Memorandum

To: ISO Board of Governors

From: Eric Hildebrandt, Director of Market Monitoring

Date: September 7, 2012

Re: **Department of Market Monitoring Report**

This memorandum does not require Board action.

EXECUTIVE SUMMARY

This memo provides comments by the Department of Market Monitoring (DMM) on two items being presented to the Board by Management.

- **Flexible capacity procurement for resources at risk of retirement.** Management proposes to supplement the ISO's current backstop procurement authority with an interim mechanism to procure resources the ISO determines are at risk of retirement but are needed in the intermediate future for flexible or local capacity needs. Management's final proposal incorporates several key modifications recommended by DMM, including a provision that will provide some incentive for resources designated under this mechanism to participate in the ISO market. DMM supports the proposal as an interim approach until a longer term solution to flexible capacity needs can be established. However, DMM also recommends that the ISO provide its assessment of flexible resource needs several years in advance. This may help to encourage procurement of sufficient flexible capacity through the bilateral market so that reliance on this procurement mechanism is minimized.

- **Intertie pricing and settlement.** Management has decided to discontinue an initiative to modify the settlement of imports and exports in the hour ahead scheduling process and reinstate virtual bidding on interties. Management proposes to start a new initiative to redesign the real-time market to comply with FERC's order on variable energy resources requiring ISOs to provide the option of 15-minute scheduling for intertie resources. Both these decisions are consistent with DMM's recommendations on these issues. DMM has played a lead role in developing and assessing options for modifying how imports and exports made in the hour-ahead scheduling process are settled financially. However, the best approach that has been developed for modifying the hour-ahead market represents a significant design change that involves substantial uncertainty. DMM believes that pursing a single 15-minute market for interties and resources within the ISO would provide a much better option that would address the fundamental pricing inconsistency that

has led to high real-time energy imbalance offset charges and the discontinuation of convergence bids at the interties.

FLEXIBLE CAPACITY MECHANISM

Background

ISO studies have shown that the need for flexible capacity resources will increase significantly due to California's 33 percent renewable target and potential retirement of about 12,000 MW of once-through cooling generation. Currently, resource capacity is procured in the ISO balancing area under the CPUC's resource adequacy and long-term procurement planning programs, or under similar programs for other local regulatory authorities. As described in Management's memo, the ISO and the CPUC have been working toward incorporating flexible and local requirements into the Commission's resource adequacy and long-term procurement planning programs. Management expects these efforts will lead to a change in these programs to address flexible and local capacity needs. However, until there is a multi-year formal market for flexible and local capacity needs, Management proposes the ISO establish a limited backstop procurement mechanism to be used in the circumstance where a resource is deemed to be needed up to five years in the future, but is at risk-of-retirement prior to the year it is actually needed.

Management proposal

Management is proposing to supplement current risk-of-retirement tariff provisions which allow the ISO to procure capacity for one year if the resource is needed in the following year. Capacity procured under these existing provisions is paid an administrative rate and is then subject to a must-offer obligation in the ISO energy markets. The proposed risk-of-retirement mechanism would apply to resources that are needed from two to five years in the future. Capacity procured under this new mechanism would only be designated if needed for flexible or local capacity, and would have no must-offer obligation in the ISO's energy markets.

For a resource owner to receive the risk-of-retirement designation, the owner would have to submit to DMM financial records indicating it was, at a minimum, not able to cover its short-term going-forward fixed costs. If the ISO finds that the resource is needed and that the resource is not economically viable without additional revenues, the resource owner would be offered a risk-of-retirement designation.

Management's proposal would provide compensation based on each specific resource's going-forward fixed costs, rather than a standard administrative rate such as is used with the ISO's current backstop procurement authority. Under this cost-based compensation

structure, an independent evaluator would establish a resource-specific, fixed going-forward cost for the upcoming year to determine the resource's base compensation.

As noted in Management's memo, resource owners would have to submit financial information that DMM would assess to determine if the resource may not be financially viable absent additional revenue. To do this assessment, DMM will need to rely on an estimate of the resource's going forward costs developed by an independent evaluator based on financial information submitted by the resource owner. DMM will compare these going forward costs to estimates of the resource's potential net market revenues developed by DMM to assess the financial viability of the resource.

Comments on proposal

The cost-based approach for compensation incorporated in Management's proposal was widely supported by stakeholders, DMM, and the Market Surveillance Committee. DMM agrees that this approach is consistent with the ISO's intent that the compensation offered should not undermine the current bilateral procurement process by being more attractive for generating resources. Specifically, resources that are economic and needed to meet current resource adequacy requirements should earn a higher level of total compensation through a combination of resource adequacy payments, revenues from energy sales through bilateral contracts, and the ISO energy market. Thus, the risk of retirement payment should only be attractive for any less efficient or higher cost resources not needed to meet current resource adequacy requirements.

The ISO initially proposed subtracting 100 percent of any net market revenues earned by the resource against this base compensation. DMM noted that this would essentially remove any incentive for a resource to participate in the market, since any resulting net revenues would directly reduce the resource's base compensation. DMM recommended several alternative compensation mechanisms that could provide a more efficient market outcome and presented these options to stakeholders.[1] In response, the ISO revised its proposal so that only 90 percent of a resource's net market revenues are netted against the base compensation, with the resource owner keeping the remaining 10 percent of these net revenues. This change was supported by the majority of stakeholders and the Market Surveillance Committee. DMM believes this change may provide a modest incentive for resources receiving risk-of-retirement payments to participate in the market.

DMM supports Management's proposal as an interim approach until a longer term solution to flexible capacity needs can be established. However, to encourage procurement of sufficient flexible capacity through the bilateral market so that reliance on this procurement mechanism is minimized, DMM recommends that the ISO provide information on its assessment of flexible capacity needs several years in advance. This assessment could be

[1] http://www.caiso.com/Documents/DMM-Comments-FlexibleCapacityProcurementDraftFinalProposal.pdf

developed and provided in the manner that the ISO recently began providing information on projected local area capacity requirements several years into the future. Load serving entities have indicated that they could use this information to improve the likelihood that their multi-year bilateral procurement decisions meet these longer term flexible capacity needs.

INTERTIE PRICING AND SETTLEMENT

Following the suspension of convergence (or virtual) bidding on interties in late 2011, the ISO initiated a stakeholder process to identify and assess modifications to pricing and settlement rules for imports and exports in the hour-ahead scheduling process. This initiative addressed two main issues:

- First, differences in the hour-ahead and 5-minute real-time prices have created significant real-time imbalance energy offset charges. As described in prior DMM reports, these revenue imbalances are created when the ISO decreases net imports at relatively low prices in the hour-ahead process and then dispatches additional energy from resources within the ISO in the 5-minute real-time market. These costs are allocated to load serving entities. Modifying settlement rules for intertie transactions could decrease these revenue imbalances.

- Second, the ISO filed with FERC a request to eliminate virtual bids at interties in 2011 because it determined that virtual import bids were increasing real-time imbalance energy offset charges, while offsetting much of the potential benefits that might be derived from virtual bidding within the ISO. FERC accepted the ISO's filing to eliminate virtual bidding on interties on an interim basis only. Some market participants continued to request market design changes that would accommodate the reinstatement of virtual import and export bids. Thus, the ISO examined an option that might allow reinstatement of virtual bidding at interties and, if so, how these virtual bids might be settled financially.

The ISO conducted an extensive process to identify and review the options for modifying intertie pricing and settlement rules in a way that would effectively address these issues. The processes included a series of technical working group meetings, a review of designs employed by other ISOs and RTOs, and the development of several approaches tailored around key characteristics of the ISO market. DMM played a lead role in this process, working closely with other ISO staff and stakeholders to develop the best proposal possible for addressing these issues of high real-time imbalance energy offset charges and how virtual bidding at interties can exacerbate these costs.

The ISO's final proposal for modifying the intertie pricing structure included three main elements aimed at addressing these issues:

- First, hour-ahead intertie schedules would be settled at the real-time market price for energy, plus a component reflecting any congestion in the hour-ahead market

on each specific intertie. This change is designed to reduce real-time imbalance energy offset charges caused by divergences in hour-ahead and real-time prices associated with both physical and virtual intertie bids.

- Second, a make-whole payment for additional imports scheduled in the hour-ahead process would be paid to ensure these imports would receive at least their bid cost. This payment would occur only when real-time market prices dropped below the bid price of imports accepted in the hour-ahead process. This make-whole payment was included to ensure the ISO could attract sufficient additional imports in the hour-ahead market in the event of tight supply conditions.

- Third, the ISO proposal also included reinstatement of intertie convergence bids. This reflects the fact that settling virtual intertie bids at the real-time prices may reduce the degree to which these virtual bids can, in real-time, offset charges when systematic divergences in hour-ahead and real-time prices occur.

DMM believes that while this proposal may be effective in reducing real-time offset charges to some degree, the proposal represents a significant market design modification that involves a substantial degree of uncertainty and could introduce some sources of market inefficiency. Specifically:

- Settling hour-ahead transactions at the real-time price would significantly change the bidding incentives for exports and imports, and in some cases reduce the incentive for entities to bid at their marginal costs.

- Paying make-whole payments for additional imports scheduled in the hour-ahead process would offset some of the savings from reduced real-time offset charges. DMM also is concerned about some ways in which make whole payments may be exploited under certain market conditions.

- If FERC requires the ISO to re-implement virtual bidding on interties, DMM believes the ISO's final proposal could represent a limited improvement from re-implementing virtual bidding under the current market design. However, DMM has examined potential benefits of virtual bidding on interties associated with increased market liquidity and hedging claimed by some participants. DMM has found that these benefits appear to be very minimal and do not justify re-implementation of virtual bidding on interties.

- Most importantly, the proposal does not address the underlying cause of these charges: i.e., discrepancies in the hour-ahead scheduling process for intertie resources and the 5-minute dispatch process for units within the ISO.

As the ISO was finalizing its proposal, FERC issued an order on variable energy resources that may require the ISO to provide the option of 15-minute scheduling for intertie

resources. The ISO has elected to pursue modifications to the hour-ahead market through an initiative that will examine 15-minute scheduling for intertie resources in lieu of continuing with the existing initiative. The ISO may reconsider reinstating intertie virtual bids as part of the new initiative.

DMM views this type of 15-minute real-time market as much more effective and, therefore, supports this approach. DMM believes that implementing a single 15-minute market for interties and resources within the ISO would address the pricing inconsistency issue that led to discontinuation of convergence bids at the interties. Continuing to pursue the modifications to the existing hour-ahead market developed in this recent initiative may significantly delay the implementation of a single real-time market in which the same 15-minute prices are used to settle energy for intertie and internal resources.