Market Simulation - Fall 2022 Release

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Recordings

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Agenda

- Fall 2022 MAP Stage Availability
- Fall 2022 MAP Stage Connectivity
- Fall 2022 Market Simulation Initiatives & Timelines
- Fall 2022 System Interface Changes
- Initiatives
  - Reliability demand resource response phase 2
  - Flexible ramping product - deliverability
  - Hybrid resources phase 2B
- Known issues
- Next Steps

Fall 2022 MAP Stage Availability

- Refer to MAP Stage portal https://portalmap.caiso.com for system availability information

- Current MAP Stage Scheduled Maintenance

- Upcoming MAP Stage Scheduled Maintenance
    - CMRI 10/21 – 10/26
    - OASIS 10/21 – 10/26

Fall 2022 MAP Stage Connectivity Testing

- Available for Connectivity
  - 8/22: ALFS Submit/Retrieve SCVERForecast
  - 9/16: MF UI
  - 9/16: CIRA
  - 9/19: MF API
  - 9/30: ADS (Independent)
  - 10/11: CMRI for FRP
  - 10/13: OASIS for FRP

- Upcoming for Connectivity
  - CMRI for HR2B 10/26
  - OASIS for HR2B 10/26

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Fall 2022 Market Simulation Initiatives & Timelines

Fall 2022 Initiatives	Start Date	Start Date (Trade Date)	End Date	Scenario Start (Trade Date)
Fall 2022 Market Simulation				
Flexible ramping product – deliverability	10/11/22	10/11/22	11/11/22	10/18 & 10/20
Hybrid resources phase 2B	10/11/22	10/11/22	11/11/22	10/27 & 11/01

Market Simulation Plan:
https://www.caiso.com/Documents/MarketSimulationPlan-Fall2022Release.pdf

2022 - System Interface Changes

System	Release	Project	API Service Name & Major Version, Artifacts	MAP-Stage	Production	Technical Specifications
SIBR	2022 Independent	Trans. Svc. & Mkt Sched. Priorities Ph. 1	New: SC of PT Export New: SC of supporting resource	✓ 5/5/22 - UI API TBD	✓ 6/1/22 - UI API TBD	TBD
MF	Fall 2022	Hybrid Resources 2B	SubmitGeneratorRDT_MFRDv5_20211001 RetrieveGeneratorRDT_MFRDv5_20211001	✓	Deployed	✓
MF	Fall 2022	Hybrid Resources 2B	• RDT Definitions v17 DRAFT: • GRDT v17 Changes: • RESOURCE tab: • HYBRID_COMPONENTS tab: (Hybrid Resource Phase 2-B, activation date moved to Fall 2022) • Add fields: MIN_CONT_ENERGY_LIMIT, MAX_CONT_ENERGY_LIMIT, ENERGY_EFFIC	✓ 9/19/22	*12/1/22*	✓ Drafts 5/24/22
SIBR	Fall 2022	Hybrid Resources 2B	SubmitDynamicResourceLimitsData_SIBRv1 RetrieveDynamicResourceLimitsData_SIBRv1	10/27/22	*12/1/22*	✓ Artifacts 2/2/22 ✓ Tech Spec 2/8/22
ALFS	Fall 2022	Hybrid Resources 2B	SubmitSCVERForecast_ALFSv1 RetrieveSCVERForecast_FDRv1	✓ 8/22/22	*12/1/22*	✓ 5/25/22

2022 - System Interface Changes

System	Release	Project	API Service Name & Major Version, Artifacts	MAP-Stage	Production	Technical Specifications
CMRI	Fall 2022	Hybrid Resources 2B	Modify: RetrieveEIRForecast_CMRIv1_AP - 20220401 Modify: RetrieveEIRForecast_CMRIv1_DocAttach_AP – 20220401	10/20/21 – 10/26	*12/1/22*	✓ 7/15/22
CMRI	Fall 2022	Hybrid Resources 2B	New: RetrieveAggregatedCapabilityConstraintDefinition_CMRIv1_AP New: RetrieveAggregatedCapabilityConstraintDefinition_CMRIv1_DocAttach_AP	10/20/21 – 10/26	*12/1/22*	✓ 7/15/22
~~CMRI~~	~~Fall 2022~~	~~FRP Improvements – Deliverability~~	~~Resource Nodal prices for the FRP awards~~ Will leverage existing API & UI functionality for FRP products (FRU/FRD) – No changes need for UI & API functionality; Users can continue to use existing UI/API functionality as is.	✓ 10/11/22	*12/1/22*	~~N/A~~
OASIS	Fall 2022	Hybrid Resources 2B	Include constraint in the Scheduling Constraint Shadow Prices report • New: Aggregate Capability Constraint Shadow Prices; ACC_SHDW_PRC	10/20/21 – 10/26	*12/1/22*	✓ 7/15/22
OASIS	Fall 2022	FRP Improvements – Deliverability	Demonstrate the variability of locational pricing for FRU/FRD. • New: Flex Ramp Requirements Input Uncertain Histogram; FLEX_RAMP_REQ_INP_HSG • New: Flex Ramp Requirement Input - Polynomials; FLEX_RAMP_REQ_INP_POLYNOMIALS • New: Flex Ramp Requirement Threshold; FLEX_RAMP_REQ_THRESH • New: Flexible Ramp Test Result Groups; FLEX_RAMP_TEST_RESULT_GROUP • New: Flexible Ramping Nodal Prices; FLEX_RAMP_NODAL_PRC • New: Flexible Ramping Constraint Shadow Prices; FLEX_RAMP_CNSTR_SHDW_PRC • New: Flexible Ramping Scheduling Constraint Shadow Prices; FLEX_RAMP_SCH_CNSTR_SHDW_PRC • New: Flexible Ramping Forecasts; FLEX_RAMP_FCST • Flexible Ramp Surplus Demand Curve; ENE_FLEX_RAMP_DC	✓ 10/13/22	*12/1/22*	✓ 7/15/22

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2022 - System Interface Changes

System	Release	Project	API Service Name & Major Version, Artifacts	MAP-Stage	Production	Technical Specifications
ADS	2022	Operations Systems Improvements	Ability to "Update/Override existing configuration"	✔ 9/30/22	10/27/22	N/A

ADS	2022	Operations Systems Improvements	Add advance filter & additional color scheme for Commitment Instructions in ADS Instructions Table/Grid
			
			Changes to Instruction Grid:
			- Enable the advance filter in instruction Grid
			- Additional color scheme for commitment instructions:
			   - Startup: Green
			   - Shutdown: Orange
			   - Transition: Yellow
				✔ 9/30/22	10/27/22	N/A

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Flexible ramping product - deliverability

- **Timeline:** 10/11 – 11/11
- **Scenarios :** 10/18 and 10/20

Scenarios document -
https://www.caiso.com/Documents/Market-Simulation-Structured-Scenarios-Flexible-Ramping-Product.pdf

Hybrid resources phase 2B

- **Timeline:** 10/11 – 11/11
- **Scenarios:** 10/27 and 11/01

- Scenarios document – https://www.caiso.com/Documents/MarketSimulationStructuredScenarios-HybridResourcesP2.pdf

Known Issues

- Pending CIDI Tickets
  - OASIS reports not getting FRP data – Pending SME review

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Next Steps

- The next teleconference is scheduled on October 27 at 1400 PDT

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References

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

Market Simulation Issue Management

- Submit all issues to the CIDI case management system
- CIDI tickets must have "**Functional Environment**" = "**Market Simulation Fall 2022**" to be reviewed by ISO SMEs

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Fall 2022 Communication Plan

- ## Schedule

Monday	*Tuesday*	*Thursday*
Aug 22, 29 Sep 12, 19, 26	Sep 26	Aug 18, 25 Sep 01, 08, 15, 22, 29

- ## 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

Structured Scenario Registration Details

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

Date of registration August 12, 2022.

We will do our best to accommodate for late registration

Hybrid Resources Phase 2B: ALFS API Access Provisions

- **User Access Administrators (UAAs) are able to provision access for to these new roles:**

    - **Submits**
        - **AIM > Application: ALFSSOA > Role: SC WRITE EXTERNAL**
    - **Retrieves**
        - **AIM > Application: FDR > Role: SC READ EXTERNAL**

- **References**
    - https://developer.caiso.com
    - Technical Specification
    - Artifacts
        - SubmitSCVERForecast_ALFSv1_AP
        - SubmitSCVERForecast_ALFSv1_DocAttach_AP
        - RetrieveSCVERForecast_FDRv1_AP
        - RetrieveSCVERForecast_FDRv1_DocAttach_AP
    - URLs
        - https://wsmap.caiso.com/sst/runtime.asvc/SubmitSCVERForecast_ALFSv1_AP
        - https://wsmap.caiso.com/sst/runtime.asvc/SubmitSCVERForecast_ALFSv1_DocAttach_AP
        - https://wsmap.caiso.com/sst/runtime.asvc/RetrieveSCVERForecast_FDRv1_AP
        - https://wsmap.caiso.com/sst/runtime.asvc/RetrieveSCVERForecast_FDRv1_DocAttach_AP

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Central Procurement Entity

- **Timeline:** 09/19 - 09/30

- **Structured:** 9/22

- Submit provisioning requests to Production - 10/3

Scenarios Document –

https://www.caiso.com/Documents/Market-Simulation-Structured-Scenarios-Central-Procurement-Entity.pdf

Central Procurement Entity Access Provisions

- Submit provisioning requests to Production - 10/3
- CPE must obtain the services of a certified Scheduling Coordinator (SC)
- SC will need to request a new SCID to represent the CPE and indicate the CPE name in the request
- The new SCID is approved to be setup in master file and a CPE ID is created and assigned for the CPE to be associated to the new SCID
- Contact SCRequests@caiso.com for questions

Hybrid Resources Phase 2B: Unstructured Scenario 1

Scenario Number	Unstructured guided Scenario	
1	Description	Verify submitted hybrid resource data and component level data
	ISO Actions	ISO to dispatch Hybrid resources
	EIM MP Actions	EIM SCs to submit dynamic limits and real-time (RT) forecasts for hybrid resources
	ISO MP Actions	SCs to submit dynamic limits and real-time (RT) forecasts for hybrid resources

	Expected Outcome	Verify Hybrid Resource data in Master File
		
		Verify submission of upper and lower resource limit in Market (Dynamic Limit Tool)
		
		Verify the following in CMRI:
		• Hybrid resource award is within the dynamic limit as submitted by Market Participant
		    • When the LMP is higher than the hybrid resource bid and the resource has ramping capability, hybrid resource award is at the upper dynamic limit MW value, including cases when the upper dynamic limit MW value is greater than the original upper bid limit MW value.
		    • When the LMP is lower than the hybrid resource bid and the resource has ramping capability, hybrid resource award is at the lower dynamic limit MW value, including cases when the lower dynamic limit MW value is lower than the original lower bid limit MW value.
		• Hybrid resource forecast data is published at the VER component level
		
		Verify utilization of ISO forecast of Hybrid Resources in MRI-S Settlements Statement

	Anticipated Settlement Outcome	701
	Expected Settlement Outcome	EIM Participants: Verify Hybrid Resources are assessed a forecast fee. ISO Market Participants Only: Verify Hybrid Resources are fully exempted from RAAIM in Settlements and assessed a forecast fee.

Hybrid Resources Phase 2B: Unstructured Scenario 2

Scenario Number	Unstructured guided Scenario	
2	Description	Verify that VERs behind any given Sub-ACC have their "Follow DOT" flags set equal to 'Y' whenever one of their co-located resources has an AS award/AS base schedule.
	ISO Actions	ISO to normally enforce ACCs and dispatch their resources as per the regular EIM clearing process.
	EIM Market Participant Actions	EIM SCs to submit AS base schedules for non-VER resources behind Sub-ACCs with VERs.
	ISO Market Participant Actions	SCs to submit economical AS bids in the DAM and RTM for non-VER resources behind Sub-ACCs with VERs.
	Expected Outcome	• Verify non-VER resources behind Sub-ACCs with VERs have AS awards/AS base schedules going into RTD. • Verify in Market and ADS that VERs behind a Sub-ACC whose co-located resources have an AS award/AS base schedule have their "Follow DOT" flags set equal to 'Y'. • Verify that the aforementioned logic only applies on a per "Sub-ACC" basis, i.e., if a collocated resource in Sub-ACC**1** has an AS award/base schedule, then VERs in Sub-ACC**2** do not necessarily have their "Follow DOT" flags set equal to 'Y'.
	Anticipated Settlement Outcome	N/A
	Expected Settlement Outcome	N/A

OSI Enhancements – 2022 (ADS)

- 71836: Ability to "Update/Override existing configuration".
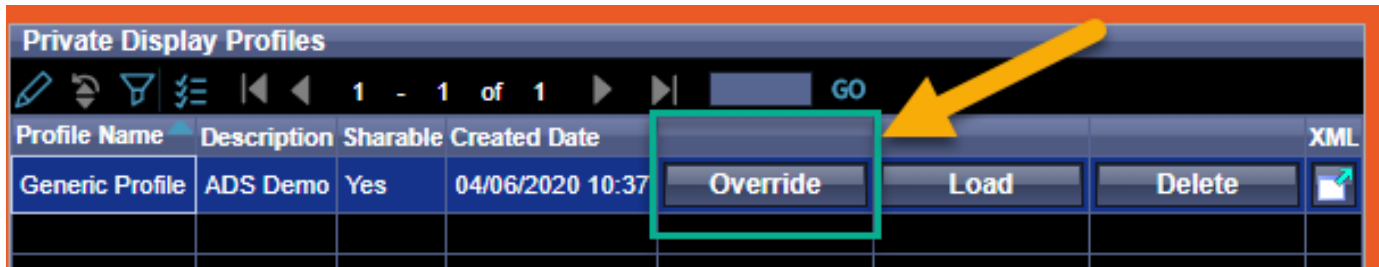
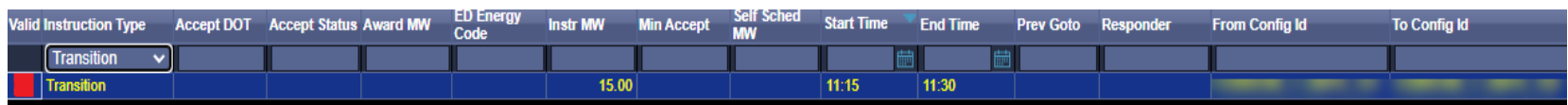# OSI Enhancements – 2022 (ADS)

- 73227: Changes in Instruction:
  - Enable the advance filter in instruction Grid.
  - Additional color scheme for commitment instructions:
    - Startup: Green
    - Shutdown: Orange

    - Transition: Yellow

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Central Procurement Entity: Structured Scenario 1

Scenario Number	Scenario Execution Trade Date: 09/22/22	
1	Description	CPE entity should be able to view their obligation data, submit RA showing, and view their deficiency data.
	ISO Actions	• Upload the reference data (peak obligation, LCR by Tac obligation and flex obligation data) for a month • Upload credit data (peak credit, LCR by tac credit & flex credit data) for a month • Ensure cross validation is running for the generic/flex data for the Month
	EIM Market Participant Actions	N/A
	ISO Market Participant Actions	Participant (CPE) should submit their RA Plan and ensure supplier also submits the corresponding supply plan.
	Expected Outcome	Participant can view and verify their data after subsequent CV plan has been completed in the following screens: • CV Output details screen • Generic Obligation Report • Flex Obligation Report • RA Report
	Anticipated Settlement Outcome	N/A
	Expected Settlement Outcome	N/A

Central Procurement Entity: Structured Scenario 2

Scenario Number	Scenario Execution Trade Date: 09/22/22	
2	Description	Allocation of CPM cost to CPE entity.
	ISO Actions	• Identify the resource and designate CPM and allocate the cost for this resource. • Upload Load Share Ratio for the month specified • Run CPM allocation for the month specified and broadcast data to settlements
	EIM Market Participant Actions	N/A
	ISO Market Participant Actions	N/A
	Expected Outcome	Navigate to CPM allocation screen and verify the allocation data
	Anticipated Settlement Outcome	CPE's SC gets cost allocation.
	Expected Settlement Outcome	Please check CC 7896

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Central Procurement Entity: Unstructured Scenario 3

Scenario Number	Scenario Execution Trade Date: 09/22/22 – 09/30/22	
3	Description	Updated logic for LSEs to display system obligation and LSE credit (CPE credit type) after the deficiency calculation.
	ISO Actions	• Upload the reference data (peak obligation, LCR by Tac obligation and flex obligation data) for a month • Upload credit data (peak credit, LCR by tac credit & flex credit data) for a month • Ensure cross validation is running for the generic/flex data for the month
	EIM Market Participant Actions	N/A
	ISO Market Participant Actions	Participant (CPE) should submit their RA Plan and ensure supplier also submits the corresponding supply plan.
	Expected Outcome	Participant can view and verify their data after subsequent CV plan has been completed in the following screens: • CV Output details screen • Generic Obligation Report • Flex Obligation Report
	Anticipated Settlement Outcome	N/A
	Expected Settlement Outcome	N/A

Reliability Demand Response Resources Bidding Enhancements Phase 2: Structured Scenario 1

Scenario Number	Scenario Execution Trade Date: 10/11/22	
1	Description	Submit Competitive Bids by Discrete RDRRs' SCs
	ISO Actions	CAISO Operators declare EEA2 stage where discrete RDRRs are dispatched
	EIM Market Participant Actions	N/A
	ISO Market Participant Actions	SCs of the discrete RDRRs submit competitive bids.
	Expected Outcome	Follow the results in the sink systems to verify commitment, dispatch, and settlements of discrete RDRRs
	Anticipated Settlement Outcome	N/A
	Expected Settlement Outcome	N/A

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Flexible Ramping Product – Deliverability: Unstructured Scenario 1

Scenario Number	Unstructured guided scenario	
	Description	Demonstrate the variability of locational pricing for FRU/ FRD.
	ISO Actions	N/A
	EIM Market Participant Actions	Market Participants should input economic energy bids to observe results
	ISO Market Participant Actions	N/A
1	Expected Outcome	Verify the results in OASIS
	Anticipated Settlement Outcome	Flex Ramp Prices used in settlements will reflect the new locational pricing for FRD
	Expected Settlement Outcome	CC 7070, CC 7071, CC 7076, CC 7077, CC 7078

Flexible Ramping Product – Deliverability: Structured Scenario 2

Scenario Number	Scenario Execution Trade Date: 10/18/22	
2	Description	Demonstrate the Settlements processing for FRP PASS/FAIL.
	ISO Actions	N/A
	EIM Market Participant Actions	Market Participants should input less that optimal flexible ramping requirements to fail the sufficiency test.
	ISO Market Participant Actions	N/A
	Expected Outcome	FRP Sufficiency test Failed: FRU/FRD is still procured separately for the respective FRU/FRD requirement, but the latter is only reduced by the FRU/FRD demand elasticity in that BAA, without any FRU/FRD credit.
	Anticipated Settlement Outcome	Allocation for both Movement and Uncertainty will be driven by the Pass Group, If a BAA Passes their Sufficiency test, the allocation amount will be a prorated between the BAA over EIM Area (All BAAs that belong to Pass Group). If a BAA Fails their Sufficiency test, the allocation amount will be directly allocated/isolated to the individual BAA.
	Expected Settlement Outcome	CC 7070, CC 7071, CC 7076, CC 7077, CC 7078, PC Flexible Ramp Product

Fall 2022 Market Simulation Settlements Calendar

Fall2022 Market Sim Calendar (MAP STAGE)
Aug 22, 2022 through Oct 28, 2022; Extended TDs thru Nov 11, 2022

Calendar 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	
10-Oct-22		6-Oct				
11-Oct-22			4-Oct	4-Oct	29-Sep	
12-Oct-22	11-Oct				Monthly Recalc 27-Sep - 29-Sep	Daily Recalc 27-Sep; Daily Recalc 29-Sep; Monthly Recalc 27-Sep - 29-Sep
13-Oct-22		11-Oct	6-Oct	6-Oct		
14-Oct-22	13-Oct		Monthly Initial 4-Oct - 6-Oct		4-Oct	Daily Initial 4-Oct; Daily Initial 6-Oct; Monthly Initial 4-Oct - 6-Oct
17-Oct-22	13-Oct					
18-Oct-22			11-Oct	11-Oct	6-Oct	
19-Oct-22	18-Oct				Monthly Recalc 4-Oct - 6-Oct	Daily Recalc 4-Oct; Daily Recalc 6-Oct; Monthly Recalc 4-Oct - 6-Oct
20-Oct-22		18-Oct	13-Oct	13-Oct		
21-Oct-22	20-Oct		Monthly Initial 11-Oct - 13-Oct		11-Oct	Daily Initial 11-Oct; Daily Initial 13-Oct; Monthly Initial 11-Oct - 13-Oct
24-Oct-22		20-Oct				
25-Oct-22			18-Oct	18-Oct	13-Oct	
26-Oct-22	25-Oct				Monthly Recalc 11-Oct - 13-Oct	Daily Recalc 11-Oct; Daily Recalc 13-Oct; Monthly Recalc 11-Oct - 13-Oct
27-Oct-22		25-Oct	20-Oct	20-Oct		
28-Oct-22	27-Oct		Monthly Initial 18-Oct - 20-Oct		18-Oct	Daily Initial 18-Oct; Daily Initial 20-Oct; Monthly Initial 18-Oct - 20-Oct
31-Oct-22		27-Oct				
01-Nov-22			25-Oct	25-Oct	20-Oct	
02-Nov-22					Monthly Recalc 18-Oct - 20-Oct	Daily Recalc 18-Oct; Daily Recalc 20-Oct; Monthly Recalc 18-Oct - 20-Oct
03-Nov-22			27-Oct	27-Oct		
04-Nov-22			Monthly Initial 25-Oct - 27-Oct		25-Oct	Daily Initial 25-Oct; Daily Initial 27-Oct; Monthly Initial 25-Oct - 27-Oct
05-Nov-22						
06-Nov-22						
07-Nov-22						
08-Nov-22					27-Oct	
09-Nov-22					Monthly Recalc 25-Oct - 27-Oct	Daily Recalc 25-Oct; Daily Recalc 27-Oct; Monthly Recalc 25-Oct - 27-Oct

https://www.caiso.com/Documents/MarketSimulationSettlementsCalendar-Fall2022Release.pdf

Reliability demand resource response phase 2

- **Timeline:** 10/11 - 10/28
- **Scenarios :** 10/11- Complete
- EEA2 Stage emergency – 1300-1600 PPT

Scenarios document - https://www.caiso.com/Documents/MarketSimulationStructuredScenarios-ReliabilityDemandResponseResourcesPhase2.pdf