

Business Requirements Specification

FRP Improvements [Buffer & Min]

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Disclaimer

Disclaimer

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Revision History

Date	Version	Description
5/20/2020	1.0	Initial Document release
5/27/2020	1.1	Revised Version - Made changes regarding the implementation dates reflecting the Revised Straw Proposal

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1 Introduction

1.1 Purpose

The flexible ramping product was introduced in to 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.

Improvements are needed for addressing the flexible ramping product issues identified in the CAISO Energy Markets Price Performance report. 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.

1.2 References

Information related to this FRP [Buffer & Min] can be found on the following CAISO web page at:

<http://www.caiso.com/StakeholderProcesses/Flexible-ramping-product-refinements>

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2 Intellectual Property Ownership

Intellectual Property covers a broad array of information and materials, including written works, computer programs, software, business manuals, processes, symbols, logos and other work products. Determining ownership of Intellectual Property is very important in preserving the rights of the California ISO, and helps to avoid Intellectual Property infringement issues. In considering the business requirements or service requirements to be performed, the business owner of the project must determine Intellectual Property Ownership.

2.1 Guidelines

Intellectual Property ownership must be considered by all applicable stakeholders before the services are performed. The level of analysis is two-fold:

- One, the business owner must determine if the Intellectual Property necessary to perform the services is owned by the California ISO or whether it must be obtained from a third party. Once the California ISO has secured the proper Intellectual Property rights to perform the services (i.e., the Intellectual Property is owned by the California ISO or we have licensed it from a third party), the California ISO can undertake the next step.
- The second step in the analysis is to consider whether new Intellectual Property will be created as a result of the business requirements or service requirements to be performed, and how that Intellectual Property will be owned and protected by the California ISO.

In order to assist the business owner in the analysis previously described, refer to the California Intellectual Property Policy available at:

<http://www.caiso.com/rules/Pages/LegalPoliciesNotices/Default.aspx>, which provides a brief tutorial on what Intellectual Property is and how the California ISO can protect its Intellectual Property. Contact the Legal Department if you have any questions regarding Intellectual Property.

There are no impacts to intellectual property based on the requirements stated in this document.

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3 Details of Business Need/Problem

3.1 Description

Business Opportunity/Problem Statement:	
What:	<p>The scope behind this policy and project include:</p> <p>Scope 1: 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).</p> <p>Scope 2: Changing Proxy Demand Response (PDR) dispatch capability default from 5 minute to hourly.</p> <p>Scope 3: 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.</p>
When:	<p>Fall 2020 for Scope 1</p> <p>Fall 2021 for Scope 2</p> <p>Fall 2020 for Scope 3</p>
Why do we have this opportunity/problem:	<p>The flexible ramping product was introduced in to the real-time market to manage ramp capability to address uncertainty related to load and variable energy resources that materializes between market runs.</p> <p>Based on feedback from EIM market participants, the FRP uncertainty requirement is not always consistent with the real-time market conditions based on issues identified. This outcome may result in too little or too much Flex Ramping Product being procured in the markets.</p>

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4 Business Impacts

4.1 Business Practice Manual (BPM)

Fall 2020 Release-

Scope 1: To maintain 100% of FRP awards in the buffer interval that were procured in the prior FMM to preserve ramping capability for the RTD Minimum CAISO FRP requirement

Fall 2021 Release-

Scope 2: Changing PDR dispatch capability default from 5 minute to hourly

Fall 2020 Release-

Scope 3: 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

BPM	Description of Impact(s)
Market Operations	Yes <ul style="list-style-type: none"> Section 7.3.1.1 FRP Features to include the statement. (This is applicable to Scope 1)
Market Instruments	Yes (This is applicable to Scope 2) <ul style="list-style-type: none"> Section B.2.1 Resource tab- Modifiable data under RDT Column name- BID_DISP_OPT requires statements reflecting the change of PDR dispatch capability default from 5 minutes to 60 minutes.
BPM Change Management	No
Candidate CRR Holder Registration	No
Compliance Monitoring	No
Congestion Revenue Rights	No
Credit Management and Market Clearing	No
Definitions & Acronyms	No
Demand Response	Yes (This is applicable to Scope 2) <ul style="list-style-type: none"> Section 8 (Generation Data Template Submission and processing) will need to be

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BPM	Description of Impact(s)
	updated reflecting the change of PDR dispatch capability default from 5 minutes to 60 minutes.
Direct Telemetry	No
Distributed Generation for Deliverability	No
Energy Imbalance Market (EIM)	No
Generator Interconnection and Deliverability Allocation Procedures	No
Generator Interconnection Procedure (GIP)	No
Generator Management	No
Managing Full Network Model	No
Metering	No
Outage Management	No
Reliability Coordinator Services	No
Reliability Requirements	No
Rules of Conduct Administration	No
Scheduling Coordinator Certification and Termination	No
Settlements and Billing	No
Transmission Planning Process	No

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4.2 Other

Impact:	Description:
Market Simulation	<ul style="list-style-type: none"> ➤ Scope 1 & Scope 2- No ➤ Scope 3 Potential Impacts based on solution.
Market Participant Impact	Yes
External Training	Yes
Policy Initiative	Yes
Vendor	Siemens

4.3 Acronyms

Acronym	Definition
FRP	Flexible Ramping Product
RTD	Real Time Dispatch
PDR	Proxy Demand Response
BAA	Balancing Area Authority
FMM	Fifteen Minute Market

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5 Business Requirements

The sections below describe the Business processes and the associated business requirements involved in the project. These may represent high-level functional, non-functional, reporting, and/or infrastructure requirements. These business requirements directly relate to the high-level scope items determined for the project.

5.1 Business Process: Manage Market & Reliability Data & Modelling (MMR)

5.1.1 Business Requirements

ID#	Business Feature	Requirement Type	Potential Application(s) Impacted
FRPE-BRQ001	The ISO shall set the bid dispatchable option for Proxy Demand resource to hourly in the master file.	Business process	N/A

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5.2 Business Process: Manage Real Time Hourly Market (RTPD)

5.2.1 Business Requirements

ID#	Business Feature	Requirement Type	Potential Application(s) Impacted
FRPE-BRQ002	Flex ramp procured in the binding interval will be protected for the buffer requirement with a penalty price so that the awarded capacity is not dispatched.	Core	RTPD
FRPE-BRQ003	If a resource is committed due to the binding interval flex capacity and that commitment in the advisory interval is not a binding commitment that commitment will become binding.	Core	RTPD
FRPE-BRQ004	The buffer interval penalty price for FRP will be configurable with a default value of \$247.	Core	RTPD
FRPE-BRQ005	There will be a configurable percentage for the FRP award reservation from the buffer interval to the binding interval. The default value will be 100%.	Core	RTPD
FRPE-BRQ006	The feature to enforce a minimum requirement will have a flag for enabling and disabling the feature. Note- This flag will be a global flag for every market type.	Core	RTPD, RTD & STUC
FRPE-BRQ007	A minimum flex ramp requirement will be enforced for BAA's whose flex ramp requirement is greater than or equal to the configurable percentage when compared with the EIM area requirement, default value of 60%.	Core	RTPD, RTD & STUC

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ID#	Business Feature	Requirement Type	Potential Application(s) Impacted
FRPE-BRQ008	<p>For the area or areas that a minimum requirement is enforced, this requirement will be calculated as follows:</p> <p style="padding-left: 40px;">(Diversity Factor) * (BAA Area Requirement)</p> <p>Where Diversity Factor = (Original EIM Area Requirement) / Σ(Original BAA Requirement of all BAAs in the EIM Area)</p>	Core	RTPD, RTD & STUC

5.3 Business Process: Business Process: Market/Business Simulation

5.3.1 Business Requirements

This section shall provide a basis for the development of the Market/Business Simulation Scenarios. These requirements will provide guidance on the market participant impacts, inputs into the Scenarios, endpoints to the Scenarios and reasons for potential Scenarios. The guidance on market participant impacts shall be gathered from the requirements that impact rules, interfaces, applications/reports, new system processes, new/modified data models and new user roles. The source and sink systems shall be determined through the development of the system context diagram and the web service requirements. The Reason for the Potential Scenario column will be to offer guidance regarding what potential Scenarios, and their context, may be needed for this project. This section applies to all policy development projects, market enhancements, technology enhancements, operation enhancements, Energy Imbalance Market (EIM) implementations and Reliability Coordination (RC) service implementations.

In the Reason for Potential Scenario column, the Business Analyst must select one or more of the following reasons:

- 1. Rule Impacts:** Generalized changes in market rules, bidding rules, settlements rules, market design changes, or other business rules.

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2. **Interface changes:** Changes that impact templates (e.g. the Resource Adequacy {RA} supply plan), user interface (UI), and application programming interface (API) (e.g. retrievals of new shadow settlement data).
3. **New application/report:** Changes that cause addition/modification of market software or reports, especially when market data input is required by the market participant.
4. **New system process:** Modification of data flow in systems, especially if the new process requires the market participant to demonstrate proficiency prior to production.
5. **New/Modified model data:** Addition or substantial modification of model data as a market solution provided by the ISO.
6. **New user role:** The addition or modification of access permissions for a user role applied to specific business units within an EIM entity or market participant organization (e.g. Load Serving Entity (LSE) as a Local Regulatory Authority (LRA) role). Scenarios are beneficial for market participants taking on a new function or process within their organization.

5.3.1 Business Requirements

ID#	Guidance on Market Participant Impacts	Source System	Sink System	Reason for Potential Scenario
FRPE-BRQ009	Demonstrate the minimum requirement to be enforced for each EIM area	Internal System	RTPD	1. Rule Impacts
FRPE-BRQ010	Demonstrate the flow of awards for any EIM area with regards to the buffer interval.	Internal System	RTPD	1. Rule Impacts