

**Energy Imbalance Market –
Comments to the 3rd Revised Straw Proposal**

Submitted by	Company	Date Submitted
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The California Public Utilities Commission (CPUC) appreciates the opportunity to comment on the California Independent System Operator’s (CAISO) Energy Imbalance Market (EIM) third revised straw proposal. The proper design of the EIM is an important issue for the California energy market, and the CPUC Staff recommends that the CAISO provide sufficient time for the stakeholder process to work through various issues in the implementation of this initiative. Specifically, the CPUC has identified some issues to be addressed in the third straw proposal.

The CPUC staff’s main concerns are:

1. Due to the complexity of the EIM, CAISO should allow sufficient time to get informed and effective feedback from stakeholders so as to avoid potential pitfalls.
2. Convergence bidders could put additional flow on California lines without paying congestion uplift charges.
3. Increased Uplift costs and the impact to California rate payers.

Background

The Energy Imbalance Market would create a new Real-Time market for all Balancing Authorities (BAs) in the West to address the need to balance real time energy. At this point in time only CAISO and PacifiCorp are participants in EIM. The CAISO’s own Real-Time market will continue to run parallel to the new EIM. The expected benefits from EIM are:

Cost savings: by optimizing the dispatch from a larger pool of shared resources, ratepayers could benefit through lower prices resulting from efficiency.

Improved renewable integration: geographical diversity of renewables is beneficial because output variation in one region tends to counterbalance output variation in another. Geographical diversity is also beneficial for thermal as it allows for more optimal dispatch.

Increased reliability: BAs currently have limited information on schedules and flows in neighboring BAs. EIM will provide much more information, increasing grid reliability and efficiency.

CPUC staff believes that a coordinated and properly run EIM could be beneficial to California rate payers. In addition, there has been much interest throughout the West to develop an effective and efficient EIM. The Western Electricity Coordinating Council (WECC) launched a major initiative and study effort in 2010. Late in 2011, the Western Governors Association appointed the PUC-EIM group to advance the concept and understanding of an energy imbalance market. Several other groups and individual balancing areas are currently exploring implementation options. Many of these efforts have centered on creating a new organization, new systems, and new tariff to operate an EIM.¹

The proposed EIM is based on the CAISO's current market design. The ISO Board of Governors approved moving forward with the PacifiCorp EIM in March 2013 and opened a stakeholder process to outline initial steps for an independent EIM entity that would allow other BAs to participate and receive the benefits of the EIM in the future.

1. CAISO stakeholder process should allow sufficient time to fully consider potential unintended negative consequences of the EIM initiative

The CPUC staff agrees with several other stakeholders' comments (e.g. Powerex, PG&E)² who expressed concern that this CAISO initiative may not allow for stakeholders to properly work through all of the issues and give informed and effective feedback on important stages of the various aspects of the proposal. The EIM is expected to have significant impacts on the CAISO Real-Time market. Staff remains concerned that due to the complexity of the changes there is an increased potential for gaming. Rushing the process only increases the likelihood of errors and California ratepayers are likely to get stuck with the price tag.

In particular, Staff believes that the concerns expressed below (potential gaming due to convergence bidding and the allocation of uplift charges) present challenges that should be assessed more carefully. As such, the CPUC staff suggests separating these items out for additional discussion before moving on to the final round of comments in order to allow for more discussion of these issues. CPUC staff agrees with PG&E and Powerex

¹ http://www.caiso.com/Documents/ThirdRevisedStrawProposal-EnergyImbalanceMarket-Aug13_2013.pdf, page 1.

² See Stakeholder comments - second revised straw proposal, available at:

<http://www.caiso.com/Documents/Stakeholder%20comments%20-%20second%20revised%20straw%20proposal>.

that taking a phased-in approach would be beneficial.³ This could allow extra time to study potential problems that arise and further develop stakeholder input on this important initiative.

2. Convergence bidders could put additional flows in California lines without paying congestion uplift

First, CPUC staff is concerned that convergence bidders may put additional flow on transmission lines to take advantage of new differences between the Day-Ahead (DA) and Real-Time (RT) market prices. The DA market will not take into account EIM schedules (because the EIM will only run in real time), whereas RT settlements will take EIM schedules into account and use transmission congestion within the market optimization. This could create situations where DA schedules are cleared, but then run into transmission constraints that bind in real time due to additional flows put on by the EIM.

Convergence bidders could potentially game such a situation by using so-called “offsetting bids”. Offsetting bids is a strategy where a virtual bidder places a virtual demand bid at a node where demand is high, and a virtual supply bid on the other end of a line supplying that node and where loop flows⁴ are anticipated by the virtual bidder (but not anticipated by the DA schedule). If loop flows do show up in real time that cause the constraint to bind, then the congested node must pay higher prices (congestion uplift) to meet its energy supply and the virtual bidder sells at the higher price. This would result in congestion uplift costs that would accrue to the Real Time Congestion Offset account paid for by ratepayers.

Secondly, CAISO will model EIM flows in the DA as part of the Full Network Model initiative, but this model will not take into account EIM transmission constraints⁵. The CPUC staff is concerned that this could leave open the possibility for systemic price differences between the DA market and RT market (if DA schedules unexpectedly violate transmission constraints in RT it would create a systemic price difference). These systemic price differences could be gamed using offsetting bids, described above, as a result of constraints that bind in real time and cause uplift costs.

Staff is concerned about this issue because there were already significant problems last year with loop flows⁶ and it is possible that the EIM will increase these problems. With the EIM construct, Scheduling Coordinators (SCs) may have a greater ability to create schedules that generate loop flows and cause congestion in the CAISO using the “offsetting bid” strategy laid out above.

³ E.g. *ibid*, page 4.

⁴ A loop flow is where energy scheduled to travel on a line from A to C is partially diverted across lines A to B and then B to C due to congestion on line A to C.

⁵ 3rd Revised Straw Proposal p. 5: “ISO’s day-ahead market will not model EIM Entity’s internal transmission constraints”

⁶ 2012 Annual Report on Market Issues and Performance, Department of Market Monitoring, p. 101

3. EIM participants should bear the cost of the externalities they create in accordance with cost causation principles

While the CPUC staff agrees with PacifiCorp's comments that they should not pay for congestion uplifts caused purely by load in CAISO, the current proposal's load-based approach ignores the fact that PacifiCorp flows may cause congestion within the CAISO system, and vice versa. Cost causation principles should be employed requiring each entity to take responsibility for the congestion uplift charges that it causes to the other's system. Otherwise, the entities exacerbating loop flows and causing congestion uplifts on the other's system could unfairly benefit from inflicting these costs.

For example, if an entity controlling two generators knew that it could increase the output of one generator to cause congestion in the neighboring Balancing Authority Area's line, thereby causing prices to spike at the congested node, then it could profit if its second generator were situated to supply that node such that it could take advantage of the higher price. As a general principle of cost causation, each participant in EIM should at least bear the cost of the externalities that it creates.

Conclusion:

CPUC staff believes that the EIM could be beneficial to ratepayers if the potential for convergence bid gaming is appropriately considered and remedies are provided for, and if there is proper allocation of uplift charges.