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Stakeholder Comments

Real Time Imbalance Energy Offset Revised Draft Proposal (aka: Impact of Convergence Bidding on Interties Revised Straw Proposal, June 10, 2011)

Submitted by	Company	Date Submitted
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Background:

The CPUC staff appreciates the opportunity to provide comments on the CAISO's Impact of Convergence Bidding on Interties (Real-Time Imbalance Energy Offset Issue Paper) Revised Straw Proposal.[1] The CAISO revised straw proposal highlights that the Real-Time Imbalance Energy Offset or neutrality account (Charge Code 6477) allocates surpluses or deficits on a pro rata basis to metered load and exports. Since January 2010 the hour-ahead scheduling process (HASP) price has been consistently lower than the real-time dispatch (RTD) price. Convergence Bidding starting in February of 2011 allowed market participants to take offsetting positions by submitting internal virtual demand bids equal to physical import positions based on the HASP and RTD prices. The internal virtual demand bid clears against real-time market price while the intertie virtual supply positions clear against HASP price. The consistently higher RTD price and lower HASP price results in a significant financial arbitrage gain (the difference between RTP and HASP price times MW bid amount) to a party where with virtual bidding the offsetting party buys power at a lower HASP price and sells power at a higher RTD price. As a result, the CAISO reports that the average charge to metered load and exports from January 2010 through April 2011 has been $11.7 million[2] per month and until just recently has been reaching between $15 and $ 20 million (30-day rolling cumulative)[3].

In April 2011 there was a noticeable decline in the volume of and the dollar amount of impact to the Real Time Imbalance Energy Offset account (RTIEO). The decline coincides with the start of this stakeholder initiative as well as some software

[1] http://www.caiso.com/2b99/2b99b8ae61150.pdf
[2] Impact of Convergence Bidding on Interties, Revised Straw Proposal, paragraph 3, page 6, June 10,2011.
[3] CAISO: Impact of Convergence Bidding on Real-Time Imbalance Energy Offset, Figure 2, pp. 7, April 27, 2011.

enhancements implemented in the market. It appears there has been no identifiable correlation between the decrease in volume or dollar impact with the CAISO market enhancements, nor can we tell if the changes are due to market participant behavioral changes associated with the heightened scrutiny and focus on virtual bidding and implicit virtual bidding at the interties.

The CPUC staff understands that the magnitude of the rise in the real-time imbalance energy offset charges is not necessarily due to true scarcity conditions. And, the exceptionally high imbalance charges impact ratepayers adversely while providing no market efficiency. Indeed, it does not appear that the ratepayers, or the market, receive any benefit from the arbitraging activity resulting from the HASP and RTD price divergence.

The price divergence is creating the opportunity for scheduling and/or bidding in the HASP and at the interties to arbitrage the systemic pricing anomaly resulting in unnaturally large real-time imbalance energy charges flowing directly to load. CAISO's Department of Market Monitoring (DMM) reports that the causes of the large real-time imbalance charges include but are not limited to forecasting, modeling, operator behavior, and market design.

CPUC Staff Comments:

Convergence Bidding Liquidation and Settlement Timing

The current convergence bidding design liquidates virtual supply and demand during HASP, but the settlement prices for internal and intertie nodes occur at different timeframes. The liquidation of virtual supply/demand for internal nodes occurs prior to the RTD market optimization run which results in binding settlement LMPs for internal nodes. The liquidation of virtual supply/demand on the interties is aligned with the HASP market optimization run which results in binding settlement LMPs for the interties. Therefore, the current market design has three binding settlement LMPs for physical supply/demand (IFM, HASP for interties, RTD for internal generation/load), three binding settlement LMPs for virtual supply and demand (IFM HASP for interties, and RTD for internal nodes), but only two liquidation market optimizations for virtual supply and demand (IFM and HASP). Since virtual supply and demand are not liquidated during the same market optimization run as the binding settlement LMPs for internal nodes, the ability for virtual bids on the interties to drive convergence between HASP and RTD prices is not

The fundamental market design issues cannot be fixed with a superficial or tangentially expedient "enhancement". While the temporary solution proposed by Powerex may have merit, and though the CAISO raised the question of imports becoming at risk "potential reliability risks given the importance of imports to the ISO meeting load". It would be helpful if the CAISO could provide an analysis or study which supports this concern.

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It is understood that currently the ISO operators face periods of potential import shortages where they must rely on internal generation and if, over time, in a liquid market, this sends the appropriate price signals to generation resources and power importers, then they would be expected to respond accordingly. So it is unclear from the hypothetical rationale against Powerex's proposal that importers would avoid selling their generation into California markets and that the level of imports would eventually be at risk.

Redesign of Real-Time Imbalance Energy Offset

The ISO has been working on operational improvements to address the HASP and RTD price differentials. These efforts have resulted in a significant reduction in Real-Time Imbalance Energy Offset costs. With the reduction in the impact of convergence bidding to the Real-Time Imbalance Energy Offset, the ISO and stakeholders decided to look for intermediate solutions to the price differences between HASP and RTD.

It is not clear whether there is a correlation between the "enhancements" and the reduction in RTIEO, or whether the reduction is due to the high profile the RTIEO issue has received in the stakeholder initiative which has resulted in altering market participant bidding behavior. It would be helpful if the ISO could provide some analysis that directly correlates the enhancements to RTIEO reductions.

Significant action must be taken to eliminate the known market design flaw that unjustly burdens load and provides implicit and explicit virtual bidders an unreasonable market advantage through a predictable price arbitrage opportunity. The CAISO's Department of Market Monitoring first identified the HASP to RTM virtual bidding price arbitrage issue in their 2009 third quarter report, and noted that this issue "represented one of the most critical areas for further improvement"[4]. Therefore, it appears the only viable short term solution is the cessation of virtual bidding at the ties.

If imports/exports and internal demand/generation were cleared in the same market, the divergence between HASP pricing and RTD pricing would not result in Real-Time Imbalance Energy Offset uplift costs.

[4] http://www.caiso.com/2457/2457987152ab0.pdf, DMM – Quarterly Report on Market Issues and Performance, revised 12-23-09, pg. 1 - "Despite these improvements, significant systematic price divergence has continued to occur at times, particularly between the HASP and RTD. This price divergence has been coupled with a trend for the ISO to export relatively large quantities of additional energy in the HASP (at low prices), and then dispatch additional energy within the ISO in RTD (at significantly higher prices). This pattern of "selling low" in HASP and "buying high" in RTD has continued to create substantial revenue imbalances that are recovered based on each participant's metered loads through Real Time Energy Imbalance Energy Offset charges. Chapter 1 of this report includes a discussion of some of the potential root causes of these trends, and some of the potential solutions being implemented or explored by the ISO to reduce these price divergences. The Department of Market Monitoring (DMM) believes that the price divergence between HASP and RTD represents one of the most critical areas for further improvement in the ISO's new market software and processes."

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Intermediate Term Options from Prior Straw Proposal
Settlement of Import/Exports based upon RTD

Pay as Bid

Under the Pay as Bid option, HASP timelines and bidding processes would remain unchanged; however, the HASP settlement for physical intertie transactions and liquidation of intertie virtual demand/supply would be eliminated. All intertie virtual demand/supply will be liquidated at the RTD price. The HASP process would determine indicative prices used to select which HASP intertie transactions that are accepted….

The ISO agrees with several stakeholders ***that this would be as step backwards*** *from the LMP market design. The previous concerns with bidding behavior that takes into consideration a market participant's expectation of real-time pricing versus bidding the resource's marginal cost could impact market efficiency.*

CPUC staff does not support this option at this time for the reasons noted by the ISO above.

Pay as Bid or Better

Under the Pay as Bid or Better option, HASP timelines and bidding processes would remain unchanged; however, the HASP settlement for physical intertie transactions and liquidation of intertie virtual demand/supply would be eliminated. All intertie virtual demand/supply would be liquidated at the RTD price. The HASP process would determine indicative prices used to select the HASP intertie transactions that are accepted…. The difference between the bid price and the actual RTD price would be included as a charge to the Real-Time Imbalance Energy Offset.

Pay as Bid or Better received less stakeholder support than the Pay as Bid option. For similar reasons addressed above, the ISO does not believe that this option is a viable intermediate term option.

CPUC staff does not support this option at this time for the reasons noted by the ISO above.

Negative Deviations to HASP Imports/Exports

In stakeholder comments, Powerex identified a concern with the treatment of HASP deviations. An intertie resource that sells energy in HASP, but fails to deliver is not subject to imbalance charges at the RTD price. Instead, failure to deliver on HASP commitments results only in (a) non-payment of the HASP price (up to 10% of the participant's total HASP respective supply and demand volume per month); or (b) modest formula-based penalties for volumes beyond the first 10%. A non-performing HASP sale results in the ISO purchasing that energy from internal resources in the RTD. Failure to perform on HASP awards should be charged the RTD price, independent of the magnitude, frequency or reason for such failure. In stakeholder comments, many stakeholders agreed that failure to perform on HASP awards should be charged the RTD price.

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CPUC staff supports this provision in the proposal to charge HASP awards that fail to perform the RTD price independent of magnitude, frequency or reason for such failure.

Changes to the Allocation of Offset

The offset is currently allocated to all SCs based upon a pro rata share of their measured demand (i.e., metered load and exports) excluding the demand quantity for the valid and balanced portion of self-schedules related to transmission ownership rights in real-time and net measured demand of load following metered subsystems.

However, the ISO is proposing to add IFM imports that are subsequently reduced in HASP to be included in the allocation of the Real-Time Imbalance Energy Offset to address potential concerns with increased implicit virtual bidding.

As noted above it remains unclear whether the recent reduction in RTIEO charges due to explicit virtual bidding is due to the ISO's enhancements. Staff cannot see any appreciable decrease in implicit virtual bidding and that activity remains largely profitable[5]. Regardless of the level of the RTIEO at this moment the recent past tells us that it can grow significantly in a very short period of time. Therefore, unless implicit virtual bidders participate in the consequences for their actions, which potentially put grid reliability at risk, then they will continue to arbitrage the predictable price differences between HASP and RTD to the detriment of load. CPUC staff supports immediate consideration of prioritizing RTIEO cost allocation methodology design changes based on cost causation principles.

Enable Convergence Bidding to converge HASP-RTD Prices

Currently, internal and intertie virtual bids are liquidated in HASP which results in balanced internal virtual demand/supply and external virtual supply/demand. ***These bids do nothing to converge HASP and RTD prices****. However, if internal virtual demand/supply were treated as self schedules in HASP and liquidated in the subsequent RTD runs, then the internal convergence bids would be aligned with the pricing of internal generation/demand. Intertie virtual demand/supply would be liquidated at the HASP price and aligned with binding HASP physical import/export awards. Since virtual bids and physical bids are settled at the same time (HASP for external, RTD for internal), prices should converge across IFM, HASP and RTD based upon market participant bidding strategies.*

CPUC staff supports suspending virtual bidding at the interties as currently designed (see prior comments).

Emergency Filing of Settlement Rule

Threshold for Emergency Filing

[5] Ibid, pg 12, Figure 2.

The ISO will establish emergency filing if the 30-day rolling cumulative quantity real attributable to balancing and offsetting virtual intertie positions and virtual internal positions exceeds $20 million based on the differential of the system marginal energy component of HASP and RTD prices.

CPUC staff continues to favor a lower threshold of $15 million; even at a cumulative trailing 30 day threshold of $15 million the potential for incurring RTIEO charges of $180 million a year is considered excessively generous.

Remove Convergence Bidding on Interties from Current Design

The ISO proposes to not allow interties to be eligible nodes for convergence bidding under the current market design. In evaluating all options to address both the Real-Time Imbalance Energy Offset issue and the Price Inconsistency Caused by Intertie Constraints issue, the ISO believes that removing convergence bidding at the interties from the current market design is the most effective way to resolve both issues. The ISO believes the benefits of continuing to allow convergence bidding at the interties do not outweigh the current issues identified by market participants. The ISO does recognize that another potential option is to make no changes to the market design, but this would require market participants to accept the current issues identified with the existing market design. Stakeholder comments on the proposed solutions vetted through both stakeholder initiatives has not shown broad support for any of the options. In addition, stakeholders and the ISO have not been able to identify alternative options that address identified issues without creating new market efficiency issues or reliability concerns.

CPUC staff supports the CAISO proposal to suspend virtual bidding at the interties under the current design. The purported benefits of continuing to allow convergence bidding at the interties does not outweigh the actual costs. In fact, CPUC staff has not seen any benefits from virtual bidding at the ties since February 1, 2011. Indeed, staff is not aware of any noticeable price convergence between HASP and RTD which could be directly attributed to convergence bidding at the interties.

Measures to Address Potential Implicit Virtual Bidding

Deviations from HASP Schedules Settled at RTD price

A non-performing HASP awarded import results in the ISO purchasing that energy from internal resources in the RTD. A non-performing HASP awarded export results in the ISO reducing energy for internal resources in RTD. Both actions can result in divergence between HASP prices and RTD prices. The ISO proposes that failure to perform on HASP awards will be charged the RTD price, independent of the magnitude, frequency or reason for such failure. The HASP Schedules Decline Charge as outline in tariff section 11.31 will remain unchanged.

CPUC staff supports charging HASP awards the RTD price when the generator/importer/SC fails to perform with the decline charge remaining intact. See prior comments above.

HASP Import Reductions Included in Real-Time Imbalance Energy

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Offset Allocation

Currently, the Real-Time Imbalance Energy Offset is allocated to measured demand which includes metered demand and exports. If a market participant had an IFM import schedule and wanted to reduce the MW quantity that would flow, the market participant has two options. The market participant can submit an export bid in HASP, and if the export bid clears HASP the market participant is subject to the Real-Time Imbalance Energy Offset allocation. However, if the market participant submitted a HASP decrement bid to the IFM import schedule, the market participant would not be subject to the Real-Time Imbalance Energy Offset. Since both transactions result in the same MW flow of energy, the ISO proposes to include the MW quantity of IFM imports reduced in HASP in the allocation of the Real-Time Imbalance Energy Offset. For example, if a market participant has a 100MW IFM import and successfully cleared a 30MW decrement bid in HASP, 30MW would be included in the allocation of the Real-Time Imbalance Energy Offset.

CPUC staff supports this modification that recognizes the decremental export bid in the allocation of RTIEO costs.