




# Business Requirements Specification

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## FERC Order 2222


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*Disclaimer:*

*The following business requirements are based on the CAISO's proposed compliance with Order No. 2222. Because the Federal Energy Regulatory Commission has not yet issued an order on that proposed compliance, these business requirements are subject to change, including the implementation date.*

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# 1 Introduction

## 1.1 Purpose


The purpose of this document is to capture and record a description of what the Users and Business Stakeholders of the project wish to obtain, by providing high level business requirements.

### Overview

FERC Order 2222 seeks to remove barriers for DER participation in RTO/ISO markets. The CAISO already allows for DER participation in its markets. The CAISO will make a few amendments to its DER policy, reducing minimum required capacity and allowing for the creation of DERAs.

The CAISO already largely complies with FERC Order 2222; however, a few changes will be made including a new resource classification, a reduction in minimum DER energy capacity, and the creation of DERAs. Some of these changes will include:

1. Adapt small utility opt-in provision in its pro forma Demand Response Provider agreement for the CAISO's pro forma DERP Agreement, replacing Demand Response references with DER references.
2. Change definition of DER to align with the Commission's definition as found in section III B of the Order No. 2222 DERAs Compliance Filing.
3. CAISO proposes to implement a heterogeneous DERA model such that: heterogeneous DERAs must consist of at least one curtailment resource and one energy injection resource. Heterogeneous DERAs will provide a net response of energy, demand curtailment or both at its PNode(s). Settlements for heterogeneous DERAs will be based on the net service provided to the CAISO. This will be a sum of the net energy provided and the demand curtailment provided.
4. Proposal to create a new term: "Distributed Curtailment Resource" for a DER providing demand curtailment in a heterogeneous DERA.
5. Settle heterogeneous DERAs as a single supply resource, as a sum of net energy provided by its DERs and the demand curtailed from DCRs.
6. The CAISO will apply a net benefits test to determine a threshold Market Clearing Price for Demand Response Providers and heterogeneous Distributed Energy Resource Aggregations.
7. Provision against double counting for any possible future scenarios, prevents a DER from participating in a DERA where the DER already participates in a retail net energy metering program that does not expressly permit wholesale market participation, requiring the distribution company to confer regarding any double-counting concerns
8. Reduce minimum size of DERs from 500kW to 100kW for a DERA.
9. Revise Tariff to require DERPs to notify the CAISO whenever DERA information changes due to the removal, addition or modification of a DER within a DERA.

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## 1.2 References

The related Regulatory Filings:


[Microsoft Word - Order No. 2222 - Response to Letter for Additional Info \(11-2-21\) \(caiso.com\)](#)

[Microsoft Word - Order No. 2222 - Answer to Comments \(caiso.com\)](#)

[PendingTariffLanguage-TariffAmendment-FERCOrderNo2222-ER21-2455-4-11-30-A-B21.pdf \(caiso.com\)](#)

## 1.3 Glossary

Acronym	Definition
DCR	Distributed Curtailment Resource
DER	Distributed Energy Resource
DERA	Distributed Energy Resource Aggregation
DERP	Distributed Energy Resource Provider
DF	Distribution Factor
DG	Distributed Generation
ES	Energy Storage
GDF	Generation Distribution Factor [T]
HDERA	Heterogeneous DERA
LESR	Limited Energy Storage Resource NGR
MF	Master File
MMG	Manage Markets and Grid
MMR	Manage Market and Reliability Data and Modeling

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Acronym	Definition
MRI-S	Market Results Interface – Settlements
NREM	Non-REM NGR
NGR	Non-Generator Resources
NBT	Net Benefits Testing
NRI	New Resource Interconnection
RDT	Resource Data Template
REM	Regulation Energy Management
RIMS	Resource Interconnection Management System
SBS	Supplementary Business Specification
SC	Scheduling Coordinator
SCME	Scheduling Coordinator Meter Entity
SIBR	Scheduling Infrastructure and Business Rules
UDC	Utility Distribution Company

## 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:

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1. 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.
2. 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.

## 2.2 Checklist

No intellectual property impacts.




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## 3 Details of Business Need/Problem

### 3.1 Description

<b>Business Opportunity/Problem Statement:</b>	
<b>What:</b>	<p>The proposed changes amend the CAISO's Tariff to comply with FERC Order 2222. FERC Order 2222 requires that all RTOs/ISOs allow for Distributed Energy Resources (DERs) that can provide a maximum of at least 100kW to participate in all markets. The CAISO already allows for DER participation but will have to make some adjustments to ensure compliance with FERC 2222.</p> <p><b>Key Notes:</b></p> <ul style="list-style-type: none"> <li>• Reduces DERA participation capacity to 100kW</li> <li>• Settlements for heterogeneous DERAs</li> <li>• Distributed Curtailment Resources (DCR) in heterogeneous DERAs</li> <li>• Same Net Benefits testing as PDR for heterogeneous DERAs</li> </ul>
<b>When:</b>	Fall 2022
<b>Why do we have this opportunity/problem:</b>	FERC Mandate

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## 4 Business Impacts

### 4.1 Business Practice Manuals (BPM)

<b>BPM</b>	<b>Description of Impact(s)</b>
Demand Response	Elaboration of net benefit testing for heterogeneous DERA
Market Instruments	Size and heterogeneous DERA
Market Operations	Size and heterogeneous DERA
Metering	New resource type HDERA
Settlements and Billing	Settlements for heterogeneous DERAs

### 4.2 Other

<b>Impact</b>	<b>Description (optional)</b>
<b>Market Simulation</b>	Market Simulation not required.
<b>Market Participant Impact</b>	Yes
<b>Customer Readiness Impact</b>	No
<b>External Communication Needed</b>	Yes: For new resource types.
<b>External Onboarding and Maintenance</b>	N/A
<b>External Training</b>	Yes
<b>External Computer Based Training</b>	N/A
<b>Tariff Amendment</b>	Yes

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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: Develop and Monitor Regulatory Contract Procedures (DI LII) - Master File

#### 5.1.1 Business Requirements

ID#	Business Feature	Requirement Type	Potential Application(s) Impacted
FERC2222-BRQ001	<p>System must flag all DERAs, and Heterogeneous DERAs.</p> <p>This flag cannot be updated by the Scheduling Coordinator using the RDT process.</p> <p>(Change to heterogeneous flag requires modified NRI project)</p> <p>Implementation Note:</p> <p>A new flag called HDERA_YN is needed.</p> <p>If the flag is N, the resource is a DERA.</p> <p>If the flag is Y, the resource is a Heterogeneous DERA.</p> <p>If the flag is null, the resource is not a DERA.</p>	Core	Master File
FERC2222-BRQ003	<p>System must setup and store the approved baseline method for each of the Heterogeneous DERA.</p>	Core	Master File

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ID#	Business Feature	Requirement Type	Potential Application(s) Impacted
FERC2222-BRQ110	System must set a default GDF for heterogeneous DERAs.	Existing	Master File
FERC2222-BRQ101	System must make available the new HDERA_YN flag and the baseline method associated with the DERA to downstream systems.	Core	Master File


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## 5.2 Business Process: Manage Resource Implementation (DI LII)

### 5.2.1 Business Requirements

RIMS functionality is in place, these projects types are included within RIMS (RIMS Enhancements 61514).


ID#	Business Feature	Requirement Type	Potential Application(s) Impacted
FERC2222-BRQ004	<p>DERAs and heterogeneous DERAs may have a minimum Pmax of 100kW.</p> <p>Upon project creation within RIMS a 0.1MW validation rule will need to be implemented.</p> <p>0.1MW for Master File validation rule for Pmax for DERAs.</p>	Tariff Core	Master File NRI RIMS

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## 5.3 Business Process: Manage DAM (MMG LII) Manage RTM (MMG LII) - SIBR

### 5.3.1 Business Requirements


ID#	Business Feature	Requirement Type	Potential Application(s) Impacted
FERC2222-BRQ005	<p>The same net benefit test price threshold used for PDRs will be used for heterogeneous DERAs.</p> <ul style="list-style-type: none"> <li>• Identify heterogeneous DERAs as flagged by MF.</li> <li>• Apply net benefit test for HDERA resource using same price threshold for PDR.</li> </ul>	Core	SIBR

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## 5.4 Business Process: Post Process and Market Billing and Settlements (MOS LII) – MRI-S Manage DMM Monitoring System (SBS LII) – MRI-S


### 5.4.1 Business Requirements

ID#	Business Feature	Requirement Type	Potential Application(s) Impacted
FERC2222-BRQ007	Scheduling Coordinator must submit the following in Settlement Meter Data Systems: <ol style="list-style-type: none"> <li>1. Net energy from the Heterogeneous DERA Resource</li> <li>2. (For Monitoring measurement) Demand curtailment provided by DCRs</li> <li>3. (For Monitoring measurement) Customer Load Baseline or Generator Output Baseline used to calculate the demand curtailment for the DCR</li> <li>4. (For Monitoring measurement) Actual underlying consumption or energy during all hourly intervals for the calendar days for which the Meter Data was collected to develop the baseline.</li> </ol>	Core	MRI-S Metering
FERC2222-BRQ008	Settlement of heterogeneous DERAs will be based on the sum of net energy provided by the DERs accounting for Distributed generation, Energy Storage (positive or negative) and demand curtailment provided by the DCRs, represented	Core	MRI-S Settlements Metering

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<b>ID#</b>	<b>Business Feature</b>	<b>Requirement Type</b>	<b>Potential Application(s) Impacted</b>
	<p>as positive supply. (Appendix A has an example.)</p> <p>DCR participates in generation measurement for settlements.</p> <p>Settled as NREM LESR.</p>		
FERC2222-BRQ102	System must consume the HDERA_YN flag and the associated baseline method for DERAs from Masterfile.	Core	Settlements
FERC2222-BRQ105	System must generate the report needed to monitor the missing baseline monitoring meter data.	Core	Settlements




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## 5.5 Business Process: Strategic Client Account Management – (SCS LII) RIMs

### 5.5.1 Business Requirements

ID#	Business Feature	Requirement Type	Potential Application(s) Impacted
FERC2222-BRQ009	System setup and validate for heterogeneous DERA: <ul style="list-style-type: none"> <li>• Create A new version of the project details form is required to encompass the HDERA and DCR checkbox and associated fields of customized locations of Pnode and Distribution Factors (DF) or pre-defined location of SubLap.</li> <li>• Apply validation for HDERA associated locations and DF, if validation fails, send error message and not create the project.</li> <li>• Allow UI update to the heterogeneous flag, system will apply the validation, if fails, provide error messages on UI and not save th change.</li> <li>• The heterogeneous field will be editable for Internal Admin users and viewable to all external users as well as internal users.</li> </ul>	Core	RIMS NRI Access Database
FERC2222-BRQ010	<ul style="list-style-type: none"> <li>• SC must be approved for any identified baseline on attachment A for a DCR they are representing as the SCME.</li> </ul>	Business Process	N/A

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<b>ID#</b>	<b>Business Feature</b>	<b>Requirement Type</b>	<b>Potential Application(s) Impacted</b>
FERC2222-BRQ018	<ul style="list-style-type: none"> <li>• Concurrence A template must be updated to include DCR and baseline type</li> <li>• Regulatory Contracts will need to create a procedure for verifying and performing potential changes to the schedule 1.</li> </ul>	Business Process	RIMS NRI Access Database


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## 5.6 Business Process: Market/Business Simulation

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, 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.
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 or export 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.

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### 5.6.1 Business Requirements

ID#	Guidance on Market Participant Impacts	Source System	Sink System	Reason for Potential Scenario
N/A	Not Required. Will be made available if a market participant wants to test the DERA resource type.			

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## Appendix A: Heterogeneous DERA Examples

This section will be used to document any additional formulas, calculation details, and/or examples that will aid the implementation team.

Heterogeneous DERA (HDERA)

