

**Stakeholder Comments**  
**FERC Order 764 Market Changes Straw Proposal Technical Conference**

Submitted by	Company	Date Submitted
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Southern California Edison (“SCE”) offers the following comments on the California Independent System Operator’s (“CAISO’s”) December 18, 2012 FERC Order 764 Market Changes Technical Conference. We encourage the CAISO to continue to focus on resolving and implementing a 764 structure as it holds the promise to resolve some of the most serious known issues in the current market design.

**1. The Transmission Reservation process provides limited price certainty while maintaining some of the market inefficiencies associated with the hour-ahead market. CAISO should explore alternatives.**

To provide transactors with some price certainty, CAISO has introduced a complex Transmission Reservation process that preserves some financial settlement in the hour-ahead market. Given the numerous market inefficiencies associated with the disconnect between the hour-ahead and real-time markets, CAISO should consider alternatives to the hour-ahead Transmission Reservation process. The Transmission Reservation process and the “explicit” transmission-only reservations, in particular, have serious implications for market inefficiency, will continue causing uplift, and may create gaming opportunities.

SCE does not support transmission-only reservations and has significant concerns with the Transmission Reservation process as a whole. Especially considering that there are other mechanisms available to hedge risk, discussed *intra*, the Transmission Reservation process and its associated costs may be unnecessary.

The benefit provided by the energy sales portion of the Transmission Reservation process is that it offers some price protection in the form of hour-long fixed Intertie Scheduling Limit shadow costs. However, this price protection seems minimal as most of the Locational Marginal Price (“LMP”) will still be subject to 15-minute price fluctuation. Both the System Marginal Energy Component (“SMEC”) and the internal congestion shadow cost of the Marginal Congestion Component (“MCC”) will be subject to fluctuation on a 15-minute basis. If the Intertie Scheduling Limit shadow cost is, in fact, a significant portion of the LMP at the interties, then the CAISO should provide empirical evidence demonstrating that the Transmission Reservation process will provide substantial price protection.

Rather than creating a complex new feature such as the Transmission Reservation process to offer, at best, partial price protection at the interties, transactors could use a combination of the

proposed hourly block bids<sup>1</sup> in conjunction with 15-minute dispatchable bids to mitigate price risk. Transactors with hourly block schedules are price takers in the 15-minute market. To protect themselves against unfavorable and unexpected 15-minute outcomes, they could also submit a counterflow bid (subject to 15-minute dispatch) to hedge themselves against extraordinarily low 15-minute prices.

For example, if an importer submits a \$40 bid for an hourly block sale and it clears the market, that importer may want the ability to avoid occasional 15 minute payments due to periodic negative prices. To do so, the importer could simultaneously submit a low priced export bid, for example -\$0.01, that is eligible for 15-minute dispatch. If any 15-minute prices drop to -\$0.01 or below, this 15-minute bid would be dispatched by the CAISO. The importer could then either (1) schedule a new flow associated with this export bid or, (2) simply reduce its import schedule associated with the hourly block \$40 bid.

In sum, given the hourly block scheduling option in conjunction with the 15-minute dispatch option, the CAISO should consider abandoning the Transmission Reservation proposal entirely. Analysis would be helpful to show just how much price certainty the CAISO's proposal offers, but we suspect it is low. Ultimately, market participants should let the CAISO know how comfortable they would be simply having the hourly block in conjunction with the 15-minute dispatch options.

**2. SCE does not support charging deviations the weighted average of the 15 and 5 minute prices. The uplift costs created by CAISO's net load forecast error should be allocated based on cost-causation.**

Changes in CAISO's forecast of net load between the 15 and 5 minute markets may result in uplift. For example, if CAISO over-procures in the 15-minute market and sells the excess back in the 5-minute market at a loss then uplift is created. CAISO should not "bake" this uplift into the price charged to load deviations. Rather, there should be transparency over how much uplift the new design generates and CAISO should allocate the uplift based on cost-causation (e.g. proportionally allocate uplift to entities contributing to the errors in CAISO's 15-minute forecast).

The use of CAISO's proposed methodology of weighted average LMP of the 15 and 5 minute markets would disguise uplift costs and unfairly charge uplift costs only to those load serving entities that have deviated. To see this, assume that in the day-ahead market load procured 35,000 MW at \$43/MW. Then, in the 15-minute market, CAISO forecasts that load is 37,000 MW so it procures the extra 2,000 MW at a price of \$45. However, actual real-time load turns out to be 36,000 MW. Thus, the CAISO over-procured from the 15-minute market and has to sell back 1,000 MW at a loss at the 5-minute market price of \$44.

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<sup>1</sup> SCE strongly supports CAISO's newly proposed hourly block scheduling practice in the 15-minute market, as it will provide the scheduling certainty necessary for many intertie transactors to participate in the CAISO market. "FERC Order 764 Compliance Technical Conference Presentation," CAISO, 18 December 2012, page 14, [http://www.caiso.com/Documents/Presentation-Agenda-FERCOrder764MarketChangesTechnicalWorkshopDec18\\_2012.pdf](http://www.caiso.com/Documents/Presentation-Agenda-FERCOrder764MarketChangesTechnicalWorkshopDec18_2012.pdf).

In this scenario, there is only 1,000 MW of net load that deviated between the day-ahead and the real-time markets. That deviation of 1,000 MW will be charged the weighted average real-time price, which is calculated as the difference between the cost of procuring 2,000 MW in the higher price 15-minute market (2,000 MW x \$45 = \$90,000) minus the revenue returned by reselling 1,000 MW in the lower price 5-minute market (1,000 MW x \$44 = \$44,000) divided by the 1,000 MW of net load deviation (\$46,000 / 1,000MW = \$46/MW). The resulting average weighted price is \$46/MW for each of the 1,000 MWs of deviation, even though the market price never went above \$45. See Table 1, below, for this example in table format.

**Table 1.** Example of uplift unfairly charged to deviators using weighted average LMP of the 15 and 5 minute markets.

Market	Price	Load	Change in load from previous market	Change in cost from previous market
Day-Ahead	\$43	35,000 MW	NA	NA
15-Minute	\$45	37,000 MW	+ 2,000 MW	+ \$90,000
5-Minute	\$44	36,000 MW	- 1,000 MW	- \$44,000
			+ 1,000 MW	+ \$46,000
				/ 1,000 MW
			<b>Cost to deviators</b>	<b>= \$46 / MW</b>

As a result, using the weighted average real-time price unfairly charges uplift costs only to load deviators. In extreme cases, market prices could be reasonable yet load deviators could be charged extraordinarily high prices for their deviation.<sup>2</sup>

The uplift created by discrepancies between the 15 and 5 minute markets should be charged to those entities whose variability and uncertainty caused CAISO’s inaccurate procurement. Using cost-causation principles, CAISO should explore the most equitable and transparent mechanism for both identifying and allocating these uplift costs.

**3. CAISO should implement a “worse-of” settlement rule to discourage uninstructed deviation.**

Given that Order 764 will result in even more frequent scheduling changes, CAISO should implement a mechanism to discourage uninstructed deviation from CAISO-instructed schedules. As presented by SCE in previous comments, CAISO should implement a “worse-of” settlement rule that would pay the least beneficial of the 15 or 5 minute settlement price for uninstructed deviations.<sup>3</sup>

<sup>2</sup> If, in the example introduced above, CAISO bought an extra 2,000 MW in the 15-minute market but then actual load came in only 1 MW over the day-ahead procurement, that 1 MW would be charged a price of \$2,044/MW.

<sup>3</sup> “FERC Order 764 Compliance 15-Minute Scheduling and Settlement Straw Proposal Stakeholder Comments,” Southern California Edison, 16 November 2012, page 3, [http://www.caiso.com/Documents/SCE-Comments-FERC\\_Order764MarketChangesStrawProposal.pdf](http://www.caiso.com/Documents/SCE-Comments-FERC_Order764MarketChangesStrawProposal.pdf).

Viewed another way, the philosophy of the design should be that a favorable 5 minute price is for *instructed* deviations.<sup>4</sup> As managing flexibility becomes more and more crucial, our core market design should recognize and reward parties that closely follow CAISO instructions. However, parties acting against instructions are part of the flexibility problem, not part of the solution, and should not have incentives to seek financial gain by disregarding instructions.

The “worse of” settlement also eliminates incentives for implicit virtual bids between the 15-minute and 5-minute settlements accomplished by physical importers ignoring 15-minute dispatch instructions. A “worse-of” mechanism would encourage intertie transactors to submit only feasible schedules and follow 15-minute dispatch instructions, and it would discourage entities from chasing higher price markets.

#### **4. SCE does not support Intertie Convergence Bids (“ICBs”) until the new Order 764 market is implemented and shown to be working effectively.**

The Order 764 market changes will be one of the most significant redesigns of the California electricity market since MRTU. Given this major change, and in light of the many unforeseen negative consequences caused by virtual bidding in the past, SCE urges CAISO to ensure that the newly redesigned physical market works effectively before reintroducing ICBs. CAISO should mirror the approach it took during its last major market redesign—MRTU began without virtual bids at all and only after the physical market was up and somewhat stable did CAISO allow virtual bids. If CAISO implements a major market redesign at the same time it reintroduces previously ICBs, an efficient physical market structure could be tarnished by problematic interplay with ICBs.

Once the new Order 764 physical market functions well, CAISO should approach the considerable task of reinstating ICBs. At that time, CAISO should explore remedies it has not frequently discussed in the past. While SCE supports CAISO’s decision to not pursue “Option A” as a solution to the dual-constraint issue given that it can be gamed, the day-ahead tagging limits remedy is not a sufficient solution either. As SCE has suggested in the past, CAISO should consider either a Physical Counterflow Feasibility Run<sup>5</sup> or a Virtual Intertie Bids (“VIBs”)<sup>6</sup> solution to the dual-constraint problem. Moreover, it appears the best place to focus on an ICB solution is in the structure of the integrated Day-Ahead Market (“iDAM”). That is, rather than a sequential Physical Counterflow Feasibility Run, the iDAM may be able to allow ICBs and ensure physical feasibility simultaneously.

SCE looks forward to continued work with CAISO on the Order 764 Market Changes Proposal.

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<sup>4</sup> Typically load is not dispatchable and does not submit 15-minute schedules. Thus, load would not be subject to the “worse-of” pricing rule.

<sup>5</sup> A Physical Counterflow Feasibility Run would not impact physical liquidity and would place uplift risk only on virtual counterflow parties based on cost-causation principles. See “Solving the Dual-Constraint – a Physical Counterflow Feasibility Run”, Southern California Edison, 30 April 2012, <http://www.caiso.com/Documents/SCEpresentation-PhysicalReplacementFeasibilityRun-IntertiePricingSettlement.pdf>.

<sup>6</sup> A Virtual Intertie Bids (“VIBs”) solution achieves the goals of virtual bidding hedging, but avoids the structural problems related to revenue sufficiency and uplift. See “Framework to Reintroduce Virtual Bidding at the Interties,” Southern California Edison, 17 February 2012, [http://www.caiso.com/Documents/SCEPresentation-IntertiePricing\\_Settlement.pdf](http://www.caiso.com/Documents/SCEPresentation-IntertiePricing_Settlement.pdf).