

Energy Imbalance Market (EIM) Participants

Frequently Asked Metering Related Questions (FAQ)

Market Participation

1. What is EIM?

Energy Imbalance Market (EIM) is a Real-Time market to dispatch economic bids voluntarily offered by Participating Resources. The purpose of EIM is to efficiently balance (1) supply, (2) transfers between balancing authority areas, and (3) load across its footprint. EIM only includes CAISO's Real-Time Market and does not include CAISO's Day-Ahead Market.

2. Do I have the option to participate as a Schedule Coordinator Metered Entity (SCME) or an ISO Metered Entity (ISOME) within EIM?

Yes. Both options are available within EIM. You can select to be an SCME, which follows current Local Regulatory Authority (LRA) requirements and submits SQMD on behalf of their customer or choose to be an ISOME where the data is collected from an ISO Certified & Inspected Revenue meter and is processed by CAISO personnel on behalf of the Scheduling Coordinator (SC) and Generator Owner.

3. What types of agreements are associated to EIM?

The following is a list of EIM related agreements:

- EIM Implementation Agreement (EIMIA)
- EIM Entity Agreement (EIMEA)
- EIM Entity Scheduling Coordinator Agreement (EIMSCA)
- Meter Service Agreement Scheduling Coordinator (MSASC)
- EIM Participating Resource Agreement (EIPRA)
- EIM Participating Resource Scheduling Coordinator Agreement (EIMPRSCA)
- Meter Service Agreement Scheduling Coordinator (MSASC)

4. What is the difference between participating and non-participating in the EIM Market? (i.e. Generation Resources)

Participating: The EIM Participating Resources are the owners or operators of EIM resources that wish to bid supply into the Real-Time Market.

Non-Participating: EIM Resource that does not participate in the Real-Time Market but is required to be identified in the EIM Balancing Authority Area for settling charges and payments related to nonparticipating load and nonparticipating resources.

5. What is a Market Resource?

A Market Resource is the identification characters assigned by the CAISO to Generating Units, Loads, Participating Loads, System Units, Proxy Demand Resources, Reliability Demand Response Resources, and physical scheduling plants.

6. What is an MSID?

The Meter System ID (MSID) is the naming convention used to submit meter data associated with the related market Resource ID.

7. How do I calculate my Load Data (ELAP)?

Within EIM, this value can be calculated by using a simple formula consisting of all related Generation (Participating & Non-Participating) along with your Intertie resources. (i.e. Load = Gen+ Imports – Exports)

8. What interval sizes are required for my EIM resources?

- Participating Generator data is required to be submitted in 5 minute intervals.
- Non-participating Generator data can be submitted in 5, 15, or 60 minute intervals.
- Intertie resources are required to be submitted in 5 minute intervals.
- Load resources can be submitted in 5, 15, or 60 minute intervals.

9. What guidelines do I need to follow regarding my revenue meters and related equipment?

To participate in the market as an SCME, Market Participants shall follow their Local Regulatory Authority (LRA) guidelines. If no LRA is available, the default reverts to meeting the current ISOME guidelines unless the CAISO can determine that the existing metering standards of the SCME meet or exceed current metering specifications outlines within the CAISO Business Practice Manual (BPM) for Metering and approved standards.

To participate in the market as an ISOME, Market Participants shall follow the CAISO's guidelines and metering specifications. This information is available in the [Metering BPM](#).

10. How should my data be displayed for Generation, Load, and Intertie?

Resource Types	Channels	Description
Interties	1,4	Import values are on channel 4 and Export values are on channel 1.
Generation	4	Generation values are always represented on channel 4.
Load	1	Load values are always represented on channel 1.

Both channels 1 and 4 must be submitted for all types of resources. All values must be positive numbers.

Data Collection System(s)

1. What is MRI-S and how do I obtain access?

MRI-S is a web-based application that allows users to view, download, and submit settlement quality meter data. To submit meter data, the designated User Access Administrator (UAA) within your company will need to request access to MRI-S through the AIM application. Instructors for granting access can be found in the [AIM User Guide](#).

2. How do I establish a designated User Access Administrator (UAA) Agreement if one does not exist?

Information on how to establish a UAA can be found with the following links

- AIM User Guide (http://www.caiso.com/Documents/AccessandIdentityManagement_AIM_UserGuide.pdf)
- UAA Agreement Form (<https://na2.docusign.net/Member/PowerFormSigning.aspx?PowerFormId=1142ad5b-6d24-4a83-b34c-9173989a1aba>)

3. If I plan to submit the data through the Secure File Transfer Protocol (SFTP), how do I obtain access? What are some of the common FTP issues?

The UAA for the SC shall complete an MRI-S FTP Application Access Request Form. After the request has been submitted, CAISO will configure the FTP account and provide the requester with the information. Please see the [linked guide](#) for more information.

Common SFTP issues may consist of the following: (1) User's internal firewalls, (2) Incorrect IP address, (3) Incorrect Resource IDs, or (4) Limited FTP functionality.

4. What environments are available in MRI-S to submit meter data? What are the links to the environments?

The User Access Administrator (UAA) can provision MRI-S access for their users through the Access Identity Management (AIM) application.

- Production: <https://portal.caiso.com/settlements>
- MAP Stage: <https://portalmmap.caiso.com/settlements>

Data Collection, Processing, and Submission

1. What is the difference between Revenue Quality Meter Data (RQMD) and Settlement Quality Meter Data (SQMD)?

RQMD comes from a Revenue Quality Meter/Device that has been certified by the CAISO or relevant Local Regulatory Authority.

SQMD originates from a Revenue Quality Meter and is created through a Validation, Editing and Estimation (VEE) process.

2. What is VEE?

VEE is defined as Validation, Estimation, and Editing. These guidelines are provided by the LRA for the SCMEs to follow.

ISOMEs follow the CAISO Data Validation, Estimation and Editing Procedures for Revenue Quality Meter Data (RQMD), which are posted in Attachment D of the Metering BPM.

3. How do I convert my Interval Data?

kW to **kWh**= Interval value divided by:

12 for a 5 minute interval (i.e. 3000 kW = 250 kWh)

4 for a 15 minute interval (i.e. 3000 kW = 750 kWh)

kW to MW = value divided by 1000 (i.e. 2 kW = 0.002 MW)

MW to kW = value multiplied by 1000 (i.e. 0.003 MW = 3 kW)

4. How do I convert my 15 or 60 minute intervals into 5-minutes?

Granularity intervals cannot be lower than the granularity currently programmed in the individual meters.

5. What are the Unit of Measures (UOM) that I can use to submit my meter data?

Scheduling Coordinators may submit meter data in either kilowatt or megawatt hour as it is specified within the UOM.

- kWh = 01 (kilowatt hour)
- MWh = 41 (megawatt hour)

6. What type of format can I submit my meter data?

Meter data can be submitted in two types of formats: Meter Data Exchange Format (MDEF), Comma Separated Values (CSV), or Extensible Markup Language (XML).

7. What is required for a successful data submission of Settlement Quality Meter Data (SQMD)?

The following attributes within a data file must be in alignment with CAISO Settlement Quality Meter Data System (MRI-S) in order for a successful submission:

- MSID
- Resource Interval Sizes
- File Formatting

8. When is my meter data due?

Scheduling Coordinators may submit Actual SQMD or Estimated SQMD at T+8B. However, the Actual SQMD (ASQMD) is due on T+48B by midnight.

9. What type of validation does CAISO perform on my submitted data files?

The validation process performed by the CAISO is verifying that the file formatting and resource configurations have been captured correctly. If the data was submitted incorrectly, the findings will be reflected on your settlement statement(s). Please note that it is the responsibility of the SC to ensure that the meter data file represents the highest level of data accuracy.

10. Can I resubmit meter data if I discover errors in my previous submission?

Yes. SCs may submit data as many times as necessary up to T+48B midnight. After T+48B, submission of meter data up to +172B is also allowed. However, data submittals during this time are subject to Rules of Conduct and a penalty will be assessed.

11. What is considered late meter data?

Submission(s) after the T+48B deadline is considered late meter data. Late data will be processed for the T+172B submission window.

12. What should I do for missing or bad meter data?

Scheduling Coordinators should utilize their VEE process to create SQMD for missing or bad data.

13. Who should I contact if I have problems with the data submission?

If an SC is having problems submitting meter data or has questions about meter data, they will need to open a Customer Inquiry, Dispute and Information (CIDI) ticket and request for assistance. If the matter is urgent, the SC should contact their Client Representative or send an email to EDAS@caiso.com.

Compliance

1. What is an SC Self-Audit?

An SC Self-Audit is a report submitted by the Scheduling Coordinator on an annual basis with management's assertion that they have completed the appropriate audits and tests to ensure overall compliance. The audit combines several different elements focusing on meter data collection and validation practices, audits, controls, etc. Supporting data does not need to be provided within the Audit Report, however, the CAISO maintains the right to ask for and review any materials used to complete the Audit. See [FAQ](#) document for further information.

2. When is the SC Self-Audit due and what does it consist of?

SC Self-Audit (Aug 1 – July 31 previous year) is due by Oct 31 of the current year.

It consists of the following:

- Management Assertion that they have completed the appropriate audits and test and reviewed results.
- Description of entities present (LSE, ESPs, Cities, Direct Access etc. + LRA).
- Description of SQMD process and controls if identified by auditors as remarkable.
- Explanation of any errors identified and corrective actions.
- Audits and tests.

3. Can the CAISO audit SCME Metering facilities?

Yes, the CAISO has the right to either conduct any audit or test it consider necessary or to witness such audit or test carried out by the SCME.

4. When do the Rules of Conduct apply?

Rules of Conduct are associated with incomplete or inaccurate data resubmitted after the T+48B.

Acronyms

Term	Description
AARF	Application Access Request Form
AIM	Access and Identity Management
API	Application Programming Interface
ASQMD	Actual Settlement Quality Meter Data
BPM	Business Practice Manual
CAISO	California ISO
CH 1	Load or Exports
CH 4	Generation or Imports
CSV	Comma Separated Values
ELAP	EIM Load Aggregation Point
ESQMD	Estimated Settlement Quality Meter Data
FTP	File Transfer Protocol
ISOME	ISO Metered Entity
kWh	Kilowatt Hour
LRA	Local Regulatory Authority
MDAS	Meter Data Acquisition System
MDEF	Meter Data Exchange Format
MSID	Meter System ID
MWh	Megawatt hour
MRI-S	Market Results Interface - Settlements
PI	Plant Information
RQMD	Revenue Quality Meter Data
SC	Scheduling Coordinator
SCME	Scheduling Coordinator Metered Entity
SQMD	Settlement Quality Meter Data
UAA	User Access Administrator
UOM	Unit of Measure
VEE	Validation, Estimation, and Editing

Helpful Links

- Access and Identity Management (AIM) User Guide_
http://www.caiso.com/Documents/AccessandIdentityManagement_AIM_UserGuide.pdf
- Application Access Page & Certificate Installation Instructions_
<http://www.caiso.com/participate/Pages/ApplicationAccess/Default.aspx>
- BPM Library
<http://bpmcm.caiso.com/Pages/BPMLibrary.aspx>
- CAISO Payment Calendar_
<http://www.caiso.com/market/Pages/Settlements/Default.aspx>
- Digital Cert FAQ_
http://www.caiso.com/Documents/FrequentlyAskedQuestions_ISODigitalCertificates.pdf
- Digital Cert Renewal
<http://www.caiso.com/Documents/InstructionsForRenewingYourDigitalCertificate.pdf>
- Information on ECN Connectivity_
<http://www.caiso.com/Documents/ISOConnectedEntityServiceGuide.pdf>
- New Digital Cert Request_
<http://www.caiso.com/Documents/InstructionsForRegisteringForYourNewDigitalCertificate.pdf>
- SC Self-Audit FAQs_
<http://www.caiso.com/Documents/SchedulingCoordinatorSelfAuditFrequentlyAskedQuestions.pdf>
- Settlements External User Guide
http://www.caiso.com/Documents/MRI_SettlementsExternalUserGuide.pdf
- SFTP
<http://www.caiso.com/Documents/ISOSecureFileTransferProtocolSFTPProvisioning-SetupProcedure.pdf>