



Flexible Ramping Product Refinements: Buffer & Min

Training Session: Market Simulation Readiness
September 28, 2020

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Customer Readiness

Agenda

- Background
- Scope of changes
- Market simulation activities



FRP Refinements: Buffer & Min

DEFINITIONS

Definitions

Acronym	Term
BAA	Balancing Authority Area
BPM	Business Practice Manual
BRS	Business Requirements Specification
CAISO	California Independent System Operator
EIM	Energy Imbalance Market
FMM	Fifteen Minute Market
FRP	Flexible Ramping Product
PDR	Proxy Demand Resource
RTD	Real Time Dispatch
RTPD	Real Time Pre-Dispatch

FRP Refinements: Buffer & Min

BACKGROUND

Flexible Ramping Product: Background

- The flexible ramping product was introduced into the real-time market to manage ramp capability to address uncertainty related to load and variable energy resources that materializes between market runs.
- Prior to implementation, the ISO observed that the multi-interval market optimization would solve forecasted net load by utilizing the precise amount of ramp needed across the market horizon. However, when system conditions changed in subsequent market runs, the market would have insufficient ramping capability in the real-time dispatch.

Purpose of FRP Refinements Initiative

- Improvements are needed for addressing the flexible ramping product issues identified in the [CAISO Energy Markets Price Performance Report](#) published on September 23, 2019.
- The flexible ramping product secures additional ramping capability that can be dispatched in subsequent market runs to cover a range in the forecasted net load. Resources providing this ramping capability are compensated at the marginal opportunity cost for both forecasted movement and uncertainty awards.

FRP Refinements: Independent 2020 Implementation

- Scope 1 (Buffer)
 - To maintain up to 100% (configurable) of FRP awards in the buffer interval that were procured in the prior Fifteen Minute Market (FMM) to preserve ramping capability for the Real Time Dispatch (RTD).
- Scope 3 (Min)
 - To enforce a minimum FRP requirement in the Balancing Authority Area (BAA) that will ensure a minimum amount of FRP to be procured from resources within the BAA.

FRP Refinements: 2021 Implementation

- Scope 2 (2021)
 - Changing Proxy Demand Resource (PDR) dispatch capability default from five minute to hourly.

Market Simulation

READINESS ACTIVITIES

FRP Refinements – Buffer & Min: Milestones

Date	Milestone
September 29 – October 14, 2020	Market Simulation
November 4, 2020	Production Activation

Market Simulation Activities

- Market simulation structured scenarios provide customers with the ability to preview and test new functionality before it is implemented in the production environment.
- The changes being made for this initiative are internal changes to the market logic.
- After implementation in production, market participants may see a change in the pattern of what they are awarded as FRP capacity.

Market Simulation Activities

Structured Scenario	
Scenario #1	Demonstrate the minimum requirement to be enforced for each EIM area
Description	Demonstrate that there is an increase in the procurement of the minimum requirement and is reported
Expected System Outcome	Minimum requirement calculated leading to increase procurement for each BAA
Anticipated Settlement Outcome	N/A – No settlement impacts

Market Simulation Activities

Structured Scenario	
Scenario #2	Demonstrate the flow of awards related to the buffer interval for each EIM area
Description	Demonstrate and report the energy binding schedule with room for flex ramp awarded
Expected System Outcome	Binding energy schedules preserve FRP awards from previous RTPD run
Anticipated Settlement Outcome	N/A

Market Simulation Activities

Structured Scenario	
Scenario #3	Demonstrate the flow of awards related to the buffer interval for each ISO area
Description	Demonstrate and report the energy binding schedule with room for flex ramp awarded
Expected System Outcome	Binding energy schedules preserve FRP awards from previous RTPD run
Anticipated Settlement Outcome	N/A

Market Simulation Activities

Structured Scenario	
Scenario #4	Demonstrate the minimum requirement to be enforced for each ISO area
Description	Demonstrate that there is an increase in the procurement of the minimum requirement and is reported
Expected System Outcome	Minimum requirement calculated leading to increase procurement for each BAA
Anticipated Settlement Outcome	N/A

Setup for Market Simulation Activities

- Complete additional setup for structured scenarios by the dates listed below.
- EIM participants should submit requests to participate in this simulation via the MarketSim@caiso.com mailbox by September 29, 2020.

Market Simulation Activities

- Link to market sim structured scenarios included in the resource section.
- Users must be provisioned for access in order to participate in market simulation.
- Attend the market simulation calls to stay informed on the timing of activities for this and other Fall and Independent 2020 release initiatives.

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RESOURCES

Resources: Stakeholder Initiatives

Information for this effort can be found under **Stakeholder Initiatives** located on caiso.com with the following resources:

- Draft Final Proposal
- Presentations
- Video of Presentations

Home> Stay Informed> Stakeholder Initiatives> Flexible Ramping Product Refinements

<https://stakeholdercenter.caiso.com/StakeholderInitiatives/Flexible-ramping-product-refinements>

Resources: Release Planning Page

Implementation information for this initiative can be found under the **Independent 2020 Releases** located on caiso.com with the following resources:

- Business Requirements Specification (BRS)
- Market Simulation Scenarios

Home> Stay Informed> Release Planning> Independent 2020>
Flexible Ramping Product Refinements – Implementation
<http://www.caiso.com/informed/Pages/ReleasePlanning/Default.aspx>

Questions?



Thank you for your participation!

For more detailed information on anything presented, please
visit our website at:

www.caiso.com

Or send an email to:
CustomerReadiness@caiso.com