

Stakeholder process: Energy imbalance market design

Summary of submitted comments

Stakeholders submitted five rounds of written comments to the ISO on the following dates:

- Round One, 04/19/13
- Round Two, 06/14/13
- Round Three, 07/26/13
- Round Four, 09/06/13
- Round Five, 10/08/13

Stakeholder comments were received from: Arizona Public Service Company, Balancing Authority of Northern California, Bonneville Power Administration, California Department of Water Resources, California Public Utilities Commission, Calpine Corporation, Grant County PUD, Morgan Stanley Capital Group, Inc., PacifiCorp, Pacific Gas & Electric, Portland General Electric Company, Powerex Corp., PUC EIM Group, Southern California Edison, Six Cities, Salt River Project, Silicon Valley Power, Sacramento Municipal Utility District, TransAlta Corporation, Transmission Agency of Northern California, Tri-State Generation and Transmission Association, Inc., Turlock Irrigation District, Utah Associated Municipal Power Systems, Western Area Power Administration, Western Electricity Coordinating Council, Western Power Trading Forum, Western Resource Advocates, Xcel Energy.

Stakeholder comments are posted at:

<http://www.caiso.com/Documents/Energy%20imbalance%20market%20-%20papers%20and%20proposals%7CStakeholder%20comments>

Other stakeholder efforts include:

- Stakeholder meeting, 04/11/13
- Stakeholder meeting, 06/06/13
- Stakeholder meeting (Phoenix), 07/09/13
- Technical workshop conference call, 08/12/13
- Technical workshop conference call, 08/13/13
- Stakeholder meeting (Portland), 08/20/13
- Technical workshop conference call, 09/03/13
- Technical workshop conference call, 09/16/13
- Technical workshop conference call, 09/17/13
- Stakeholder meeting, 09/30/13

	Management Proposal: No charge for transmission service for EIM transfers until alternatives can be informed by operational experience				Management response
	Reciprocal “no charge” for initial EIM transfers	EIM entity defines internal transmission rules	Address operational procedures with neighboring BAAs	Stakeholder initiative using actual operational data	
BPA	Oppose EIM transfers from the ISO will not include TAC charges; however, other real-time interchange schedules will be charged the TAC.	No comment	Support BPA has initiated its own stakeholder process to address EIM operational issues and will continue to work with the ISO and PacifiCorp to resolve issues.	No comment	<p>The initial implementation of EIM will utilize PacifiCorp Energy’s rights it owns to enable EIM transfers between the ISO, PACW and PACE balancing authorities. The reciprocity on no transmission charge for EIM transfers recognizes that transmission customer in all balancing authorities have already paid transmission charges. Thus the initial implementation of EIM does not propose “free” transmission service for EIM transfers. The initial reciprocity approach also recognizes that there are shared benefits of optimized economic transfers that should be shared by parties paying for the transmission.</p> <p>The ISO has committed to commence a stakeholder initiative in Q2 2015 to evaluate other long-term transmission services alternatives. Potential alternatives are discussed in detail in the EIM draft final proposal. The stakeholder initiative will benefit from six months of operation experience of EIM. Actual data on EIM transfers between the ISO, PACW, and PACE balancing authorities will allow stakeholders to</p>
PacifiCorp	Support	Support	Support	Support Data gathered in the first year will inform future options regarding a potential transmission charge.	
PG&E	No comment	No comment	No comment	No comment	
PGE	Oppose Concerned with free riders abusing access to the California Oregon Intertie (COI)	No comment	No comment	Support Should explore a structure that includes an access charge or charge on top of energy.	

Attachment A

	Management Proposal: No charge for transmission service for EIM transfers until alternatives can be informed by operational experience				Management response
	Reciprocal “no charge” for initial EIM transfers	EIM entity defines internal transmission rules	Address operational procedures with neighboring BAAs	Stakeholder initiative using actual operational data	
Powerex	Oppose PacifiCorp will be charging for all uses of its transmission while the ISO will not.	Support PacifiCorp’s requirement for firm transmission rights for generation and load in the PacifiCorp footprint, including remote network resources	No comment	No comment	better assess alternative transmission service designs. No charge for transmission service for EIM transfers is included as a potential long-term transmission service design.
SCE	Support As an interim implementation of the EIM.	No comment	No comment	Support Transmission pricing is needed to align incentives between day-ahead and EIM participation.	
Six Cities	Conditional ISO must be alert for market distortions and be prepared to act promptly.	No comment	No comment	No comment	
SMUD	Oppose	No comment	No comment	Conditional Proposed schedule would result in two years without transmission charges. Reciprocal transmission service should only apply for first year.	

Attachment A

	Management Proposal: No charge for transmission service for EIM transfers until alternatives can be informed by operational experience				Management response
	Reciprocal “no charge” for initial EIM transfers	EIM entity defines internal transmission rules	Address operational procedures with neighboring BAAs	Stakeholder initiative using actual operational data	
WPTF	Conditional Concerned about extended period where EIM is not charged TAC fees.	Oppose ISO should encourage PacifiCorp to adopt alternatives to the need for long-term firm transmission.	No comment	No comment	
Xcel Energy	Support	No comment	No comment	No comment	

	Management proposal: Fully deploy EIM in October 2014	Management response
PacifiCorp	Support During testing phase, if any type of phase implementation becomes warranted, it should appropriately be considered at that time. Also mechanisms to address unintended results should be included.	The initial implementation of EIM is naturally limited since only PacifiCorp will be participating in October 2014 and the EIM transfer capability is limited by the transmission rights owned by PacifiCorp energy. Management believes it is premature to limit EIM transfers at this time. The EIM will go through extensive testing and market simulation prior to go-live. What, if any, phasing approach should be developed after testing and market simulation. If a phased approach is warranted, the ISO will bring the proposal to the
PG&E	Conditional For the first year of operation, the EIM transfer capability between the ISO and PacifiCorp should be limited to 100MW.	
PGE	Conditional Initial implementation should be confined to PacifiCorp footprint. This will allow for more time to review resource	

Attachment A

Management proposal: Fully deploy EIM in October 2014		Management response
	sufficiency, transmission charges, greenhouse gas compliance and potential opportunities to “lean” on the EIM and to plan for the gradual expansion of the EIM footprint.	<p>Board as part of the briefing to the Board on the results of testing and market simulation prior to the start of the EIM. Any ultimate consideration of phasing must be balanced by the benefits of optimized transfers for both ISO and PacifiCorp customers.</p> <p>In addition, the ISO, as the market operator, will seek tariff authority from FERC to limit EIM transfers if unintended results are observed.</p>
Powerex	<p>Oppose</p> <p>EIM should be initially confined to the footprint of PacifiCorp. This will afford additional time for stakeholders to work through the myriad unresolved issues related to governance, carbon, transmission, seams and implementation – issues that largely arise only under an EIM implementation that includes inter-BA transfers.</p>	
SCE	<p>Oppose</p> <p>Initially EIM transfers between the ISO and PacifiCorp should be set to zero. This will allow additional time to resolve complex issues with greenhouse gas proposal and convergence bidding. Then after FERC approves rules needed to support joint optimization would the transfer limit be increased.</p>	

	Management proposal: Resource sufficiency evaluation			Management response
	Approval of hourly resource plan	Load scheduling penalties	Flexible ramping constraint	
PacifiCorp	Support	Support	Support	<p>The resource sufficiency evaluation is designed to address the potential for EIM balancing authorities to lean on other balancing authorities in the real-time market. This is distinct from long-term capacity sufficiency which is under the purview of local regulatory agencies and day-ahead schedule feasibility which is under the purview of WECC.</p> <p>For example, independent of the EIM, under the 15-minute market</p>
PG&E	No comment	Support	<p>Support</p> <p>A downward test should also be considered.</p>	
PGE	No comment	<p>Support</p> <p>Should consider a similar structure for generation</p>	No comment	

Attachment A

	Management proposal: Resource sufficiency evaluation			Management response
	Approval of hourly resource plan	Load scheduling penalties	Flexible ramping constraint	
		schedules.		<p>(FERC Order No. 764), any load serving entity in the WECC is free to submit bids to buy or sell energy with the ISO. The proposed resource sufficiency evaluation ensures that each EIM balancing authority can independently meet its 5-minute load forecast with the resources within its hourly resource plan.</p> <p>The ISO will apply the hourly flexible ramping test on the hourly resource plan of each EIM balancing authority prior to the joint optimization across the EIM footprint. The flexible ramping requirement will be based upon the ISO load forecast and ISO variable energy resource forecasts for the operating hour and be informed by the historical variability and uncertainty of these forecasts. In addition, the requirement can incorporate persistent reductions in non-firm imports in evaluating the uncertainty of these base schedules. If an EIM balancing authority does not have sufficient ramping capability from its resources that have economically bid for that operating hour, the ISO will prevent additional EIM transfers to the insufficient balancing authority from other EIM balancing authorities. Also, the flexible ramping constraint will be enforced independently for the deficient EIM balancing authority.</p>
Powerex	No comment	<p>Conditional</p> <p>Generation over-scheduling must be addressed.</p>	<p>Oppose</p> <p>This is the only capacity test and occurs too late to protect reliability.</p>	
Six Cities	No comment	<p>Conditional</p> <p>No mechanism to ensure sufficient energy bids and that base resources will perform as represented.</p>	<p>Support</p>	
Xcel Energy	No comment	<p>Support</p>	<p>Conditional</p> <p>Prohibiting EIM transfers should not be overly restrictive.</p>	

Attachment A

	Management proposal: Resource sufficiency evaluation			Management response
	Approval of hourly resource plan	Load scheduling penalties	Flexible ramping constraint	
				<p>This will allow the ISO to continue to position available resources to meet future ramping requirements; however, the constraint will be relaxed at penalty prices if ramping capability of participating resources is insufficient. This ensures that the insufficient balancing authority is not relying on other EIM balancing authorities to meet its 5-minute dispatch.</p> <p>The concern about long term capacity is appropriately addressed via the EIM entity's integrated resource planning process. The resource sufficiency mechanisms in the EIM are carefully designed to ensure each EIM Entity has sufficient resources scheduled and offered to meet demand, uncertainties, and differences between market operator forecast and EIM entities base schedules.</p>

Attachment A

	Management Proposal: Market power mitigation by balancing authority area		Management response
	Apply local market power mitigation within each BAA	Include functionality to include scheduling constraints between EIM entities to support EIM transfers	
PacifiCorp	Support	Support EIM transfer constraints could be subject to mitigation if EIM entity BAA market power needs to be addressed.	<p>Deviations by load and generation in the balancing authority areas that participate in EIM will be settled based on the energy imbalance service provided by the transmission provider responsible for providing this service in that BAA. Therefore, settlement of non-participating entities uninstructed deviations will rely on this energy imbalance service. Therefore, it is appropriate to have mitigation rules in place to ensure reasonable prices for the energy imbalance service being provided to all entities in the EIM.</p> <p>In addition, over the next six months, the ISO will coordinate with the Department of Market Monitoring in a structural assessment of market power potential in the EIM footprint and if it is determined additional market power mitigation tariff authority is needed, the ISO will seek Board and FERC approval of this authority prior to go-live. The EIM software will include functionality that allows the application of market power mitigation rules on the constraints enforcing the EIM transfer limits.</p>
Powerex	Oppose Since EIM is voluntary, it is inappropriate to apply market power mitigation.	No comment	
SCE	Support	Conditional Prior to implementation, a structural test for "EIM Market Power". If the EIM footprint is not competitive, market power mitigation must be applied to all resources in the EIM entity.	
Six Cities	Support	Conditional Bids with market power relative to any constraint, wherever located, should be mitigated.	
Xcel Energy	Support	Conditional The BAA boundary should not serve as a limitation on the market power evaluation.	

	Management Proposal: Include greenhouse gas compliance obligation for EIM transfers to ISO				Management response
	Allow participating resource to submit bid adder	Deemed EIM transfers to ISO paid marginal greenhouse gas cost	Energy + GHG adder <= \$1000 bid cap	Greenhouse gas cost reflected in ISO load LMP and EIM transfers out of ISO	
BPA	No comment	No comment	Oppose BPA is legally prohibited from purchasing carbon allowances.	Oppose Requests that LMP outside of California not include greenhouse gas costs if ISO resource is the marginal unit.	Management has worked closely with CARB management and staff while developing the greenhouse gas proposal for EIM. It is important to note that the real-time market falls within the safe harbor provisions regarding resource shuffling. The EIM design accounts for greenhouse gas emission costs for power dispatched to serve California ISO load directly in the objective function of the real-time economic dispatch and directly in real-time prices. The design provides efficient real-time price signals while honoring the intent of the CARB greenhouse gas emissions pricing program within California and not exporting the California pricing program to EIM balancing authorities outside California, except to the extent that generation in those balancing authorities that is voluntarily participating in the EIM and whose energy is dispatched to support EIM transfers to meet California load. The proposed design provides comparable rules between offers from EIM entities and offers from non-EIM areas because the cost of greenhouse gas compliance can be
PacifiCorp	Support	Support	Support	Support	
PG&E	Support	Support	Support	Support	
PGE	No comment	Conditional Concerned proposal may result in emissions leakage.	Conditional No mechanism exists to ensure energy cannot be dispatched to support EIM transfer to California.	No comment	
Powerex	No comment	Oppose The proposed algorithm results in efficient resource shuffling which is inconsistent with the original intent of the CARB program.	Oppose Conditioning EIM participation on an ability and willingness to subject out-of-state resources and activities to CARB's jurisdiction will curtail EIM	No comment	

Attachment A

	Management Proposal: Include greenhouse gas compliance obligation for EIM transfers to ISO				Management response
	Allow participating resource to submit bid adder	Deemed EIM transfers to ISO paid marginal greenhouse gas cost	Energy + GHG adder <= \$1000 bid cap	Greenhouse gas cost reflected in ISO load LMP and EIM transfers out of ISO	
			liquidity.		<p>incorporated into the bid. In addition to address concerns about inappropriate greenhouse gas bidding flexibility the greenhouse bid component is a daily component instead of hourly.</p> <p>The ISO will include in the 2013 stakeholder initiatives catalog the potential EIM design enhancement that would allow a resource to select a flag to prevent it from being dispatched to meet ISO load. This option is not needed in the initial implementation of EIM with PacifiCorp; however, as additional balancing authorities seek to join the EIM there may be limited circumstances where a resource is not allowed to participate in California that would justify implementation of the flag. These limited circumstances should not reduce the benefits of the EIM in meeting load with the most efficient resources across the entire EIM footprint.</p>
SCE	<p>Oppose</p> <p>Allows non-cost based strategic bidding and price discrimination toward California.</p>	No comment	<p>Oppose</p> <p>Additional safeguards and restrictions on bid adder needed.</p>	<p>Oppose</p> <p>Additional safeguards and restriction that link bid adders needed.</p>	
Six Cities	Support	<p>Support</p> <p>Proposal generally appears reasonable.</p>	Support	Support	
WPTF	<p>Support</p> <p>Significant enhancement to previous design proposals</p>	Support	Support	Support	
Xcel Energy	<p>Support</p> <p>Does not eliminate potential new compliance obligations, but bid provides more flexibility than the previous straw proposals.</p>	Support	Support	Support	

	Management Proposal: BAA congestion balancing account based upon constraints in BAA				Management response
	Calculated for constraints in each BAA	No transfers of account to other BAAs based on EIM transfers	ISO convergence bidders allocated charges on EIM entity constraints	No change to convergence bidding settlement on ISO constraints	
PacifiCorp	Support	Support	Support	No comment	<p>Management believes that the proposed settlement of real-time congestion uplifts appropriately allocates costs and manages seams issues between EIM balancing authorities.</p> <p>The ISO's full network model expansion stakeholder initiative, which will be presented to the Board in December, improves modeling consistency between the day-ahead and real-time market which will reduce real-time loop flow. This initiative addresses ISO load serving entities' concerns that convergence bidding positions can systematically increase the real-time congestion uplift due to modeling inconsistencies.</p> <p>In the ISO day-ahead market, the ISO will include estimates of external balancing authority areas' real-time base schedules, including EIM and non-EIM entities. For EIM entities, the estimated base schedules used may be those submitted by the EIM entity balancing or those derived from the load forecast and historical distribution of generation.</p>
PG&E	Support	Support	Support	<p>Oppose</p> <p>ISO should immediately commence a stakeholder initiative to allocate real-time congestion costs to convergence bidders.</p>	
SCE	<p>Conditional</p> <p>By design, the EIM will introduce modeling differences between day-ahead and real-time. If predictable, day-ahead and real-time differences can be exploited by convergence bids to increase real-time congestion uplifts.</p>	No comment	<p>Conditional</p> <p>Request MSC opinion if this approach is sufficient.</p>	<p>Oppose</p> <p>ISO should immediately commence a stakeholder initiative to allocate real-time congestion costs to convergence bidders.</p>	
Six Cities	Support	<p>Oppose</p> <p>If EIM base schedules impact ISO real-time congestion, the cost should be allocated to the EIM entity.</p>	Support	<p>Oppose</p> <p>EIM will result in modeling differences between day-ahead and real-time. Convergence bidders should be allocated costs due to</p>	

Attachment A

	Management Proposal: BAA congestion balancing account based upon constraints in BAA				Management response
	Calculated for constraints in each BAA	No transfers of account to other BAAs based on EIM transfers	ISO convergence bidders allocated charges on EIM entity constraints	No change to convergence bidding settlement on ISO constraints	
				modeling differences	<p>Since EIM balancing authority constraints are not modeled in the ISO day-ahead market it is inappropriate for the real-time settlement of convergence bid to result in charges to an EIM balancing authority's real-time congestion balancing account. While ISO convergence bidders can create credits to an EIM balancing authority's, it would create a disincentive to EIM balancing authorities resolving congestion prior to the EIM if out-of-market payments are made to ISO convergence bidders.</p> <p>In addition, the ISO can include market functionality to account for flow entitlements of the ISO on EIM balancing authority constraints and the EIM balancing authority on ISO constraints. Based upon market simulation results, the ISO will seek tariff authority to activate this market functionality if material impacts are observed on each balancing authority area's real-time congestion balancing account prior to or after October 2014 go-live.</p>
WPTF	Support	Support	Oppose Allocation should be symmetrical and included both charges and credits.	Support	
Xcel Energy	<p>Conditional</p> <p>Concerned that proposal does not assure or properly identify curtailment obligations associated with external impacts.</p>	No comment	No comment	No comment	