25-Aug-22	Thursday		23-Aug					
26-Aug-22	Friday	25-Aug						
27-Aug-22	Saturday							
28-Aug-22	Sunday							
29-Aug-22	Monday		25-Aug					
30-Aug-22	Tuesday			23-Aug	23-Aug			
31-Aug-22	Wednesday	30-Aug						
01-Sep-22	Thursday		30-Aug	25-Aug	25-Aug			
02-Sep-22	Friday					23-Aug		
03-Sep-22	Saturday							
04-Sep-22	Sunday							
05-Sep-22	Monday	Cal ISO Holiday						
06-Sep-22	Tuesday							
07-Sep-22	Wednesday	6-Sep		30-Aug	30-Aug	25-Aug		
08-Sep-22	Thursday		6-Sep	Monthly Initial 23-Aug - 30-Aug			Daily Initial 23-Aug; Daily Initial 25-Aug;	

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							Daily Initial 30-Aug; Monthly Initial 23- Aug - 25- Aug
09-Sep-22	Friday	8-Sep					
10-Sep-22	Saturday						
11-Sep-22	Sunday						
12-Sep-22	Monday		8-Sep			30-Aug	
13-Sep-22	Tuesday						Daily Recalc 23-Aug; Daily Recalc 25-Aug; Daily Recalc 30-Aug; Monthly Recalc 23- Aug - 25- Aug
14-Sep-22	Wednesday	13-Sep		6-Sep	6-Sep	Monthly Recalc 23- Aug - 30-Aug	
15-Sep-22	Thursday		13-Sep	8-Sep	8-Sep		
16-Sep-22	Friday						Daily Initial 6-Sep; Daily Initial 8-Sep; Monthly Initial 6-Sep - 8-Sep
17-Sep-22	Saturday						
18-Sep-22	Sunday						
19-Sep-22	Monday		15-Sep				
20-Sep-22	Tuesday			13-Sep	13-Sep	8-Sep	
21-Sep-22	Wednesday	20-Sep				Monthly Recalc 6-Sep - 8-Sep	Daily Recalc 6-Sep; Daily Recalc 8-

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							Sep; Monthly Recalc 6-Sep - 8-Sep
22-Sep-22	Thursday		20-Sep	15-Sep	15-Sep		
23-Sep-22	Friday						Daily Initial 13-Sep; Daily Initial 15-Sep; Monthly Initial 13- Sep - 15-Sep
		22-Sep		Monthly Initial 13- Sep - 15-Sep		13-Sep	
24-Sep-22	Saturday						
25-Sep-22	Sunday						
26-Sep-22	Monday		22-Sep				
27-Sep-22	Tuesday			20-Sep	20-Sep	15-Sep	
28-Sep-22	Wednesday						Daily Recalc 13-Sep; Daily Recalc 15-Sep; Monthly Recalc 13- Sep - 15-Sep
		27-Sep				Monthly Recalc 13- Sep - 15-Sep	
29-Sep-22	Thursday		27-Sep	22-Sep	22-Sep		
30-Sep-22	Friday						Daily Initial 20-Sep; Daily Initial 22-Sep; Monthly Initial 20- Sep - 22-Sep
		29-Sep		Monthly Initial 20- Sep - 22-Sep		20-Sep	
01-Oct-22	Saturday						
02-Oct-22	Sunday						
03-Oct-22	Monday		29-Sep				
04-Oct-22	Tuesday			27-Sep	27-Sep	22-Sep	

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05-Oct-22	Wednesday					Monthly Recalc 20-Sep - 22-Sep	Daily Recalc 20-Sep; Daily Recalc 22-Sep; Monthly Recalc 20-Sep - 22-Sep
06-Oct-22	Thursday			29-Sep	29-Sep		
07-Oct-22	Friday			Monthly Initial 27-Sep - 29-Sep		27-Sep	Daily Initial 27-Sep; Daily Initial 29-Sep; Monthly Initial 27-Sep - 29-Sep
08-Oct-22	Saturday						
09-Oct-22	Sunday						
10-Oct-22	Monday						
11-Oct-22	Tuesday					29-Sep	
12-Oct-22	Wednesday					Monthly Recalc 27-Sep - 29-Sep	Daily Recalc 27-Sep; Daily Recalc 29-Sep; Monthly Recalc 27-Sep - 29-Sep
13-Oct-22	Thursday						
14-Oct-22	Friday						
15-Oct-22	Saturday						
16-Oct-22	Sunday						

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4. Market Simulation Support

4.1 Routine Functions

All normal support processes should be followed for support functions that are not specific to the market simulation. These include system connectivity issues, system availability issues, user account and permissions issues, etc. The ISO Help Desk can be reached 24x7, 365 days a year @ (916) 351-2309.

4.2 Market Simulation-Specific Support

The ISO will operate a Market Simulation Support Center throughout the market simulation. This support center is focused on providing support for market simulation specific issues. Hours of operation of the Market Simulation Support Center are 09:00 – 18:00 PPT, Monday through Friday.


Issues will be tracked through the ISO’s Case Management System, CIDI. Simple questions that can be answered in a single call can be asked without opening a CIDI case, but if the issue cannot be resolved on the call, then participants will need to open a CIDI case. Using the “Functional Environment” field please identify the CIDI case as a “Market Simulation Fall 2022” simulation related question and not a “Production” question.

4.3 Market Simulation Communication

Dial in numbers and call schedules to be posted on the ISO Calendar – ([link](#))

4.4 Market Simulation Environment Maintenance


Fall 2022 Release market simulation maintenance will take place Monday morning through Tuesday morning as the weekly maintenance window.

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5. Market Simulation Trainings

Please find information regarding Fall 2022 Release market simulation training offerings at the following locations -

- Training calendar – [\(link\)](#)
- ISO training contact – CustomerTraining@caiso.com

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6. Market Simulation Execution and Exceptions

MAP Stage has been setup with specific application characteristics and data flows to foster successful simulation, please note these changes are made to facilitate a simulation and will not be implemented in Production –

The ISO will upload a previous day's production based bid set for the Day Ahead Markets (DAM) run by 10:00 PPT daily.

Market participants can overwrite these bids between 10:00 PPT and 11:00 PPT when the DAM closes.

DAM will close @ 11:00 PPT and the results will be published by 14:00 PPT daily unless it is a Structured Scenario day, it may take ISO longer to publish DAM due to Scenario setup and verification.

Real Time (RT) template bids will be built from DAM awards as the standard process, ISO will seed RT bids and base schedules for EIM entities.

RT bid markets for a specific Trade Date (TD) open automatically @ 11:00 PPT TD-1.


Market participants are encouraged to bid and base schedule in the Real Time Markets (RTM) to foster a more realistic simulation, the only exceptions are during structured scenario executions were identified.

Market participants will need to register for a tagging test bed user identification if they would like to simulate E-Tagging, if no E-Tag is submitted ISO will “auto tag” on your behalf, limit one registration per SCID.

ISO has activated auto approval for all OMS submissions and changes in MAP Stage.


Please note the timeframes for each Settlements statement publication period are different.

Settlements timelines are covered in section 3.5 above.

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7. Documentation Links

Fall 2022 Release Initiatives Release Planning Site – [\(link\)](#)

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8. ISO Market Simulation Contact

Please contact MarketSim@caiso.com if you have any questions or concerns regarding this plan and its content.