Analysis of Monthly Pre-Dispatch Decline Rates by Scheduling Coordinators

Department of Market Monitoring
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Introduction

The CAISO has issued a straw proposal for establishing a charge for declined pre-dispatched real time market bids for imports or exports.[1] Under this proposal, charges would be assessed only in the event that a Scheduling Coordinator (SC) declines more than 5% of the quantity of incremental or decremental energy it is pre-dispatched during the calendar month. In order to help assess the potential impact of this type of monthly threshold, the CAISO Department of Market Monitoring (DMM) has performed additional analysis of monthly pre-dispatch declined rates by SCs over the last year (November 2006 through October 2007).

While DMM believes that while the historical data presented in this report provides a benchmark for assessing the potential impacts of the CAISO straw proposal, this analysis should not be viewed as a basis for directly projecting any of these impacts. Most notably, historical data on declined pre-dispatches do not reflect potential improvements in decline rates that would be likely to result if a charge for declined pre-dispatched bids were actually in effect, since such a charge would establish a financial incentive for SCs to submit bids that they expect to the be able to deliver with a high level of confidence. Thus, DMM believes a charge for declined pre-dispatches would "weed out" bids that SCs do not have a relatively high confidence of fulfilling if accepted by the CAISO, and would also provide an additional incentive for SCs to accept bids that are pre-dispatched.

Overall Monthly Decline Rates

DMM analyzed data on declined pre-dispatches over the last year to provide a potential indication of the impact that the proposed 5% threshold for triggering a charge for declined pre-dispatches might have on overall decline rates in the CAISO market. As a point of comparison, DMM also analyzed the impact of a 10% threshold for triggering the charge for declines. For this analysis, DMM first calculated the monthly decline rate for each SC for each month over the last year. A counterfactual scenario representing the potential effect of a 5% or a 10% threshold on the decline rate of each SC during each month was then calculated by assuming that all SCs with actual decline rates over these thresholds would have had decline rates equal to the respective 5% or 10% thresholds if the charge was in effect.[2] Other scenarios also assumed that the decline rates of SCs with rates below the respective threshold remained the same. Finally, these counterfactual scenarios for each SC were aggregated to recalculate the overall decline rate that would result under these assumptions.

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[1] *CAISO Straw Proposal for Real-Time Import Export Bids*, November 7, 2007, http://www.caiso.com/1c8f/1c8fa40261640.pdf

[2] For example, if the SC's monthly decline rate was over 10%, the volume of accepted bid necessary for the SC to achieve the 10% threshold was calculated.

Figure 1 compares actual overall monthly decline rates for pre-dispatched bids to deliver incremental energy as imports with the decline rates that would have resulted under these counterfactual scenarios. As shown in Figure 1:

- Actual monthly decline rates for pre-dispatched imports has varied widely during the last 12 months, reaching about 20% of the total quantity of incremental energy pre-dispatched at the interties during the first four months of 2007, and then declining to under 10% for the summer and fall months.

- Under a scenario in which all SCs declined no more than 10% of their pre-dispatched import energy on a monthly basis, the CAISO's overall decline rate would have been about 5% each month.

- Under a scenario in which all SCs declined no more 5% of their pre-dispatched import energy on a monthly basis, the CAISO's overall decline rate would have been about 3% each month.

Figure 2 provides the same analysis for pre-dispatched decremental energy (exports).

Again, it should be noted that this simplified analysis is intended to provide only a potential indication of the impact that different thresholds under consideration might have on overall decline rates. In practice, actual decline rates would of course depend on a variety of factors that cannot be predicted, such as how participants' bidding and performance in the import/export market would be effected by any specific charges and thresholds for declined pre-dispatches adopted by the CAISO.

Figure 1. Overall Monthly Decline Rates for Incremental Energy
Actual versus Declines Rates Assuming Full Compliance with Thresholds

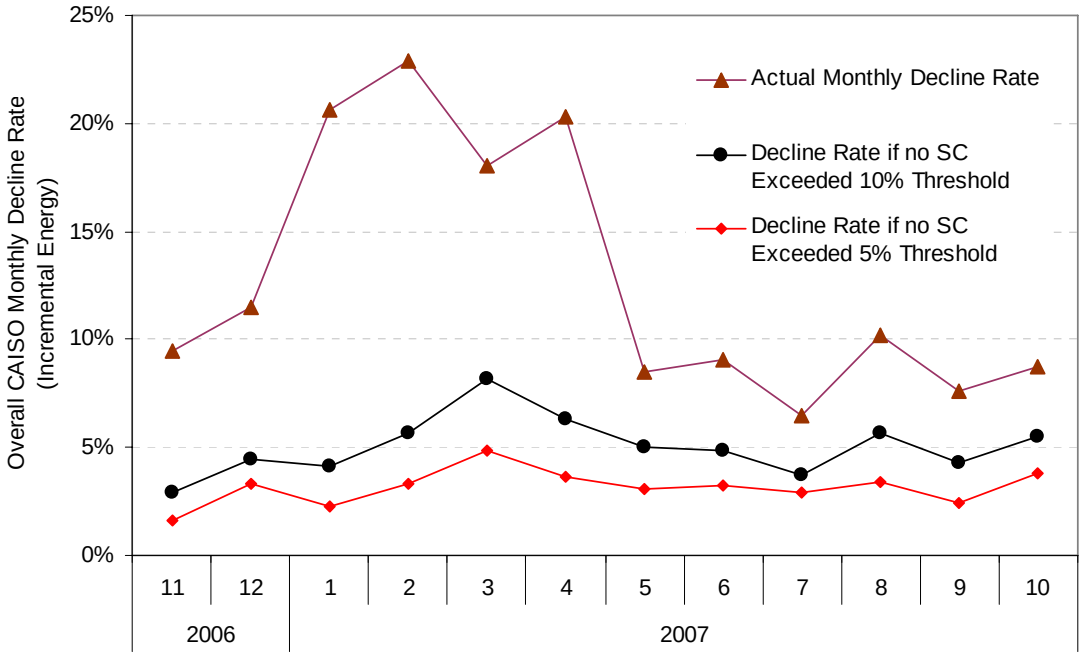
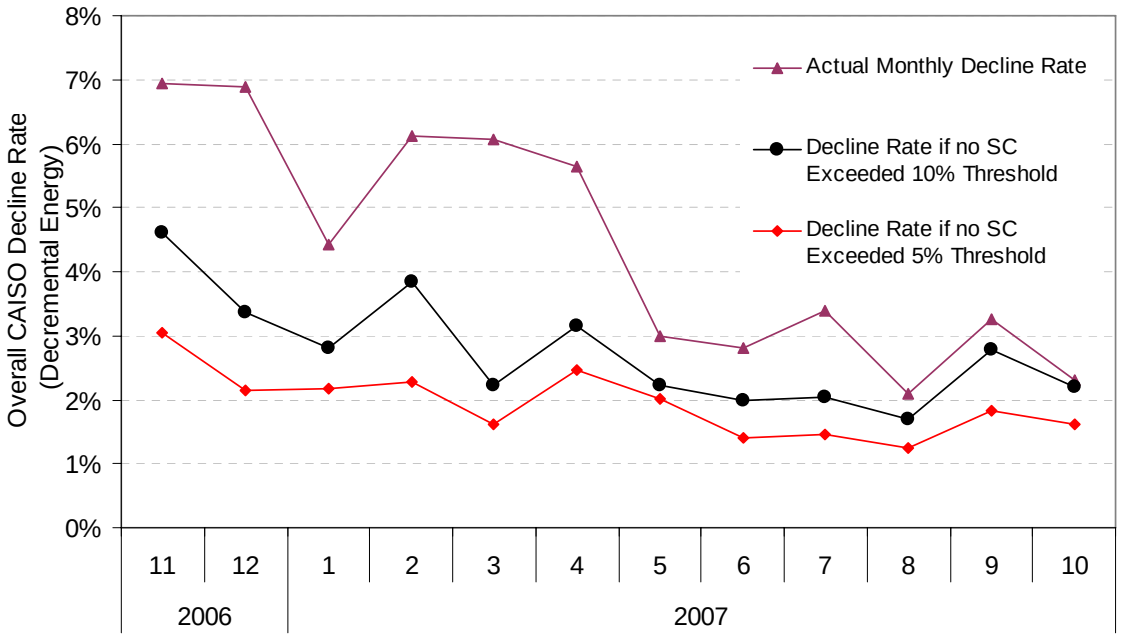


Figure 2. Overall Monthly Decline Rates for Decremental Energy
Actual versus Declines Rates Assuming Full Compliance with Thresholds



Share of Total CAISO Pre-Dispatched Energy Delivered
By Monthly Decline Rate of SC

While declined pre-dispatches can detrimentally affect reliability and market efficiency in a variety of ways,[3] one of the concerns about establishing a charge for declined pre-dispatches is the potential effect this may have on the price and volume (or liquidity) of supply from imports and demand from exports in the Real-Time Market.

DMM recognizes that a charge of declined pre-dispatches could have some impact in terms of increasing the bid price and decrease the volume of bids for energy imports in the Real-Time Market from some sources. However, DMM believes this concern must be balanced against the detrimental effects of declined pre-dispatches on reliability and market efficiency.

One indication of the potential impact of a charge for declines above any monthly threshold on *market liquidity* – that is, the actual available supply of imports/exports – may be the portion of pre-dispatched inter-tie bids that have been accepted by participants with relatively low monthly decline rates.[4] Thus, Figure 3 shows the portion of total incremental energy (imports) pre-dispatched by the CAISO – and accepted by participants – provided by participants as categorized by their respective monthly pre-dispatch decline rates over the six month period from May through October 2007[5]. Figure 4 shows the same information for pre-dispatched decremental energy bids (exports).

- As shown in Figure 3, about 63% of the total incremental energy pre-dispatched by the CAISO that was accepted was provided by SCs with monthly incremental energy decline rates of less than 5%. Further, about 77% of the total incremental energy pre-dispatched by the CAISO that was accepted by participants was provided by SCs with monthly decline rates of less than 10%.

- As shown in Figure 4, about 88% of the total decremental energy pre-dispatched by the CAISO that was accepted was provided by SCs with monthly decremental energy decline rates of less than 5%. About 95% of the decremental energy pre-dispatched by the CAISO that was accepted by participants was provided by SCs with monthly decline rates of less than 10%.

[3] See discussion on pages 2- 8 of DMM's October 10, 2007 whitepaper on this issue (*Declined Predispatched Intertie Bids,* Department of Market Monitoring, October 10, 2007). *http://www.caiso.com/1c72/1c72dd7669f90.pdf)*

[4] The rationale for this is that any such charges should not decrease the volume of energy bid and provided by SCs with relatively low declines rates (i.e. below or just above the threshold that would trigger charges). Meanwhile, if charges for declined pre-dispatches were in effect, SCs with decline rates significantly above the threshold might reduce the amount bid and ultimately provided into the CAISO Real Time Market.

[5] As shown in Figures 1 and 2, declined pre-dispatch rates were significantly lower during this more recent six month period from May to October 2007 than over the previous six month period from November 2006-April 2007. This analysis is based on data for this more recent six month period, reflecting the assumption that this data would be more representative of potential future conditions.

**Figure 3. Pre-Dispatched Incremental Energy (Accepted)
By Monthly Decline Rate of SC
May – October 2007**

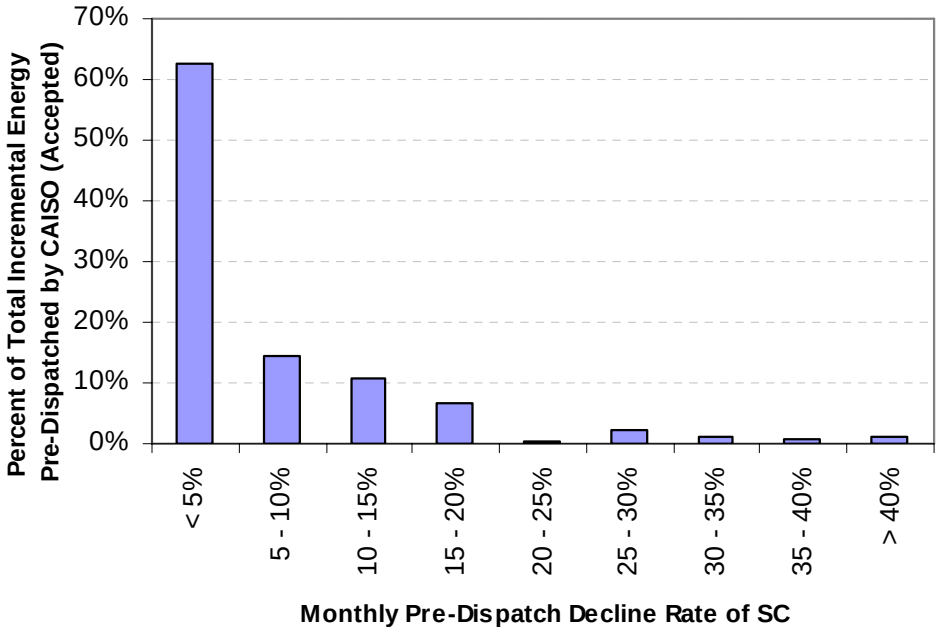
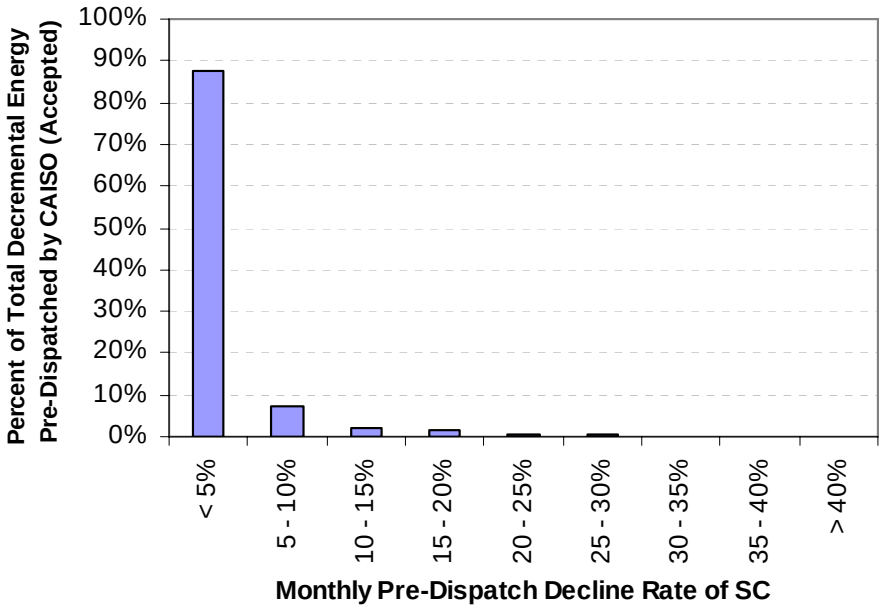


**Figure 4. Pre-Dispatched Decremental Energy(Accepted)
By Monthly Decline Rate of SC
May – October 2007**



This data shows that SCs with relatively low decline rates account for the bulk of import/export energy bids pre-dispatched by the CAISO that are actually accepted by participants.

Share of Total CAISO Energy Bids Submitted
By Monthly Decline Rate of SC

Another potential measure of market liquidity is the total volume of energy bid in the real-time market. However, DMM believes that given the relatively high rates of declined pre-dispatches that has occurred in the past, historical data on bid volumes overstates actual market liquidity because it includes bids that would not actually be delivered if dispatched. Consequently, DMM believes the most appropriate measure of the actual available supply of import/export bids in the real time market is the portion of pre-dispatched energy that has been dispatched and accepted by participants, as reflected by the preceding analysis summarized in Figures 3 and 4. Nevertheless, in order to provide an additional benchmark based on historical bid volumes, DMM has also analyzed the total amount of real-time incremental and decremental energy bid at the inter-ties that have been submitted by the various market participants as categorized by their respective monthly rates of declined pre-dispatched energy. Figures 5 and 6 summarize results of this analysis.

- As shown in Figure 5, about 44% of the total incremental energy bid at the inter-ties in the CAISO real-time market were submitted by SCs with monthly incremental energy decline rates of less than 5%, while about 67% of total incremental energy bid at the inter-ties was submitted by SCs with monthly incremental energy decline rates of less than 10%. The lower percentage of total bid import energy by SCs with low decline rates (Figure 5) compared to the percentage of pre-dispatched imports actually accepted by these SCs (Figure 3) is partly attributable to the fact that these SCs have lower decline rates, but also reflects the fact that these SCs tend to have a larger portion of their bids dispatched (due to lower bid prices).

- As shown in Figure 6, about 66% of the total decremental energy bid at the inter-ties energy bid in the CAISO market was submitted by SCs with monthly incremental energy decline rates of less than 5%. As with imports, the lower percentage of decremental energy bid by SCs with low decline rates (Figure 6) compared to the percentage of pre-dispatched exports actually accepted by these SCs (Figure 4), is partly attributable to the fact these SCs have lower decline rates, but also reflects the fact that these SCs tend to have a larger portion of their export bids dispatched (due to higher bid prices to buy export energy).

Figure 5. Incremental Energy Bids from Inter-ties (Imports)
By Monthly Decline Rate of SC
May – October 2007

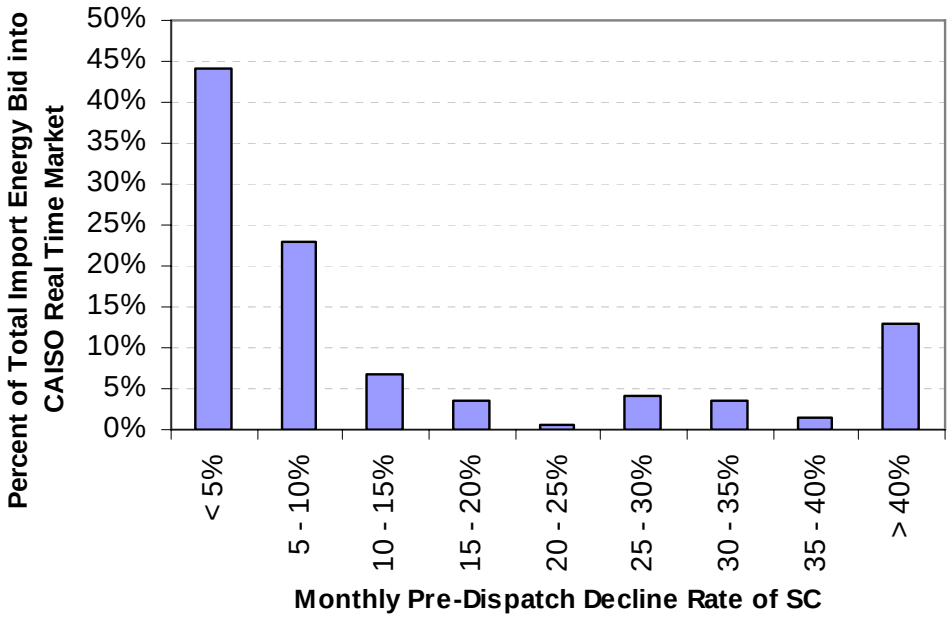
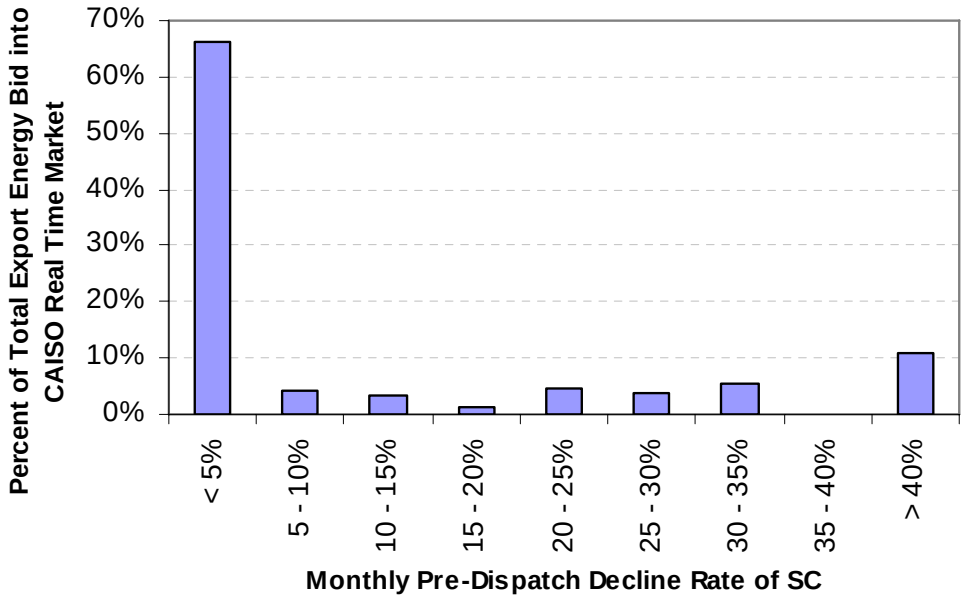


Figure 6. Decremental Energy Bids from Inter-ties (Exports)
By Monthly Decline Rate of SC
May – October 2007



Conclusions

As previously noted in this report, DMM is providing the analysis of historical data presented in this report as a benchmark for assessing the potential impacts of the CAISO straw proposal. However, this analysis should not be viewed as a basis for directly projecting any of the potential impacts of the CAISO's straw proposal or other options.

As noted in the CAISO's straw proposal, the next steps in this issue include a discussion of the CAISO's proposal through a November 15, 2007 conference call, followed by the opportunity for stakeholders to submit written stakeholder comments by November 19, 2007.