California ISO

Market Simulation Structured Scenarios

Summer 2021 Readiness

Version 1.4

6/24/2021

Location of Document

Release Planning

Revision History

Date	Version	Description	Author
4/12/2021	1.0	Initial Draft	Anshuman Vaidya
4/21/2021	1.1	Updated Market Sim registration date to 05/06/2021	Anshuman Vaidya
5/14/2021	1.2	Removed Scenario 8	Anshuman Vaidya
5/19/2021	1.3	Added more details for Scenario 6	Anshuman Vaidya
6/24/2021	1.4	Added Scenario 8a, 8b and 9	Anshuman Vaidya

Table of Contents

1. Introduction

The objective of this document is to provide the information needed to ISO Market Participants to participate in the Summer 2021 Readiness simulation scenarios.

For the scope of this implementation and this initiative, please refer to the Summer 2021 Readiness External Business Requirements Specification –

Release Planning

2. Structured Scenarios Approach

2.1 High Level Overview

The identified scenarios will be executed during the structured scenario portion of the Summer 2021 Readiness market simulation.

2.2 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 Summer 2021 Readiness project simulation via the MarketSim@caiso.com mailbox.
Market participants, submit your request and any additional information requested in this document by May 06th , 2021.

==Please submit your request and any additional information identified above by May 06, 2021.==

ISO pre-Market Simulation Activities

1. The ISO will setup the balancing area ramping tools to support each registered EIM participating in these scenarios.

2.3 Structured Scenario

Scenario Number	Scenario Execution Trade Date: TBD	
1	Description	RTM Import & Export Market Incentives during Tight System Conditions
	ISO Actions	CAISO will set up a scenario where: o Tight system conditions exist. (CAISO to create conditions in RTM conducive to buying energy at relatively high prices.) o CAISO issues an "Operating Reserve Deficiency" AWE for specific hours in DA and RT. o CAISO market systems will schedule incremental imports and decremented exports in HASP, consistent with the tight system conditions. o CAISO will perform price corrections as necessary to simulate lower prices in FMM relative to HASP, i.e. well below the $100 bid price
	EIM Market Participant Actions	
	ISO Market Participant Actions	SC's submit bids in RTM for block interties for several hours, around $100, to either increase the import relative to DA schedule or decrease the export relative to DA schedule.
	Expected Outcome	
	Anticipated Settlement Outcome	Verify make-whole settlements for RTM Import & Export.
	Expected Settlement Outcome	• CAISO will execute settlements calculations. • SCs will validate their statements.

Scenario Number	Scenario Execution Trade Date: TBD	
2	Description	Release of All Applicable (Contingent & non-Contingent) Operating Reserves at the Bid Cap Price
	ISO Actions	CAISO will set up a scenario where: o Tight system conditions exist. (CAISO to create conditions in RTM conducive to buying energy at the bid cap.) o CAISO issues an "Operating Reserve Deficiency" AWE for specific hours in DA and RT. o Operator released operating reserve at bid cap price. o CAISO market systems will dispatch resources into their ancillary services capacity range if the local price reaches or exceeds the bid cap.
	EIM Market Participant Actions	
	ISO Market Participant Actions	Resources submit competitive energy bids for capacity covered by ancillary services.
	Expected Outcome	Verify that at times during the tight system conditions period, resources are dispatched into their ancillary services capacity range and their resource-specific price is at or above the bid cap. Verify that at times during the tight system conditions period, expected energy allocated within the ancillary services capacity range is priced at the bid cap instead of at their originally submitted energy bid price.
	Anticipated Settlement Outcome	*N/A*
	Expected Settlement Outcome	• CAISO will execute settlements calculations. • SCs will validate their statements.

Scenario Number	Scenario Execution Trade Date: TBD	
3	Description	Ensure Storage Resources have Sufficient SOC to Support Regulation Up and Regulation Down Awards for at Least 30 Minutes in RTM
	ISO Actions	
	EIM Market Participant Actions	
	ISO Market Participant Actions	Storage resources submit competitive regulation up and regulation down bids in RTM.
	Expected Outcome	Verify storage resources RT regulation up and down awards
	Anticipated Settlement Outcome	*N/A*
	Expected Settlement Outcome	• CAISO will execute settlements calculations. • SCs will validate their statements.

Scenario Number	Scenario Execution Trade Date: TBD	
4	Description	Operator Utilization of Traditional ED for Storage Resources
	ISO Actions	o CAISO issues traditional max GOTO EDs for storage resources with a GOTO below zero, instructing them to charge as necessary.
	EIM Market Participant Actions	
	ISO Market Participant Actions	
	Expected Outcome	Verify storage resources dispatch follow issued EDs (existing functionality). (ADS, CMRI and BAAOP) Verify storage resources settlements per existing EDs rules (existing functionality). (MRI-S)
	Anticipated Settlement Outcome	*N/A*

Scenario Number	Scenario Execution Trade Date: TBD	
	Expected Settlement Outcome	• CAISO will execute settlements calculations. • SCs will validate their statements.

Scenario Number	Scenario Execution Trade Date: TBD	
5	Description	RDRR Enable dispatch in RTM
	ISO Actions	Tight system conditions exist. (CAISO to create conditions in RTM conducive to buying energy near the bid cap.) At various times during the tight systems conditions, CAISO enables RDRR system-wide, within a region or within a sub-region
	EIM Market Participant Actions	
	ISO Market Participant Actions	Submit RDRR bids in RTM, between 95% -100% of soft bid cap. Register and submit bids for 60-minute and 15-minute dispatchable RDRRs.
	Expected Outcome	RDRRs are dispatched as necessary to meet system needs. • 60-minute dispatchable RDRRs are dispatched at a uniform value over a trade hour. 5 minute dispatch=FMM dispatch = HASP dispatch. • 15-minute dispatchable RDRRs are dispatched at a uniform value over an FMM interval. 5 minute dispatch = FMM dispatch. • 5-minute dispatchable RDRRs are dispatched similar to generating resources. At times, RDRRs may set the LMP.
	Anticipated Settlement Outcome	*N/A*

Scenario Number	Scenario Execution Trade Date: TBD	
	Expected Settlement Outcome	• CAISO will execute settlements calculations. • SCs will validate their statements.

Scenario Number	Scenario Execution Trade Date: TBD	
6	Description	Flexible Ramping Capacity and Sufficiency Tests.
	ISO Actions	ISO will perform capacity test after flex ramp test in RTBS. The uncertainty requirements from flexible ramp test will be used in the capacity test. Flexible ramp and capacity test will be performed for every EIM, regardless if any of the test fail. ISO will account resource derate in the capacity test . Only if both flexible ramping test and capacity test pass, the Resource Sufficiency Evaluation (RSE) is deemed successful for the corresponding trading hour 15-minute intervals that tested.
	EIM Market Participant Actions	Monitor outcome of flexible and capacity tests.
	ISO Market Participant Actions	
	Expected Outcome	Market participants to check 'EIM Transfer Limits by Tie' report on Oasis to see intervals for which either capacity or flexible ramp sufficiency test fails, limit is published/enforced only in case one of them fails.
	Anticipated Settlement Outcome	*N/A*
	Expected Settlement Outcome	• CAISO will execute settlements calculations. • SCs will validate their statements.

Scenario Number	Scenario Execution Trade Date: TBD	
7	Description	Auto-mirroring for specified mirror resources
	ISO Actions	Market application will create schedule for the auto mirror resources based on ETIE, ITIE, TG, TNGR schedules cleared in DA market and mapped to the auto mirror resource in MF.
	EIM Market Participant Actions	EIM entity shall provide the auto-mirror mapping between mirror system resources and registered ETIE, ITIE, TG and TNGR in MF. EIM entity will verify the auto mirror schedules are equal to cleared in DA ETIE, ITIE, TG, TNGR schedules
	ISO Market Participant Actions	
	Expected Outcome	Auto mirror schedules are equal to cleared in DA ETIE, ITIE, TG, TNGR schedules
	Anticipated Settlement Outcome	*N/A*
	Expected Settlement Outcome	• CAISO will execute settlements calculations. • SCs will validate their statements.

Scenario Number	Scenario Execution Trade Date: TBD	
8 a	Description	Post-HASP adjustment pro rata allocate import and internal transmission to high priority wheels
	ISO Actions	CAISO will setup scenario where the HASP optimal solution results in an under-generation power balance constraint relaxation and/or uneconomic adjustments of PT wheeling self-schedules that: (a) Compete with imports on a congested intertie in the import direction an administrative schedule adjustment is performed among regular imports not tied to wheeling transactions and PT wheels. Pro-rata adjustment ED instructions will be sent out if approved by operator, ED instructions for the hourly resources will be respected by following RTD, RTPD, STUC for the affected hour.
	EIM Market Participant Actions	Submit non-RA imports (in CAISO area), RA imports, PT wheels across MALIN and NOB using MF registered system resources.
	ISO Market Participant Actions	Submit non-RA imports (in CAISO area), RA imports, PT wheels across MALIN and NOB using MF registered system resources.
	Expected Outcome	Verify the results in CMRI
	Anticipated Settlement Outcome	*N/A*

Scenario Number	Scenario Execution Trade Date: TBD	
8 b	Description	Post-HASP adjustment pro rata allocate import and internal transmission to high priority wheels
	ISO Actions	CAISO will setup scenario where the HASP optimal solution results in an under-generation power balance constraint relaxation and/or uneconomic adjustments of PT wheeling self-schedules that: (b) Compete with RA supply (imports, generating resources, and NGRs) through a congested flowgate (e.g., Path 26 North to South), an administrative schedule adjustment is performed among supply schedules and PT wheels Pro-rata adjustment ED instructions will be sent out if approved by operator, ED instructions for the hourly resources will be respected by following RTD, RTPD, STUC for the affected hour.
	EIM Market Participant Actions	Submit non-RA imports (in CAISO area), RA imports, PT wheels across MALIN and NOB using MF registered system resources.
	ISO Market Participant Actions	Submit RA Supply Bids/Self-Schedules, non-RA imports (in CAISO area), RA imports, PT wheels across MALIN and NOB using MF registered system resources.
	Expected Outcome	Verify the results in CMRI
	Anticipated Settlement Outcome	*N/A*

Scenario Number	Scenario Execution Trade Date: TBD * This scenario will be executed in unstructured fashion	
9	Description	Outage Pro-rata impact on RA and non-RA capacity on a supporting resource
	ISO Actions	CAISO will run processes automatically as normal.
	EIM Market Participant Actions	N/A

	ISO Market Participant Actions	1. SC upload Supply & RA plan for the supporting resource of export in CIRA
		2. SC submits Derate for the supporting resource of export in OMS
		  a. Planned
		  b. Forced
		  c. Overlapping
		    i. Planned & Forced,
		    ii. Planned & Planned,
		    iii. Forced & Forced
		3. SC must provide the RA curtailment (for planned) in CIRA by outage before RASC evaluation run. After evaluation run they can show the curtailment in planned substitution screen. If curtailment breakdown is not provided, Outage is subject to auto denial.
		4. SC must provide the RA curtailment (for Forced) in CIRA Forced substitution screen. If not provided, Outage will be pro-rated automatically.
		5. Verify RAAIM results

	Expected Outcome	1. Planned outages are subject to auto denied if curtailment breakdown (RA vs Non-RA) not shown. 2. System pro-rata allocated derate to RA and non-RA, to support PT export for Forced outages.
	Anticipated Settlement Outcome	N/A

3. ISO Market Simulation Contact

Please contact MarketSim@caiso.com if you have any questions or concerns regarding these scenarios.