FERC Order 831 – Market Simulation Scenarios Training

Rashele Wiltzius

Customer Readiness Manager

May 18, 2021

Updated 5/18/2021

Agenda

In this training, we will

- Review the FERC 831 initiative and the different phases of the project

- Review the key points of FERC 831 Phase 2

- Discuss the details and timing regarding the FERC 831 market simulation

- Complete an overview of each of the three FERC 831 market simulation scenarios

- Discuss questions we have received from customers on the market sim scenarios and the corresponding answers

- View the new Energy Bid Ceiling table in SIBR

FERC 831 Implementation Timeline

2/17/2021: CAISO files emergency provision with FERC to allow for after-the-fact cost recovery on incremental energy costs above the $1000/MWh bid cap

Split Implementation into Two Phases:

3/20/2021: CAISO implements FERC Order 831 Phase 1 "compliance" provisions

6/15/2021: CAISO plans to implement FERC Order 831 Phase 2 "enhancements" provisions with additional functionality _(this training)_

FERC 831 ENHANCEMENTS (PHASE 2) OVERVIEW

California ISO

FERC 831 Phase 2: Key Points

- Implements various sets of market penalty parameters that will be effective depending on market conditions

- Implements price screening methodology for virtual bids, demand bids, and non-resource-specific system resource (import and export) bids that are more than $1000/MWh
  - Establishes the Maximum Import Bid Price (MIBP)
  - Differentiation between RA and non-RA Non-Resource Specific System Resource Import Bids

View the FERC 831 [presentation](#) and [training video](#) on the CAISO.com Learning Center

MARKET SIMULATION SCENARIOS OVERVIEW

California ISO

Market Simulation Scenarios Overview

- Purpose: showcase FERC 831 Phase 2 functionality (variable energy bid cap depending on certain conditions)

- Two specific conditions that will raise the bid cap above $1000/MWh:

  - There is a cost verified bid submitted above $1000/MWh *(Scenarios 1 & 2)*

  - The maximum import bid price parameter (MIBP) is calculated above $1000/MWh *(Scenario 3)*

    - Note: More about how the MIBP is calculated can be found in the FERC 831 training on the caiso.com learning center

Market Simulation Scenarios Additional Detail

- Goal of scenarios is for market participants to familiarize themselves with the FERC 831 Phase 2 functionality that will be implemented in mid-June

- Structured market simulation for FERC 831 will occur **May 25th – June 9th**

- CAISO will set up data in the Map Stage environment in order for conditions to be met so participants can observe how bids above $1000/MWh will be treated for different resource types

- This market sim will be for both the day-ahead market and the real-time market

California ISO

FERC 831 Market Sim Scenarios Location

FERC 831 Market Simulation Scenarios can be found on the [Release Planning page](#) on CAISO.com

Energy storage and distributed energy resources

FERC Order 831 - Import bidding and market parameters

Flexible ramping product refinements

Hybrid resources

Market enhancements for summer 2021 readiness

Real-time settlement review

Resource adequacy enhancements

Variable operations and maintenance cost review

⊕ Western EIM NorthWestern Energy
⊕ Western EIM Public Service Company of New Mexico
⊕ Western EIM Turlock Irrigation District

Summer 2021
📄 Market Simulation Plan - Summer 2021 Release
📄 Market Simulation Settlements Calendar - Summer .... e   4/30/2021 10:31
⊕ Summer 2021 release market simulation communic
⊕ Draft settlement technical documents
⊖ FERC order 831 - pricing parameters, import bid .... alidation
  🌐 Video - FERC Order 831 Import Bidding Marke ...ers - Apr 28, 2021
  📄 Presentation - FERC Order 831 Import Bidding M..ket Parameters - Apr 28, 2021
  📄 Market Simulation Structured Scenarios - FERC order 831   4/13/2021 15:17
  📄 Business Requirements Specification v1.2 - FERC 831 Import Bidding and Market Parameters   4/01/2021 13:39
⊕ Master File documents
⊕ Resource adequacy enhancements track 1
⊕ Summer 2021 readiness

California ISO

FERC 831 Market Sim Scenario #1

FERC 831 Market Sim Scenario #1 Overview

- Submitting a *manual* reference level change request in CIDI that results in a cost-verified energy bid above $1000/MWh

    - Reminder: manual reference level requests apply for all hours of the trading day

- Manual reference level change request process was implemented as part of the [CCDEBE initiative](#)

    - You can find more about how to submit a manual reference level change request on the CAISO.com [Learning Center](#) or in the Market Instruments BPM Attachment O.1.3

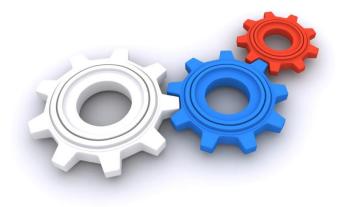# FERC 831 Market Sim Scenario #1 Process

1. **Submit manual reference level change request via CIDI ticket before 8am**

   – This step is <u>optional</u> during market simulation

   – You can submit a ticket in CIDI and the CAISO team will process for market sim

     • Please note: "For FERC 831 Market Simulation, Non-Production" in the subject line and select the Map Stage environment.

2. **Once approved, revised DEB will be used in CAISO systems the new value will be listed in the CMRI Default Energy Bid Curves report**

California ISO

3. **You can now submit energy bids and make bid adjustments up to the revised DEB value in SIBR for all hours of the DAM and RTM trading day**

4. **Validate settlement statements with applicable energy costs**

   – May take up to a week to receive settlement statement

Market Sim Scenario #1 Questions - #1

Is necessary for SCs to submit additional energy bids in SIBR if they are already submitting the manual request via CIDI Ticket portal?

Yes, this allows SCs to fully test this scenario and observe how resource-specific resource bids are handled in SIBR after a manual request is submitted. Generally, the SC is responsible for submitting bids even after the CAISO processes a manual request.

California ISO

What resources will be used to test the FERC 831 functionality?

The CAISO plans to submit a manual request for at least one resource-specific generating resource as a baseline for a cost verified bid. The specific resource will be one from an SCID that is not participating in the market simulation.

California ISO

Questions

FERC 831 Market Sim Scenario #2

FERC 831 Market Sim Scenario #2 Overview

- **Submitting a bid above $1000/MWh via an *automated* reference level change request in SIBR**
  - Reminder: automated reference level requests only apply to specific hour(s)

Scenario Number	Scenario Execution Trade Date: TBD	
	Description	Testing with Automated Reference Level Change Request as the cost-verified bid above $1,000/MWh
	ISO Actions	CAISO will upload high natural gas prices and set some parameters for non-gas resources to set Reasonableness Threshold DEBs at $2000. CAISO may also need to submit some automated adjustments in SIBR if none submitted by market participants. CAISO will indicate to participants when they can start submitting bids to test the functionality in SIBR and for which hours, based on when the systems process the high-price inputs.
	EIM Market	S...

FERC 831 Market Sim Scenario #2 Process

1. **Go into SIBR and complete an automated adjustment to increase DEB above $1000MWh**

    –   CAISO will upload high prices to set parameters up

    –   Use the Energy Adjustment functionality in the SIBR UI

2. **Submit energy bid above $1000/MWh**

3. **Validate settlement statements with applicable energy costs**

    –   May take up to a week to receive settlement statement

California ISO

Market Sim Scenario #2 Questions - #1

At what price will the CAISO upload the natural gas prices as mentioned in the ISO actions of scenario 2? And is this for the Day-Ahead or Real-Time market?

The goal here is to upload a gas price that is sufficiently high enough to raise Reasonableness Threshold DEBs to $2000. With an approximate unit heat rate of 10 MMBtu/MWh, the price would have to be around or above $200/MMBtu. The CAISO plans to run this scenario for both DAM and RTM.

California ISO

Market Sim Scenario #2 Questions - #2

Can CAISO provide the Trade Date and trading hour ahead of time so the SCs can be more prepared to test this functionality? Is it possible for the SC to submit bids for all hours when testing scenario 2?

The CAISO will set up conditions for this scenario for more than one hour (see slide #32 for specifics). Also, we'd prefer that SCs limit the number of hours they submit cost-verified bids above $1000/MWh because it will reduce the opportunities for other SCs to test this functionality

California ISO

Questions

California ISO

FERC 831 Market Sim Scenario #3
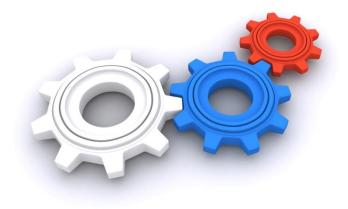
FERC 831 Market Sim Scenario #3 Overview

- CAISO will set conditions so that MIBP will be above $1000/MWh for a specified set of hours
  - Other conditions will be limited (i.e. no other cost verified bids above $1000/MWh) so just this scenario can be tested

Scenario Number	Scenario Execution Trade Date: TBD	
	Description	Testing with Maximum Import Bid Price greater than $1,000/MWh
	ISO Actions	CAISO will set the MIBP at $2000 for some hours for DAM ; CAISO will set the MIBP at $2000 for some hours for RTM . CAISO will ensure that no other conditions are set to allow any cost-verified bids > $1000 to isolate conditions. CAISO will indicate to participants when they can start submitting bids to test functionality in SIBR, based on when the MIBP calculation is processed.

California ISO

FERC 831 Market Sim Scenario #3 Process

1. **Submit energy bid in SIBR above $1000/MWh**

2. **Validate settlement statements with applicable energy costs**

   1. May take up to a week to receive settlement statement

Market Sim Scenario #2 Questions - #1

Will the CAISO publish the on-peak index values for both the DAM and RT that it captures to use to calculate the MIBP for each market?

Due to contractual limitations with the vendor, the CAISO is unable to post the index values used in the MIBP calculation.

California ISO

How many hours will the CAISO set the MIBP at $2000/MWh during market sim for both DAM and RTM?

The CAISO will set up conditions for this scenario for more than one hour (see slide #32 for specifics).

Market Sim Scenario #2 Questions - #3

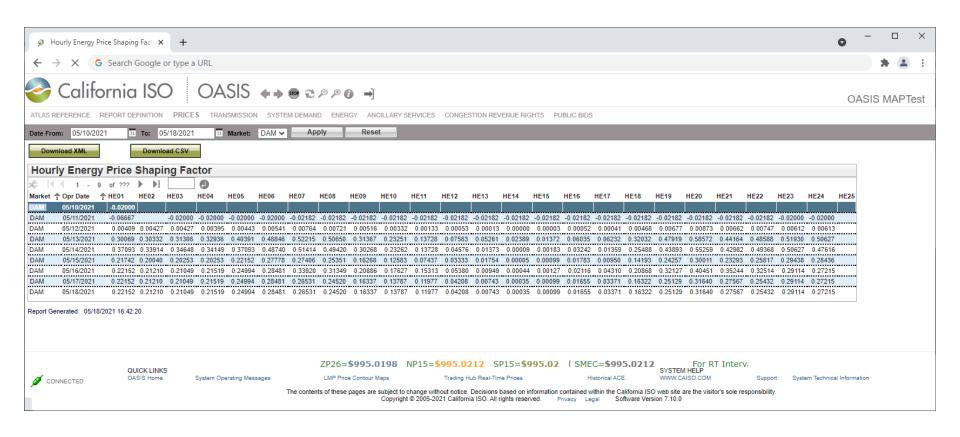**Will the CAISO publish the calculated MIBP for each hour or only the shaping factor?**

As mentioned previously, the CAISO is unable to post the MIBP publically. However, the shaping factor will be posted on OASIS. This report, combined with a data subscription to the index vendor (Intercontinental Exchange, or ICE), should allow participants to construct a close approximation of the MIBP calculated by the CAISO.

California ISO

Market Sim Scenario #2 Questions - #4

If CAISO will be publishing an OASIS report showing the shaping factor for each trade date, when will that be published relative to each operating day?
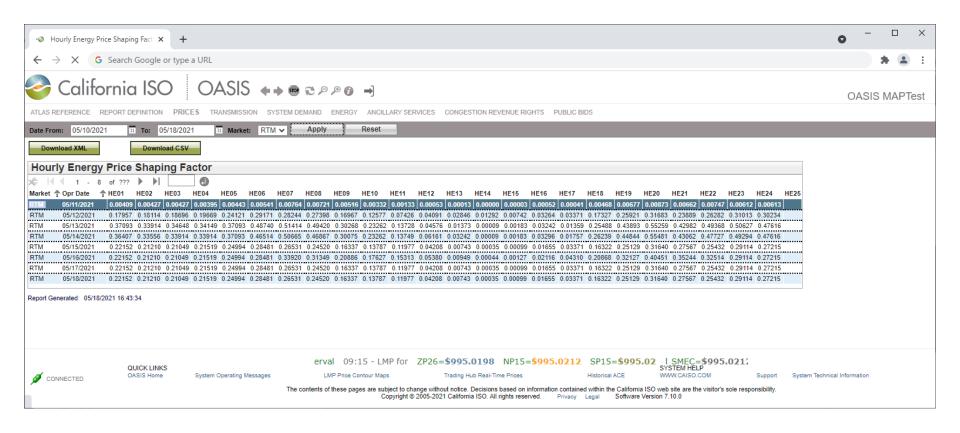
The CAISO expects to publish the shaping factor report on OASIS by approximately 9AM for the DAM shaping factor, and by approximately 10PM for the RTM shaping factor.
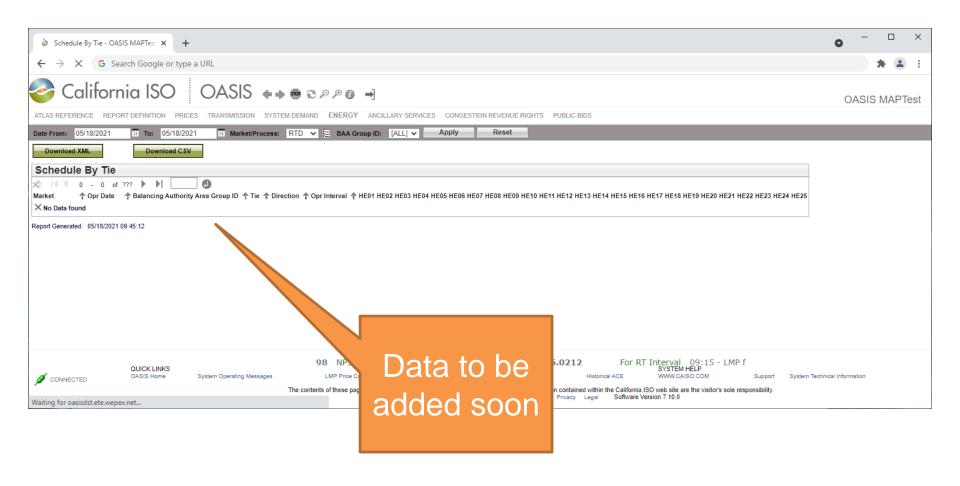
DAM Hourly Energy Price Shaping Report - OASIS

RTM Hourly Energy Price Shaping Report - OASIS

Schedule by Tie Report- OASIS

Data to be added soon

Questions

Additional Information and Questions

Market Sim Scenarios Timing

- **Question: How will I know which hours I can submit bids over $1000/MWh during market sim?**
  - Scenario 1: all hours for DAM and RTM
  - Scenario 2: HE14-15 for DAM, 14-15 + 19-20 for RTM
  - Scenario 3: HE19-20 for DAM, 19-20 + 21-22 for RTM

- **Question: Can CAISO provide the trade dates on which each scenario needs to be tested?**
  - Scenario 1: TD 5/25, DAM and RTM
  - Scenario 2: TD 5/26, DAM and RTM
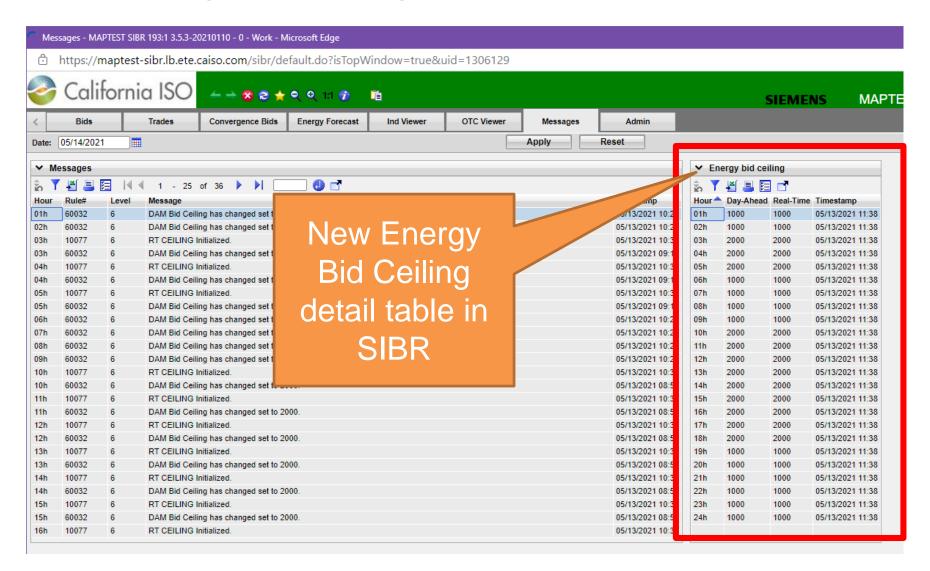 - Scenario 3: TD 5/27, DAM and RTM

Additional Questions - #1

Will the CAISO publish the hours in which a Resource Specific Resource has submitted a bid above $1,000/MWh and that bid has been cost-verified in either/both the DA and RT? If so, when?
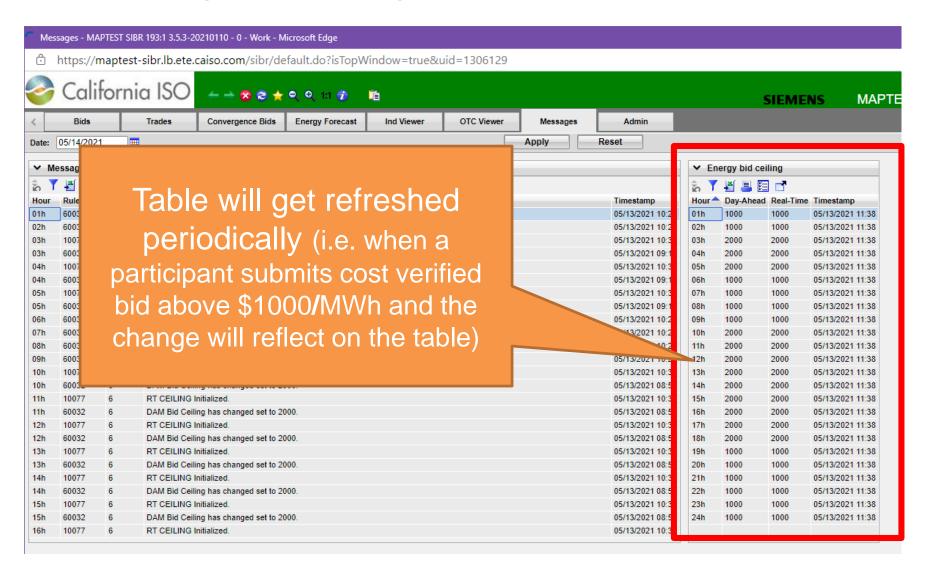
No, the CAISO is not currently planning to publish this. However, SCs will be able to determine in which specific hours the variable price ceiling has been raised to $2000/MWh as a new tabular report that will list the bid ceiling value for all hours of the trade date and market.

California ISO

SIBR Energy Bid Ceiling Table

New Energy Bid Ceiling detail table in SIBR

SIBR Energy Bid Ceiling Table

Table will get refreshed periodically (i.e. when a participant submits cost verified bid above $1000/MWh and the change will reflect on the table)

Additional Questions - #2

Will the CAISO be publishing the daily penalty parameter value in a separate report?

No, the CAISO is not currently planning to publish the daily penalty parameter values. The DAM will run with the $2000/MWh penalty prices whenever the SIBR DA variable ceiling price is $2000/MWh for any hour in that day. The RTM will run with the $2000/MWh penalty price whenever an hour in the market time horizon had a $2000/MWh variable ceiling price in that SIBR real-time hourly market.

Final Questions

California ISO

Please take time to fill out our training evaluation!

For more detailed information on anything presented or to view these materials, please visit the help page of the EIM Portal.

Or send an email to:
CustomerReadiness@caiso.com

Acronyms

Abbreviation	Definition
BAA	Balancing Authority Area
BPM	Business Practice Manual
BRS	Business Requirements Specification
CAISO	California Independent System Operator
CCDEBE	Commitment Costs and Default Energy Bid Enhancements
CIDI	Customer Inquiry, Dispute, and Information System
DAM	Day-Ahead Market
DEB	Default Energy Bid
EIM	Energy Imbalance Market
FERC	Federal Energy Regulatory Commission
IFM	Integrated Forward Market
MIBP	Maximum Import Bid Price

California ISO

Acronyms

Abbreviation	Definition
MLC	Minimum Load Cost
NGR	Non-Generating Resource
NRS	Non-Resource Specific
Pmin	Minimum Load
RA	Resource Adequacy
RSR	Resource Specific Resource
RUC	Residual Unit Commitment
SC	Scheduling Coordinator
SIBR	Scheduling Infrastructure and Business Rules Application
SMEC	System Marginal Cost of Energy
RTM	Real-Time Market

California ISO