



Addendum to the Draft Final Proposal

Bid Cost Recovery Mitigation Measures

April 27, 2012

Bid Cost Recovery Measures

Prepared for discussion at a stakeholder conference call – May 3, 2012

1 Introduction and background

Bid cost recovery (BCR) is the process by which the ISO ensures that scheduling coordinators are able to recover start up, minimum load costs and bid costs for generating units, system resources (resources located outside of the ISO balancing authority area) and participating loads. Currently, the BCR calculation is performed over the entire trade day and netted across the day-ahead and real-time markets for that trade day.

The ISO has proposed as part of the RI-MPR Phase 1 initiative to change the bid cost recovery rules so that bid cost recovery amounts calculated for the DA and RT markets, respectively, are not netted together. This change, which was approved by the ISO Board in December 2011, is an important element of the effort to efficiently integrate renewable resources because it will provide increased incentives to provide economic bids in the RT market. More economic bids in the RT market, and fewer self-schedules, will be vital to managing the grid reliably as more variable energy resources (VERs) come online.

The separation of the netting of the day-ahead and real-time BCR calculations can lead to increased incentives to artificially increase bid cost recovery payments by persistently deviating from ISO dispatch. Consequently, the ISO recommended in its draft final proposal on BCR mitigation measures that a persistent uninstructed energy (PUIE) check be implemented to detect such circumstances, and to disqualify resulting real-time energy revenue shortfall from the real-time BCR calculation.

This addendum to the draft final proposal on BCR mitigation measures the ISO provides some clarification with respect to the energy types to which the PUIE check is proposed to apply. Further, the addendum explains how the different energy types to which the PUIE check will be applied will be treated. These changes are made in response to feedback by the Department of Market Monitoring.

Finally, the addendum provides corrections to errata in the draft final proposal.

2 Process and Timetable

The timeline for the brief stakeholder process associated with this addendum is included below:

Date	Event
April 27, 2012	Post addendum to the draft final proposal
May 3	Stakeholder conference call
May 8	Stakeholder comments due *
May 16-17	ISO Board of Governors meeting

* Please submit written comments to BCRMitigation@caiso.com

3 Overview of the addendum to the draft final proposal

The following items are detailed in this addendum to the draft final proposal:

1. The ISO clarifies that the approach as outlined in the draft final proposal for applying the real-time PUIE check applies to residual imbalance energy. Real-time energy revenue shortfall attributable to PUIE will not be counted in the real-time bid cost recovery calculation. This applies to situations in which optimal energy or real-time residual imbalance energy contribute to the real-time energy revenue shortfall;
2. PUIE will factor in the impact of persistent uninstructed deviations on both optimal energy cost recovery and RIE cost recovery.
3. The ISO provides a correction to errata in the draft final proposal.

3.1 The persistent uninstructed imbalance energy check applies to residual imbalance energy

Under the current ISO tariff, a resource's real-time uninstructed energy is not considered for bid cost recovery in settlement intervals associated with deviations from ISO dispatch instructions of the same interval. However, real-time dispatch uses a resource's telemetry value¹ as the basis for deriving the resource's initial condition. Therefore, if a resource's dispatch is ramp-constrained in an interval, then the uninstructed deviations of the generator in previous intervals will have a cumulative effect on the amount of energy of the current settlement interval that is subject to bid cost recovery. This is the motivation for the proposal to implement the PUIE check.

Residual Imbalance energy is energy resulting from instructions in a previous hour or energy leading up to next hour's economic level. When a resource deviates from its instructions that are initialized by dispatch levels in the previous hour, residual imbalance energy may be inappropriately increased by prior uninstructed imbalance energy. The ISO here wishes to clarify that the PUIE extends to energy revenue shortfall attributable to persistent uninstructed energy deviations whether that energy is categorized as uninstructed imbalance energy or as residual imbalance energy. This is consistent with the intent of the original proposal, and is simply a clarification.

3.2 Payment for residual imbalance energy when bid price exceeds the market-clearing price

Analysis of instances of residual imbalance energy has shed light on a potential problem with the payment for that energy. In particular, uninstructed deviations from ISO dispatch that are categorized as residual imbalance energy are paid at the bid price for the resource (if there is one in the previous or next hour) rather than at the LMP for the current interval. The ISO proposes that, in the case that the persistent deviation pattern is detected, that residual imbalance energy be paid the LMP.

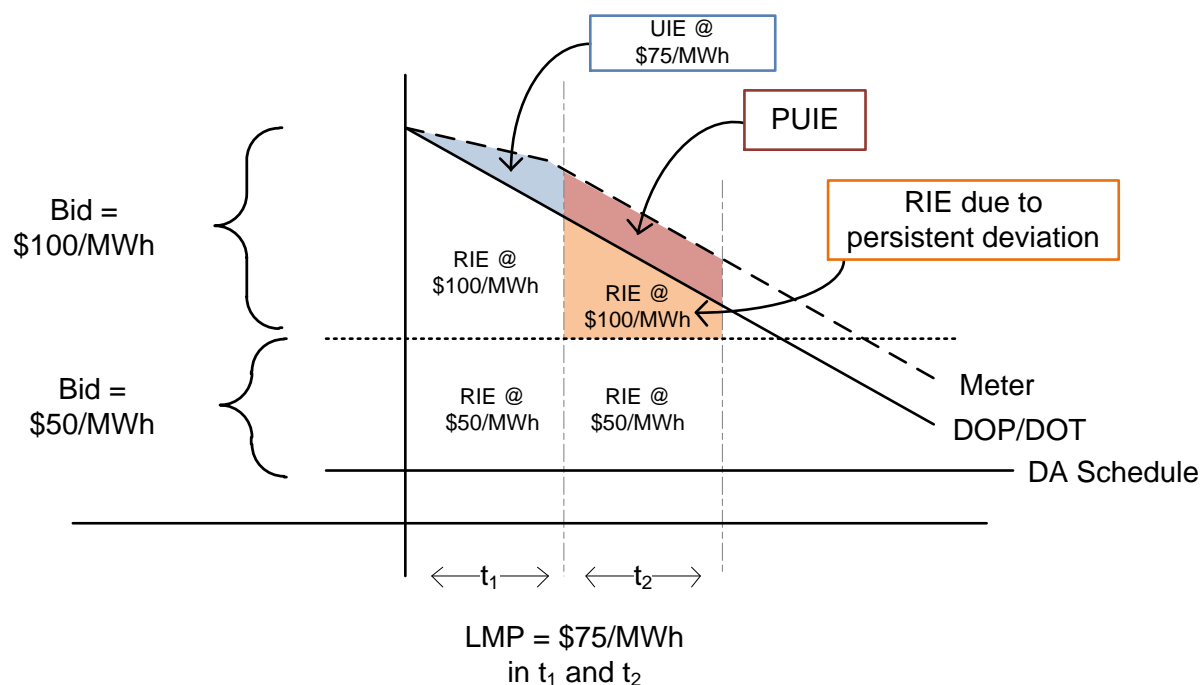
This is illustrated in the diagram below. A few items to note:

- Telemetered output (Meter) is represented by the solid downward-sloping line.
- The ISO dispatch (DOP/DOT) is the dashed downward-sloping line.

¹ Telemetry refers to either actual telemetered value or state-estimator value.

- The bid amounts (or bid curve) noted at the left-hand side shows that at the lower quantity, the bid price is \$50/MWh, and above the horizontal dotted line the bid price is \$100/MWh. This bid curve applies to both intervals shown here.
- The LMP for both intervals is \$75/MWh

Figure 1: Current payment for residual imbalance energy



In interval 1 (t_1), energy above the day-ahead schedule and below the dotted line is residual imbalance energy, and is settled at the price of the bid in the previous interval (\$50/MWh). Likewise, energy in the range where the resource's bid curve from the prior hour is for \$100/MWh, between is settled at that \$100/MWh so long as that energy is less than the ISO dispatch (DOT). Above the DOT, the energy is deemed "uninstructed imbalance energy" and is settled at the LMP.

In interval 2 (t_2), note that the same pattern applies for the areas below the DOT line. However, above the bid price, and below the DOT/DOP is residual imbalance energy is settled at the bid price of \$100/MWh. This is represented as the orange area in the diagram above. In this case, the fact that there is RIE is due to the persistent downward deviation.

The ISO proposes to close this gap in the current settlement of RIE by settling RIE at the LMP for the contemporaneous interval. In summary,

- If there is no PUIE, then RIE settles as today.
- If there is PUIE (as determined by the evaluation of Measures A and B, detailed in the draft final proposal) then
 - If persistent upward deviations trigger the PUIE check, then positive RIE will settle at the LMP;
 - If persistent downward deviations trigger the PUIE, then negative RIE will settle at the LMP.

3.3 Correction to errata in the draft final proposal

The following paragraph is from page 9 of the ISO's draft final proposal on BCR mitigation measures. The errata are stricken and replaced with corrected text in bold and italics.

It is also important to note that, except in the case that a resource is committed in day ahead and de-committed in real time, the current performance measurement against ~~RUC~~ ***or real-time day ahead*** minimum load cost, startup cost and MSG transition cost by comparing the meter with the respective Pmin of the resource or configurations will stay in this proposal. In the event that a resource is committed in DA and de-committed in RT, then the ISO proposes not to use the standard 3%/5MWh tolerance band for the day-ahead minimum load cost. In this case we propose instead to apply the PM to the ***real-time negative day-ahead*** minimum load cost. The rationale for this is that using the standard tolerance band could provide incentives not to follow ISO dispatch instructions to shut-down or stay off-line. By using the PM in this case, elements of the BCR calculation will be scaled back if the resource were to disregard the ISO instruction to shut-down in RT.

This paragraph was correct in the straw proposal, but was mistakenly changed in the draft final proposal.

As noted in previous policy proposals, the RT meter must still come within the 3%/5 MWh tolerance band in order to be eligible for MLC in the DA.

4 Conclusion

The ISO will conduct a stakeholder conference call to review this addendum to the draft final proposal on May 3, 2012. The ISO appreciates stakeholder comments. Please send your comments by close of business on May 8, 2012 to BCRMitigation@caiso.com.