

A review of the Energy Imbalance Market proposal for the Western Interconnection and potential impacts

The Essentials

- The Public Utility Commission Energy Imbalance Market has proposed an EIM for the Western Interconnection ¹.
- The National Renewable Energy Laboratory Draft Report on EIM Analysis shows an annual societal operating benefit of between \$146 million and \$300 million for the Western Interconnection EIM with full participation.
- Critics of the plan cite concerns of cost-shifting, jurisdictional issues for local governments to enforce penalties, and questions of reliability.

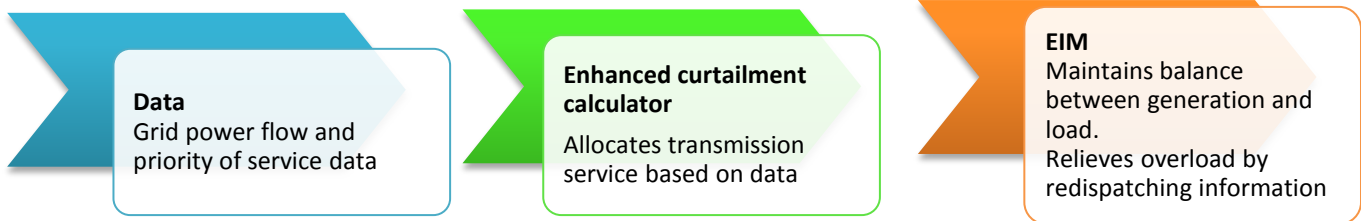
Details

Imbalance energy (or energy imbalance) is the difference between the real-time demand for electricity generation and what is prearranged through schedules.

Please see our [Introduction to Energy Imbalance Markets brief](#) for background information.

The current situation

In the Western Interconnection electric grid, utilities enter into long-term bi-lateral contracts to buy and sell needed energy. The Western Electricity Coordinating Council (WECC) (a regional entity which coordinates the operating and planning activities of its members) developed a proposal for an Efficient Dispatch Toolkit to be implemented throughout the Western Interconnection. The toolkit includes two primary tools – an Enhanced Curtailment Calculator (ECC) and the Energy Imbalance Market (EIM). The ECC is strictly a reliability tool, proposed for use throughout the Western Interconnection while it is up to a local BA to implement the EIM. It is proposed to be a voluntary mechanism to support reliability through an efficient market. The enhanced curtailment calculator would evaluate flows and pass relevant information to the EIM.



How will an EIM affect the Western Interconnection (WI)?

The creation of an EIM would significantly increase jurisdiction of energy markets by the Federal Energy Regulatory Commission (FERC). If an EIM determines units to be dispatched and price, FERC would have jurisdiction to determine that market rates, terms, and conditions (tariff) are just and reasonable.³

¹Victoria L. Ravenscroft, CO PUC Information Meeting, Western Interstate Energy Board, March 7, 2012

²<http://www.greentechmedia.com/articles/read/for-western-states-transmission-will-there-be-strength-in-unity>.

³Arnold Podgorsky, "Will an EIM Evolve Into An RTO," WSPP General Counsel, July 11, 2012

The American Public Power Association, a utility industry group, expressed concern that the increased jurisdiction would in turn result in a decrease in the ability of states and local authorities to exercise their jurisdiction to protect consumers.⁴

Real case example⁵

An outage event impacted the Western Interconnection in February 2008. This event involved a large loss of generation, over 2500 MW.

- The deficient Balancing Authority's (BA) system operators were dependent on manual communication methods such as phone calls, to find over 2,000MW of replacement power. *Available replacement generation options would have been automatically identified by the EIM dispatch software.*
- Next, the deficit BA needed to verify that contract path transmission capacity was available between those replacement generators and their BA. *The EIM software would have automatically verified that transmission was available. An EIM would also have gone one step further, evaluating and confirming actual available transmission capacity, rather than contract path capacity.*

Benefits from the EIM

- Less requirement of large buffers in line capacity are created to guard against contingencies.
- Improved operational reliability over a wider area by enabling decision-making and response based on near-term system data.
- Centralized, automated, and region-wide generation dispatch for imbalances.
- The National Renewable Energy Laboratory Draft Report on EIM Analysis shows an annual societal operating benefit of between \$146 million and \$300 million for the Western Interconnection EIM with full participation.⁶
- There is an additional benefit of approximately \$1.3 billion associated with moving from an hourly dispatch interval to a 10-minute dispatch interval.

An EIM would imply

- Decreased levels of reserves for electricity.
- Economic efficiency
- Decreased costs to integrate electricity sources onto the grid.

Concerns

- Fears over start-up costs, cost shifting (generation paid for by customers in one region will now be dispatched to benefit other customers) and new reliability problems have kept balancing area consolidation in the West to a minimum.

⁴ [Energy Imbalance Market Will Raise Prices in the West.](#) American Public Power Association, Fact Sheet, June 2012.

⁵Mariner Consulting Services, Inc. Initiative, "[Why an Energy Imbalance Market Will Make the Western Interconnection More Reliable](#)," sponsored by a coalition of WECC members who support the Efficient Dispatch Toolkit.

⁶ NREL Draft Final Report on EIM Analysis November 13, 2012.

- An April 2012 analysis by Argonne National Laboratory noted that, in an EIM “offers are not required to reflect actual unit production costs,” and that “market distortions could more than erase cost savings from lower EIM production costs.”
- A concern voiced by the American Public Power Association (APPA), a utilities advocate which opposes a Western Interconnect EIM, is its potential to quickly evolve into a Regional Transmission Organization (RTO). Tough financial penalties imposed on generators if they fail to meet scheduled power deliveries may act as a market barrier to intermittent renewable energy technologies ⁷. The PUC’s EIM taskforce have stated that their intent is that such an EIM would not be an RTO, although the EIM rates, terms, and conditions would likely be subject to FERC jurisdiction.
- The APPA further contends that infrastructure and operating costs “could, in some scenarios, outweigh the estimated benefits, with the net costs potentially reaching \$1.25 billion in net present value terms over the first ten years.”

An EIM could create

- New reliability problems
- Costs that outweigh the estimated benefits.

In the news

On 2/12/2013, California Independent System Operator (ISO) and PacifiCorp the two largest western U.S. power grid operators announced a commitment to work toward creating a real-time energy imbalance market. The market would allow PacifiCorp, in order to balance supply and demand on its system, access to the lowest cost power available not only within its entire footprint (parts of Oregon, Washington, California, Utah, Wyoming and Idaho), which it hasn’t been able to do before, but also across the entire ISO⁸.

One of the scheduled tasks of the PUC EIM is to encourage commissioners to request jurisdictional utilities to analyze results from EIM studies at a BA level including identifying costs associated with implementing an EIM and [Order 764](#) (Integration of Variable Energy Resources) ⁹.

Arizona Corporation Commissioner Bob Burns is currently representing Arizona at the PUC EIM.

Read more

- Background on Evaluation of a Western Energy Imbalance Market :
<http://www.westgov.org/EIMcr/documents/eim-spsc.pdf>
- Review of the WECC EDT Phase 2 EIM Benefits Analysis and Results Report , Argonne National Laboratory:
<http://www.dis.anl.gov/pubs/73032.pdf>
- Information on the Efficient Dispatch Toolkit
http://www.wecc.biz/committees/EDT/Documents/EDT_FactSheet.pdf

⁷ NREL report, “[The Implications of Regional Transmission Organization Design for Renewable Energy Technologies](#),” May 2002.

⁸ CAISO release available at

<http://www.caiso.com/Documents/EnhancedGridCoordinationThroughExpandedEnergyImbalanceMarket.pdf>

⁹ PUC EIM Group next steps available at

<http://www.westgov.org/PUCeim/meetings/2013sprg/EIMns.pdf>