

Market Simulation Structured Scenarios

Day-Ahead Market Enhancements

Version 1.3
08/1/2025

Revision History

Date	Version	Description
07/31/2023	1.0	Document Created
04/24/2025	1.1	Added dates for DAME MSIM, added section 3, 4, 6, and 7 to reflect schedule. Note: Scenarios have not changed and remain current for the purposes of DAME Market Simulation.
05/14/2025	1.2	Updated MSS-001, MSS-002, MSS-004 Charge Codes
8/1/2025	1.3	Updated Calendar dates to reflect most recent updates. No changes to Scenarios. Future iteration to include report names.



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1. Introduction

The primary goal of market simulation testing is to ensure that CAISO and external participants are prepared for live market conditions and can operate effectively within the CAISO markets. These simulations are crucial when there are new market features, rule changes, system upgrades, and/or new participants joining the market.

1. **Enhanced Efficiency and Stability:** Simulations contribute to efficient and stable market operations by allowing CAISO and entities' systems to work in unison.
2. **New Rule and Feature validation:** CAISO may introduce new market rules, protocols, or features in order to adhere to architecture roadmaps, compliance standards, operational enhancements, and/or policy and stakeholder processes. Simulation testing allows for early detection and correction of issues, ensuring new rules and functionalities do not inadvertently impact market operations.
3. **Increased Operational Readiness:** For market participants, simulations provide a hands-on environment to practice new functionality being implemented to ensure systems are compatible and ready for CAISO's operational protocols.
4. **Effective Risk Mitigation:** By identifying and addressing issues in a controlled environment, both CAISO and market participants can reduce risks associated with software malfunctions, data errors, or misunderstanding of market rules and implementation impacts.


The objective of this document is to provide the information needed for Market Participants to participate in the Day-Ahead Market Enhancement (DAME) MAPSTAGE Market Simulation scenarios:

For the scope of this implementation and this initiative, please refer to the Day-Ahead Market Enhancement (DAME) External Business Requirements Specification – [Release Planning](#).

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2. Market Simulation Schedule

Initiative	Connectivity Testing	Integration Testing	Structured Market Sim	Unstructured Market Sim	Parallel Operations	Activation
<u>Day-Ahead Market Enhancements</u>	06/02/25 – 09/01/25	06/02/25 – 09/01/25	09/02/25 – 12/01/25	12/01/25 – 01/15/26	02/02/26 – 03/26/26 (EDAM OB)	05/01/26
<u>Extended Day-Ahead Market</u>	06/02/25 – 09/01/25	06/02/25 – 09/01/25	09/02/25 – 12/01/25	12/01/25 – 01/15/26	02/02/26 – 03/26/26 (EDAM OB)	05/01/26
<u>EDAM ISO BAA Participation Rules Track A</u>	06/02/25 – 09/01/25	06/02/25 – 09/01/25	09/02/25 – 12/01/25	12/01/25 – 01/15/26	02/02/26 – 03/26/26 (EDAM OB)	05/01/26
<u>Extended Day-Ahead Market On-Boarding - Pacificorp</u>	05/01/25 – 05/31/25	06/02/25 – 09/01/25	09/02/25 – 12/01/25	12/01/25 – 01/15/26	02/02/26 – 03/26/26	05/01/26
<u>Extended Day-Ahead Market - PGE</u>	11/01/25 – 11/30/25	12/01/25 – 03/01/26	03/01/26 – 04/30/26	05/01/26 – 06/12/26	06/01/26 – 09/15/26	10/01/26
<u>WEIM – Power Watch</u>	09/01/25 – 10/17/25	10/01/26 – 11/30/26	12/01/25 – 02/13/26	NA	02/16/26 – 04/17/26	05/06/26
<u>WEIM – Black Hills</u>	09/01/25 – 10/17/25	10/01/26 – 11/30/26	12/01/25 – 02/13/26	NA	02/16/26 – 04/17/26	05/06/26

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3. Connectivity Testing – June 1, 2025

3.1 Connectivity Testing Overview

- Covers network testing and certificate provisioning
- Participants without certificates are expected to reach out to their User Access Administrator (UAA) for proper provisioning.
- Participants must attain MAPSTAGE provisioning for the following applications ahead of Market Simulation: **MF, SIBR, MRI-S, PLC, webOMS, OASIS, and ALFS.**
- Participants must update their firewall settings to ensure proper connections to applications ahead of Market Simulation.

3.2 Connectivity Testing Success Criteria

Certificate	Success Criteria
YES	<ul style="list-style-type: none"> • Successful upon completion of following criteria: <ul style="list-style-type: none"> ○ Access application via User Interface (UI) and login ○ Access application via API
NO	<ul style="list-style-type: none"> • Successful upon completion of following criteria: <ul style="list-style-type: none"> ○ Access network via UI and/or API and receive error message about incorrect provisioning
NO	<ul style="list-style-type: none"> • Not successful if: <ul style="list-style-type: none"> ○ Attempt to access network via UI and/or API and receive error message other than request for provisioning

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4. Market Simulation– Sept. 2, 2025


4.1 Market Simulation Overview

- Covers testing in the MAPSTAGE environment
- MAPSTAGE 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 use MAPSTAGE to validate the interaction of customer-driven changes with the ISO systems

Note: Market participants must submit a request to the ISO by email MarketSim@caiso.com as well as submit a CIDI with their intent to participate in the DAME Market Simulation. Participants must register by August 15th, 2025.

4.2 Market Simulation Success Criteria – Live Data

Certificate	Success Criteria
YES	<ul style="list-style-type: none"> • Successful upon completion of connectivity testing and Integration Testing with live data • Successful completion of Structured Market Simulation Scenarios
YES	<ul style="list-style-type: none"> • Not successful if: • Receiving submission or retrieval error messages. Submit CIDI and email marketsim@caiso.com for support.
NO	<ul style="list-style-type: none"> • Not successful as participant cannot proceed to Market Simulation Testing without first attaining proper provisioning <ul style="list-style-type: none"> ○

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5. Structured Scenarios Approach

5.1 High Level Overview

The identified scenarios will be executed during the structured scenario portion of the Day-Ahead Market Enhancements Readiness market simulation.

5.2 Structured Scenarios Conditions and Setup


The following additional setup will be used by the ISO during the scenario execution.

Market Participant pre-Market Simulation Actions


Market participants will need to register their request with the ISO to participate in the Day-Ahead Market Enhancements project simulation via the MarketSim@caiso.com as well as submit a CIDI.

5.3 Structured Scenarios


Scenario Number	Scenario Description	
DAME – MSS-001	Description	Demonstrate proper submission of IRU/IRD and RCU/RCD bids
	ISO Actions	Run DAM and settlements
	WEIM Market Participant Actions	N/A
	ISO Market Participant Actions	SC's would submit IRU/IRD and RCU/RCD bids for resources
	Expected Outcome	Verify in OASIS : <ul style="list-style-type: none"> • IR/RC Bid-Related Data • IFM IR and RUC RC Nodal Prices • IFM IR and RUC Binding Constraints Shadow Prices • IFM IR and RUC RC Nomogram/Branch and Interties Shadow Prices • IFM IR and RUC RC MPM Intertie Constraint Competitive Path • IFM IR and RUC RC Aggregate Awards • IRU/IRD Requirements • IRU/IRD Requirement Thresholds

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		<ul style="list-style-type: none"> • IRU/IRD Requirements Input Polynomials • IRU/IRD Requirements Uncertainty Histograms • IRU/IRD Forecasts • IRU/IRD Demand Curves • IFM Forecast Movement • Payment and No-Payments of IR/RC-Charge Code Settlements Amounts Data <p>CMRI:</p> <ul style="list-style-type: none"> • IR and RC DAB Curves • IFM IRU and RUC RCU Mitigated Bids • IFM IR and RUC RC Resource Awards • IFM IR and RUC RC Resource Prices • IFM IR and RUC RC LSE Resource Awards • IRU/IRD LOC for Overlapping RA Capacity • DA/Base Schedule Forecasted Movement Data
	Anticipated Settlement Outcome	N/A
	Expected Settlement Outcome	<p>Verify settlements charge codes for:</p> <p>Main CCs: 8071, 8081, 8800, 8810, 6630, 6620, 66200, 7070, 8080, 8088</p> <p>Possible CCs:</p> <ol style="list-style-type: none"> 1) IR: 8071, 8076, 8077, 8081, 8086, 8087 2) RC: 8800, 8806, 8807, 8810, 8816, 8817, 3) TSR for IR and RC: 8011, 8811 4) BCR: 6630, 6636, 6637, 6620, 66200, 6678, 66780 5) FRP: 7070, 7071, 7076, 7077, 7078, 7081, 7087, 7088 6) RSE: 8080, 8088 7) EDAM Access Charge: 8326, 8322 8) DA offsets: 8404; 8704 9) Congestion: 6700, 6790, 6701, 6706, 6791 10) GHG: 8310, 8315 11) GMC: 4560, 4561, 4563, 4564, 4566, 4567


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Scenario Number	Scenario Description	
DAME – MSS-002	Description	Demonstrate change of activated transmission constraints for IRU/IRD deployment.
	ISO Actions	<ul style="list-style-type: none"> Change set of activated transmission constraints, monitored for IRU/IRD deployment. Run DAM and settlements
	WEIM Market Participant Actions	N/A
	ISO Market Participant Actions	SC's would submit IRU/IRD and RCU/RCD bids for resources in Day Ahead Market
	Expected Outcome	<p>Verify for changed set of activated transmission constraints in OASIS :</p> <ul style="list-style-type: none"> IR/RC Bid-Related Data IFM IR and RUC RC Nodal Prices IFM IR and RUC Binding Constraints Shadow Prices IFM IR and RUC RC Nomogram/Branch and Interties Shadow Prices IFM IR and RUC RC MPM Intertie Constraint Competitive Path IFM IR and RUC RC Aggregate Awards IRU/IRD Requirements IRU/IRD Requirement Thresholds IRU/IRD Requirements Input Polynomials IRU/IRD Requirements Uncertainty Histograms IRU/IRD Forecasts IRU/IRD Demand Curves IFM Forecast Movement Payment and No-Payments of IR/RC-Charge Code Settlements Amounts Data <p>CMRI:</p> <ul style="list-style-type: none"> IR and RC DAB Curves IFM IRU and RUC RCU Mitigated Bids IFM IR and RUC RC Resource Awards IFM IR and RUC RC Resource Prices IFM IR and RUC RC LSE Resource Awards IRU/IRD LOC for Overlapping RA Capacity DA/Base Schedule Forecasted Movement Data

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Scenario Number	Scenario Description	
	Anticipated Settlement Outcome	N/A
	Expected Settlement Outcome	Verify settlements charge codes for: Main CCs: 8071, 8081 Possible CCs: 1) IR: 8071, 8076, 8077, 8081, 8086, 8087 2) RC: 8800, 8806, 8807, 8810, 8816, 8817, 3) TSR for IR and RC: 8011, 8811 4) BCR: 6630, 6636, 6637, 6620, 66200, 6678, 66780 5) FRP: 7070, 7071, 7076, 7077, 7078, 7081, 7087, 7088 6) RSE: 8080, 8088 7) EDAM Access Charge: 8326, 8322 8) DA offsets: 8404; 8704 9) Congestion: 6700, 6790, 6701, 6706, 6791 10) GHG: 8310, 8315 11) GMC: 4560, 4561, 4563, 4564, 4566, 4567

Scenario Number	Scenario Description	
DAME – MSS-003	Description	Demonstrate settlements charge codes for IRU/IRD bids in case of bid cost recovery
	ISO Actions	Run DAM and Settlements Trigger bid cost recovery for few resources.
	WEIM Market Participant Actions	N/A
	ISO Market Participant Actions	SCs to submit competitive DA bids
	Expected Outcome	Review Settlements for BCR charge codes
	Anticipated Settlement Outcome	Settlements report to publish resources with BCR charge codes

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Scenario Number	Scenario Description	
	Expected Settlement Outcome	CC 6630, 6636, 6637

Scenario Number	Scenario Description	
DAME – MSS-004	Description	Demonstrate settlements charge codes for RCU/RCD bids in case of bid cost recovery
	ISO Actions	Run RT market and Settlements Trigger bid cost recovery for few resources.
	WEIM Market Participant Actions	N/A
	ISO Market Participant Actions	SCs to submit competitive RT bids
	Expected Outcome	Review Settlements for BCR charge codes
	Anticipated Settlement Outcome	Settlements report to publish resources with BCR charge codes
	Expected Settlement Outcome	CC 6620, 66200, 6678, 66780, 8806, 8807

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6. Parallel Operations– Feb. 2, 2026


6.1 Parallel Operations Overview

- Covers testing in the STAGE environment
- 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
- Parallel Operations 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 use STAGE to validate the interaction of customer-driven changes with the ISO systems

6.2 Parallel Operations Success Criteria – Live Data

- Note: ISO to provide updated criteria and most accurate quality of data after MAPSTAGE ahead of Parallel Operations Testing.

Certificate	Success Criteria
YES	<ul style="list-style-type: none"> • Successful upon completion of connectivity testing, Integration Testing with live data, and Market Simulation Scenarios • Successful completion of Parallel Operations Scenarios
YES	<ul style="list-style-type: none"> • Not successful if: • Receiving submission or retrieval error messages. Submit CIDI and email marketsim@caiso.com for support.
NO	<ul style="list-style-type: none"> • Not successful as participant cannot proceed to Parallel Operations Testing without first attaining proper provisioning

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7. Activation– May 1, 2026

- Complete successful Connectivity, Integration, Market Simulation, and Parallel Operations testing ahead of expected Activation on 5/1/26
- Participants to confirm to Market Simulation team and Customer Readiness team their readiness for activation via submission of CIDI and emailing MarketSim@Caiso.com
- ISO to support participants throughout testing and thereafter for participant readiness

8. ISO Market Simulation Contact

Please contact MarketSim@caiso.com if you have any questions, feedback, and/or concerns about the testing and/or scenarios disclosed in this document.