



# Business Requirements Specification

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## EIM 2021 Enhancements Phase 1


Document Version: 1

Current Version Date: 2/16/2021

 <b>California ISO</b>	<b>Technology</b>	<b>Template Version:</b>	<b>5.2</b>
		<b>Document Version:</b>	<b>1</b>
<b>EIM 2021 Enhancements Phase 1 Business Requirements Specification - Planning</b>		<b>Date Created:</b>	<b>1/26/2021</b>

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# Disclaimer

## *Disclaimer*

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# 1 Introduction

## 1.1 Purpose

Energy Imbalance Market Enhancements projects collectively address important issues identified by EIM market participants through Customer Inquiry, Dispute and Information system (CIDI) requests to improve the visibility, functions and features in Energy Imbalance Market (EIM).

Different from previous years, there will be five entities (BANC, LADWP, NWMT, TID, PNM) that will join EIM in 2021, and six entities (BPA, Avista, Tacoma, Avangrid, Tucson, PSCo) in 2022. There are a number of EIM enhancement projects to address special requests for integrating these entities in EIM. Among them, enhancements for BANC2, LADWP, BPA, Avangrid, PSCo, each have separate projects and Business requirements. In addition, a few policy initiatives through stakeholder process also form a few separate projects (FRP Refinement, RT settlement Review, Base Schedule submission deadline, Pseudo-ties of shared resource, EIM Sub-entity SC role). Through these projects, ISO will provide significant new functions for the EIM market. Limited by the resources internally and externally, the ISO management determined to start with two EIM enhancement CIDI requests for Spring 2021, and an additional two CIDI requests combined with the delayed EIM 2020 items for Fall 2021 as the scope of EIM enhancement 2021. The additional identified crucial enhancements will be managed through change requests.

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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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## 2.2 Acronyms and Definitions Table

Acronym	Definition
API	Application Program Interface
AUX	Auxiliary Load
BAA	Balancing Authority Area
BAAOP	Balancing Authority Area Operations Portal
BS	Base Schedule
BSC	Base Scheduling Coordinator
CAISO	California Independent System Operator
CIDI	Customer Inquiry, Dispute and Information System
DOT	Dispatch Operating Target
EIM	Energy Imbalance Market
ETSR	Energy Transfer System Resource
HASP	Hour Ahead Scheduling Process
ISL	Interchange Scheduling Limit
ITC	Intertie Transmission Constraint
MSG	Multi-Stage Generating Resources
Pmin	Power Minimum
RSE	Resource Sufficiency Evaluations
RTD	Real-Time Dispatch
RTM	Real-Time Market
RTPD	Real-Time Pre-Dispatch
RTUC	Real-Time Unit Commitment
SC	Scheduling Coordinator
STUC	Short-Term Unit Commitment
TEE	Total Expected Energy
T-30	Thirty Minutes Prior to Operating Hour

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T-40	Forty Minutes Prior to Operating Hour
UI	User Interface
UIE	Uninstructed Imbalance Energy

## 3 Details of Business Need/Problem


### 3.1 Description

Business Opportunity/Problem Statement:	
<b>What:</b>	Two CIDI requests are deemed to support NorthWestern Energy (NWMT) EIM integration
<b>When:</b>	Spring 2021
<b>Why do we have this opportunity/problem:</b>	EIM market participants through Customer Inquiry, and Dispute and Information system (CIDI) request to improve visibility, functions, and features in the Energy Imbalance Market (EIM).
<b>Who does this opportunity/problem impact:</b>	Market Participants, PSTO, PSTD, Market Operations, ITPD, Customer Service

## 4 Business Impacts

### 4.1 Business Practice Manual (BPM)

BPM	Description of Impact(s)
<b>Managing Full Network Model</b>	Not Impacted
<b>Congestion Revenue Rights</b>	Not Impacted
<b>Market Instruments</b>	Additional tables


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<b>BPM</b>	<b>Description of Impact(s)</b>
<b>Outage Management</b>	Not Impacted
<b>Reliability Requirement</b>	Not Impacted
<b>Market Operations</b>	Not Impacted
<b>Compliance Monitoring</b>	Not Impacted
<b>Metering</b>	Not Impacted
<b>Scheduling Coordinator Certification &amp; Termination</b>	Not Impacted
<b>Rules of Conduct Administration</b>	Not Impacted
<b>BPM Change Management</b>	Not Impacted
<b>Definitions &amp; Acronyms</b>	Not Impacted
<b>Settlements &amp; Billing</b>	Not Impacted
<b>Credit Management</b>	Not Impacted
<b>Candidate CRR Holder</b>	Not Impacted
<b>Transmission Planning Process</b>	Not Impacted
<b>Direct Telemetry</b>	Not Impacted
<b>Distributed Generation for Deliverability</b>	Not Impacted
<b>Energy Imbalance Market (EIM)</b>	Not Impacted
<b>Generator Interconnection Procedure (GIP)</b>	Not Impacted
<b>Generator Interconnection and Deliverability Allocation Procedures</b>	Not Impacted
<b>Generator Management</b>	Not Impacted
<b>Managing Full Network Model</b>	Not Impacted


## 4.2 Other

<b>Impact:</b>	<b>Description: (optional)</b>
<b>Market Simulation</b>	Yes
<b>Market Participant Impact</b>	Yes
<b>User Acceptance Testing (UAT)</b>	Yes



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Impact:	Description: (optional)
<b>Internal Training</b>	Yes
<b>External Training</b>	Yes
<b>Policy Initiative</b>	No
<b>Vendor</b>	Yes
<b>Architectural Framework and Roadmap</b>	Design will follow existing architectural framework and will align with the roadmap.

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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 Energy Imbalance Markets - Data Sharing

Add New ITC detail display in BAAOP and each ITC have a sub-table displaying each associated ETSR resources

Allow for ITC/ETSR data sharing between EIM entities

#### 5.1.1 Business Requirements: Master File

ID#	Business Feature	Req. Type	Potential App(s) Impacted
EIM21-BRQ-100	<b>Define ITC/ISL association with EIM entities SC</b> <ul style="list-style-type: none"> <li>• For the EIM entities that share the same path, if ITC or ISL owner primary EIM entity SC authorize <ul style="list-style-type: none"> <li>○ Associate the other EIM entity SC with ITC</li> </ul> </li> <li>• Pass to downstream systems</li> </ul>	Core Phase 1	MF


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### 5.1.2 Business Requirements BAAOP Enhancements


ID#	Business Feature	Requirement Type	Potential Application(s) Impacted
EIM21-BRQ-110	<p><b>Allow the EIM Entity and RTMO read-only associated ITC and associated ETSR in designated UI in BAAOP</b></p> <ul style="list-style-type: none"> <li>• Receive association ITC with EIM entities</li> <li>• Receive association ETSR with ITC</li> <li>• Allow the associated EIM entities with the ITC to view the ITC and all the ETSRs in a new designated UI</li> <li>• Allow EIM entities read-only access to new designated UI, no edit function is available in this designated UI</li> <li>• The designated UI shall have other standard UI function: filter, export, print</li> <li>• The EIM entity shall be limited to only view the associated ITC defined in the MF and associated ETSR in this designated UI.</li> <li>• The Real Time Market Operator (RTMO) shall have the view of all EIM ITCs and associated ETSR</li> </ul>	Core <b>Phase 1</b>	BAAOP, Internal

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ID#	Business Feature	Requirement Type	Potential Application(s) Impacted
EIM21-BRQ-112	<p><b>In the designated read-only UI, build display for ITC and sub-table for associated resources schedule in RTPD and RTD market horizon</b></p> <ul style="list-style-type: none"> <li>• Add New designated display UI for ITC detail display in BAAOP, a table of hourly limits of all internal BAA ITCs and shared ITCs which should include the ITC name, import limit, export limit.</li> <li>• Each ITC should have a sub-table displaying schedule of RTPD and RTD market horizon for resources ETSR that associated in the highlighted ITC</li> <li>• Include a total schedule for each interval of RTPD and RTD</li> </ul>	Core <b>Phase 1</b>	BAAOP, RTD, RTPD
EIM21-BRQ-114	<p><b>The designated read-only UI shall display the latest results</b></p> <ul style="list-style-type: none"> <li>• If the primary EIM entity modify the ITC limits, or ETSR in other UIs or submission, the change shall be reflected in the new designated UI</li> <li>• The designated UI displays the latest updates: latest submission, derate and override for ITC limits and Market binding and advisory results for ETSR</li> </ul>	Core <b>Phase 1</b>	BAAOP, RTD, RTPD

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ID#	Business Feature	Requirement Type	Potential Application(s) Impacted
EIM21-BRQ-116	<b>Ensure no change on access for existing UIs</b> <ul style="list-style-type: none"> <li>• All existing displays UI shall NOT be impacted, only allow primary EIM entity SC access their own resources and transmission constraints.</li> <li>• System shall not allow other EIM entity to view the primary SC's ITC and ETSR in other EIM entity specified UI. Other EIM entities only access associated ITCs and ETSR through designated read-only UI.</li> </ul>	Core <b>Phase 1</b>	BAAOP, RTD, RTPD
EIM21-BRQ-118	<b>Publish ITC limit</b> <ul style="list-style-type: none"> <li>• Market shall publish the ITC limits used in the RTPD and RTD for all the EIM entity ITCs, include the ITC that have association with 1, 2 or more BAAs.</li> <li>• ITC name, start time, end time, Market ID, Import limit, export limit</li> </ul>	Core <b>Phase 1</b>	BAAOP, RTD, RTPD

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### 5.1.3 Business Requirements: CMRI Reports

ID#	Business Feature	Requirement Type	Potential Application(s) Impacted
EIM21-BRQ-120	<b>Create ITC limit and associated ETSR reports UI and API</b> <ul style="list-style-type: none"> <li>• Receive association ITC with EIM entities from MF</li> <li>• Receive the ITC limits from market for RTD and RTPD</li> <li>• Create report for ITC limit used in the each Market for the EIM entities: ITC name, start time, end time, market ID, Import limit, export limit</li> <li>• Build Display UI and API for RTPD and RTD</li> <li>• Allow the EIM entity to view the associated ITC limits reports in UI.</li> <li>• Allow the EIM entities to get the associated ITC limits through API.</li> <li>• The EIM ITC limit report shall be on the same publish timeline as the regular market results reports for RTPD and RTD.</li> </ul>	Core <b>Phase 1</b>	CMRI