WESTERN ENERGY IMBALANCE MARKET

Briefing on Western Energy Imbalance Market Website Overview

Peter Colussy External Affairs Manager - Regional

EIM Governing Body Meeting General Session July 13, 2017



New website: www.westernEIM.com

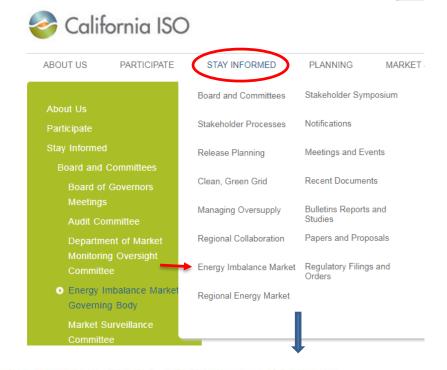
- Direct access to information specific to the western EIM in a single location
- Visitors searching for western EIM related information on caiso.com will now be redirected to the new website



www.caiso.com will redirect stakeholders to new website







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www.westernEIM.com







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Find the answers to the most frequently asked EIM questions



News & Notifications >>

See the latest developments in the EIM and subscribe for news releases and market notices.

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About

EIM uses advanced market systems to automatically find the lowest-cost energy to serve real-time customer demand across a wide geographic area.



Western Energy Imbalance Market > About

About

The California ISO's western Energy Imbalance Market (EIM) is a real-time bulk power trading market, the first of its kind in the western United States. EIM's advanced market systems automatically find the lowest-cost energy to serve real-time customer demand across a wide geographic area. Utilities will maintain control over their assets and remain responsible for balancing requirements while sharing in the cost benefits the market produces for participants.

Since launching in 2014, the western EIM has enhanced grid reliability and generated cost savings in the millions for its participants. Besides its economic advantages, the EIM improves the integration of renewable energy, which leads to a cleaner, greener grid.

EIM is governed by a five member body with delegated authority over rules specific to the western EIM.



Frequently asked questions >>

Preguntas Comunes Sobre el EIM >>



Quarterly benefits & greenhouse gas reports >>

Participants

Active

PacifiCorp – entered 2014 NV Energy – entered 2015 Puget Sound – entered 2016 Arizona Public Service – entered 2016

Pending

Portland General Electric – entry 2017 Idaho Power Company – entry 2018 Powerex – entry 2018 Seattle City Light – entry 2019 Los Angeles Department of Power & Water – entry 2019 Balancing Authority of Northern California/SMUD – entry 2019 Salt River Project – entry 2020

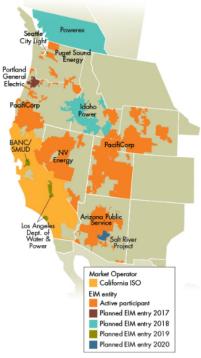
Implementation documents

Salt River Project





Western EIM active and pending participants



Masters EIM Dectisionst Profiles SS

Join EIM





Western Energy Imbalance Market > Join EIM

Join EIM

Five well outlined steps will help you join the western EIM real-time market. Because the platform is scalable and flexible, entities can join in a timeframe that works for their business. California ISO (ISO) experts will support you every step of the way, and existing EIM participants have offered their support for new entrants to help them navigate participation in the FIM

Perform cost benefit analysis

A key step in deciding to participate as an EIM entity is determining the costs and benefits. This may involve performing a cost-benefit analysis that includes multiple scenarios, estimated implementation costs and benefits for the prospective entity, the ISO and other EIM entities. The ISO will share information on estimating costs based on experience of other EIM participants. Below are some recent examples from others who have completed the benefit analysis.

Energy Imbalance Market - benefit assessments

Establish an implementation agreement

After you decide to proceed with participation, we will jointly establish an implementation agreement and file it with the Federal Energy Regulatory Commission (FERC). This agreement outlines the terms of our partnership to prepare for your participation. The agreement also outlines schedule milestones and associated payments to the ISO for costs for related system changes, software licenses and other configuration activities.

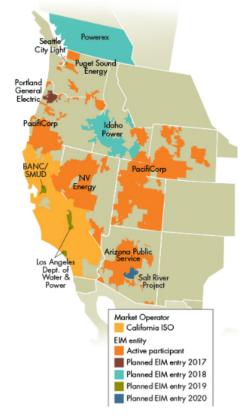
Find examples in this list of executed EIM implementation agreements.

EIM implementation agreements

Train for EIM

Together we will develop and deliver an organized training curriculum for your staff. Experienced ISO staff will train your in-house training or end-user staff through online and instructor led

Western EIM active and pending participants



Join (cont.)

Train for EIM

Together we will develop and deliver an organized training curriculum for your staff. Experienced ISO staff will train your in-house training or end-user staff through online and instructor led courses and workshops covering all aspects of EIM, including market design, market operations, scheduling, and settlements. In the interim we recommend your staff take the below online introduction courses.



Get ready to participate



Introduction to the Western FIM



How the Western EIM

Establish operating procedures

We will collaboratively develop operating procedures prior to implementation to ensure operational readiness. You will have the opportunity to practice with business process changes and exercise operational procedures during table top training scenarios and market simulation. Operating procedures must be established and training completed prior to the start of parallel operations.

Complete the implementation process

The implementation process takes approximately 18 months and includes the below activities, which often run in parallel.

Plan for implementation

Together we will develop a detailed project schedule outlining all the steps leading to the market simulation, parallel operations and full participation. At this point you should consider the following:

- staffing and project roles to manage EIM preparations
- IT and operations project implementations
- whether or not to engage a third party to assist with systems development and integration
- impact to open access transmission tariff (OATT) and potential stakeholder processes to adapt
- a participating resource strategy to determine which resources will participate in EIM through individual bids

📆 Operational Experience as an Energy Imbalance Market Entity

Establish agreements and identify scheduling coordinator and participating resources

As an EIM entity, your organization must enter into contracts with the ISO. Likewise, all resources that plan to participate and provide hide must become an EIM participating recourse by entering into

Planned EIM entry 2018 Planned EIM entry 2019 Planned EIM entry 2020

Contact us

ISO staff is here to assist you in every aspect of implementation. If you need additional information on participating in the EIM, please contact our representatives listed below. You can also refer to the Energy Imbalance Market Business Practice Manual for additional information.

Don Fuller (916) 608-7055 dfuller@caiso.com

Peter Colussy (916) 608-5850 pcolussy@caiso.com





Governance

WESTERN ENERGY IMBALANCE MARKET



Western Energy Imbalance Market > Governance

Governance

To create a governance structure for EIM, a transitional committee was formed, inclusive of stakeholders throughout the west. These stakeholders came together to design a governance framework formalized in a charter. The charter establishes the EIM Governing Body, which has been delegated levels of authority from the ISO Board of Governors on rules specific to participation in the EIM. In addition, the charter establishes two other components of the overall governance structure for the EIM: a body of regulators and a Regional Issues Forum.

Governing Body members

The EIM governing body was designed by regional stakeholders to give entities throughout the west a voice in decision-making on EIM matters. The five members of the governing body were nominated by a committee of western stakeholders. These members bring a high level of professionalism and leadership, with work experience in public power, investor-owned utilities, and as state regulators. Click on a member's name for their biography.

Douglas Howe, Chair Valerie Fong, Vice Chair Carl Linvill John Prescott Kristine Schmidt

Current meeting materials

EIM Governing Body meeting Apr 19, 2017



EIM Meeting Calendar



Board of Governors, EIM Governing Body and Committees Meeting Schedule

Governing Body meeting dial-in information

Meeting: July 13, 2017 Number: (877) 260-8898 ID: 426174

Contact:

For information on or assistance with the Governing Body, please contact: Jennifer Rotz (916) 608-5961 jrotz@caiso.com

For information on or assistance with the EIM body of regulators (BOSR), the Regional Issues Forum, or the Nominating Committee, please contact: Peter Colussy (916) 608-5850

pcolussy@caiso.com

Gov (cont.)

Kristine Schmidt

Current meeting materials

EIM Governing Body meeting Apr 19, 2017

EIM body of regulators (BOSR)

The primary function of the EIM body of state regulators is to learn about the EIM, EIM Governing Body and related ISO developments that may be relevant to their jurisdictional responsibilities. The regulators will hold periodic meetings and may express a common position in the ISO stakeholder process or to the EIM Governing Body on EIM issues, but is not restricted from taking any position before FERC, ISO Board of Governors, or any other forum concerning matters related to EIM or the ISO. Learn more about the EIM – BOSR, and find a calendar of events, meetings materials, etc. on the Western Interstate Energy Board (WIEB) website using the following link.

EIM Body of State Regulators >>

EIM Body of State Regulators - relevant market notices

Regional Issues Forum

This forum is organized by ten self-selected sector liaisons that facilitate input and participation from respective sectors on the topics and content not currently part of an ongoing ISO stakeholder process. The forums, to be held approximately three times a year, will allow stakeholders to discuss broad issues related to the Energy Imbalance Market (EIM), be open to the public, and encourage all those interested to attend and participate. The forum may produce documents or opinions for the benefit of the EIM Governing Body, California ISO Board of Governors, and the ISO. More information about the Regional Issues Forum and how to participate use the link below.

Regional Issues Forum >>

EIM governance foundational documents

- Charter for Energy Imbalance Market Governance 5/03/2017 08:46
- Selection Policy for the EIM Governing Body 3/28/2017 11:44
- Guidance for Handling Policy Initiatives EIM Governing Body 1/17/2017 10:0

Previous EIM Governing Body meetings

- EIM Governing Body meeting Mar 27, 2017
- EIM Governing Body meeting Feb 28-Mar 1, 2017
- EIM Governing Body meeting Feb 1, 2017
- EIM Governing Body meeting Jan 18-19, 2017
- EIM Governing Body meetings 2016

EIM Governing Body year 1 request for feedback

EIM Governing Body request for feedback Oct 13, 2016

EIM nominating committee members

JI ULZ@CalsU.CUIII

For information on or assistance with the EIM body of regulators (BOSR), the Regional Issues Forum, or the Nominating Committee, please contact:

Peter Colussy (916) 608-5850 pcolussy@caiso.com





Initiatives

WESTERN ENERGY IMBALANCE MARKET



Western Energy Imbalance Market > Initiatives

Initiatives

The western Energy Imbalance Market (EIM), the California ISO enhanced real-time market that went live on November 1, 2014, creates significant reliability and renewable integration benefits for consumers by sharing and economically dispatching a broad array of resources. The ISO is committed to providing ample opportunity for stakeholder input into EIM market design and implementation activities. The stakeholder process will shape the market design and policies through a series of proposals, meetings and stakeholder comments focused around an initiative. The ISO has several initiatives underway to further evolve the market as new entities participate and make enhancements based on experience from implementation.

Stakeholder Initiative Milestones Release Planning Stakeholder initiatives catalog process

Current stakeholder initiatives

The Guidance Handling Policy Initiatives within the Decisional Authority or Advisory Role of the EIM Governing Body describes the policy for how initiatives are identified and classified for decision by the EIM Governing Body. Click any of the initiatives below for information on participation in current meetings and for policy development materials.

The initiative links below lead to www.caiso.com.

☐ Initiative falls entirely within EIM Governing Body's primary authority (E1)

A Dagianal integration and EIM grouphouse are compliance /E1



EIM Meeting Calendar





Initiatives

Current stakeholder initiatives

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The initiative links below lead to www.caiso.com.

- Initiative falls entirely within EIM Governing Body's primary authority (E1)
 - Regional integration and EIM greenhouse gas compliance (E1)
 - Consolidated Energy Imbalance Market initiatives (E1)
- ☐ Initiative falls entirely within EIM Governing Body's advisory authority (E2)
 - Generator contingency and remedial action scheme modeling (E2)
 - Aliso Canyon gas-electric coordination phases 1 and 2 (E2)
 - Energy storage and distributed energy resources phase 2 (E2)
 - Commitment costs and default energy bid enhancements (E2)
 - Aliso Canyon gas-electric coordination phase 3 (E2)

Hybrid where primary driver for initiative is EIM-specific (E3) No current initiatives

Hybrid where primary driver for initiative is not EIM-specific (E4) No current initiatives

Current stakeholder activities

Stakeholder web conference - Draft greenhouse gas emissions tracking report

- 4 Audio Draft Greenhouse Gas Emissions Tracking Report Nov 14, 2016 11/16/2016 09:05
- Presentation Draft Greenhouse Gas Emissions Tracking Report 11/11/2016 11:34
- Draft Greenhouse Gas Emissions Tracking Report 11/07/2016 13:17
- ☆ Greenhouse Gas Emissions Tracking Methodology 11/07/2016 13:17
- California ISO Posts GHG Emissions Tracking Report Frequently Asked Questions for 11/14/16 Stakeholder Call 11/11/2016 09:04
- Draft Greenhouse Gas Emissions Tracking Report and Methodology Paper Posted, Call 11/14/16 11/07/2016 13:42
- Stakeholder comments

EIM Governing Body draft guidance document

- 🔁 Agenda and Presentation Energy Imbalance Market Governing Body Draft Guidance Document 10/11/2016 08:23
- Draft Guidance Document Energy Imbalance Market Governing Body 10/04/2016 10:56
- Stakeholder comments

Completed stakeholder initiatives

Energy Imbalance Market Year 1 Enhancements

Process seeking to fulfill compliance requirements, facilitate new EIM entities joining the market and improve bidding and pricing rules.





Resources

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Western Energy Imbalance Market > Resources

Resources

EIM Participants

These resources are intended for EIM entities and participating generators that are directly involved in the Energy Imbalance Market.

Business Practice Manuals

Business Practice Manuals contain implementation details through which the California ISO and market participants conduct business in accordance with the Tariff. The Business Practice Manual for Energy Imbalance Market contains information about all EIM entity types.

Tariff

The Energy Imbalance Market is governed by the California ISO (ISO) FERC-approved Tariff. Each section or appendix of the tariff is maintained and updated independently according to effective dates of the FERC accepted tariff amendments. Section 29 of the ISO Tariff addresses the provisions related to the Energy Imbalance Market. Appendix B. 17 – 20 contains agreements related to EIM participation.

Regulatory Filings

All publicly available California ISO-authored filings and FERC orders are posted on the ISO website.

Transmission customers of EIM entities

These resources are intended for transmission customers of active EIM entities

WESTERN EIM



Computer Based Training (CBT)

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System Outages Foundational Concepts



Settlements Foundational Concepts

Resources

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Transmission customers of EIM entities

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Foundational EIM training - Please access computer based trainings (CBTs) using the links on this page.

Transmission customers should contact their EIM entity for most questions. The ISO also stands ready to support transmission customers.

Stay up to date, subscribe to news releases and market notices >>

You may also contact ISO customer service >>

Computer Based Training (CBT)

Get ready to participate in EIM

Leading the EIM Transition

The Basics of the Real-time Market

Base Schedules Foundational Concepts

System Outages Foundational Concepts

Metering Foundational Concepts

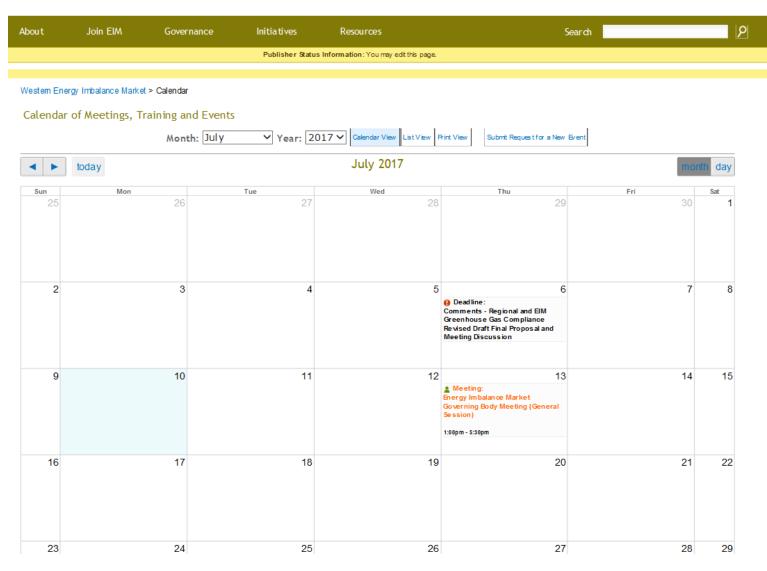
Settlements Foundational Concepts







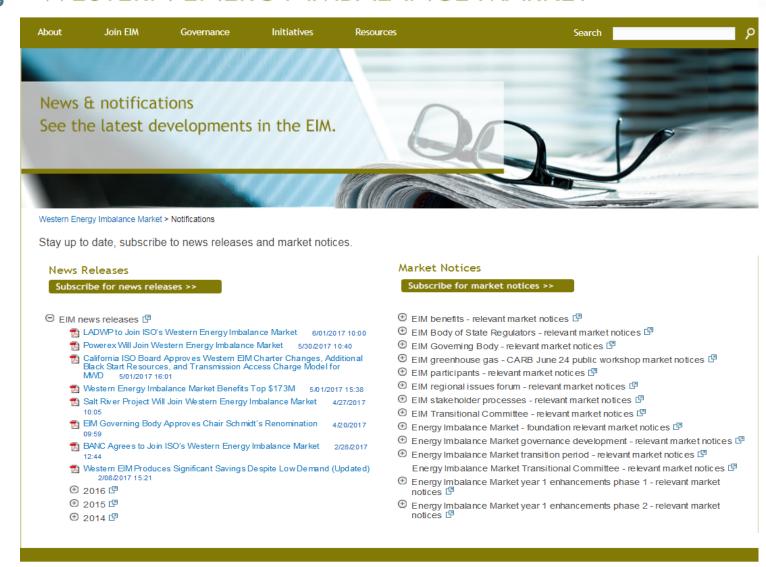
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Notifications

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Notifications



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 briefing.

Individual notice categories

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ATLAS REFERENCE

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PUBLIC BIDS

Welcome to the California ISO Open Access Same-time Information System (OASIS) site. On OASIS you will find real-time data related to the ISO transmission system and its Market, such as system demand forecasts, transmission outage and capacity status, market prices and market result data.

Standards Information

North American Energy Standards Board (NAESB) **ISO Business Practice Manuals** Available Transfer Capability Information

System Help

For interface technical specifications, product release plans and other supporting documents go to:

System Technical Information



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Glossary

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Glossary of terms and acronyms

The definitions and acronyms included in this glossary originate from the Business Practice Manual for Definitions and Acronyms. The symbols [T] and [M] indicate the definition was obtained from the ISO Tariff Appendix A, Master Definitions Supplement. The symbol [M] definitions were modified slightly for consistency with the business practice manuals and to improve definition accuracy.

Please refer to the Business Practice Manual for Definitions and Acronyms for the most up to date list of terms.

Updated 11/13/2015

Filter by letter of the alphabet, acronym or term name.

Letter	Acronym	Term	Definition
Α		Accepted Bid	A Submitted Bid that has passed Bid content verification process as described in tariff section 8.2.1.1 of the BPM for Market Instruments.
Α	AIM	Access and Identity Management	
A		Access Charge	A charge paid by all Utility Distribution Companies, Small Utility Distribution Companies, and MSS Operators with Gross Load in a PTO Service Territory, as set forth in Article II. The Access Charge includes the Regional Access Charge and the Local Access Charge. The Access Charge will recover the Participating TO's Transmission Revenue Requirement in accordance with Appendix F, Schedule 3.[T]
Α	AP	Accounts Payable	Money the California ISO owes to a Business Associate.
Α	AR	Accounts Receivable	Money a Business Associate owes to the California ISO.
A		Actual Settlement Quality Meter Data	Settlement Quality Meter Data gathered, edited, validated, and submitted by the Scheduling Coordinators on behalf of Scheduling Coordinator Metered Entities. [T]
Α		Adjusted Load Metric	A Load Serving Entity's Load Metric minus the megawatts of Load served using Existing Transmission Contracts, Converted Rights, and Transmission Ownership Rights. [T]
۸		Adjusted DMD	

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https://www.westerneim.com/Pages/ContactUs.aspx



Where documents are "housed" (documents migrated)

On westernEIM.com	On caiso.com		
Information specific only to the Energy Imbalance market are housed on westernEIM.com. Links from caiso.com will redirect stakeholders to westernEIM.com when applicable	Information that is not specific only to the EIM, or has a Tariff requirement to be available on caiso.com can be found on caiso.com; applicable links from westernEIM.com redirect stakeholders to the document on caiso.com		
Ex. EIM participant profiles, EIM Governing Body materials, information about the BOSR or RIF, information about how to participate in EIM	Ex. Stakeholder initiatives, Tariff, regulatory filings, trainings, business practice manuals		
Information on pages such as About, Join EIM, Governance, and RIF are dedicated to westernEIM.com	Information on pages such as Initiatives and Resources are housed on caiso.com		

