

# Memorandum

**To:** ISO Board of Governors

**From:** Eric Hildebrandt, Director, Market Monitoring

**Date:** February 3, 2010

**Re: Decision on Treatment of Proxy Demand Resources in Local Market Power Mitigation Procedures**

---

*This memorandum requires Board action.*

## EXECUTIVE SUMMARY

At the September 10, 2009 meeting of the California Independent System Operator Corporation's Board of Governors, the Board approved a new product, proxy demand resource, to facilitate increased demand response participation in the ISO market. This product provides that bids to curtail load, known as proxy demand resources, can participate in the energy and ancillary services markets and be settled according to rules set under the policy approved by the Board. Following the Board meeting, the ISO worked closely with stakeholders to develop detailed business plans, software specifications and draft tariff modifications necessary to implement the proxy demand resource proposal by May 1, 2010.

As part of this subsequent stakeholder process, the Department of Market Monitoring (DMM) identified a minor addition to the ISO's final proxy demand resource proposal that will ensure that introduction of the product into the ISO market does not inadvertently undermine the ISO's current local market power mitigation procedures. This issue was identified as Management's proposal for proxy demand resources was being finalized, but due to the small volume of proxy demand resource projected to participate in the market in summer 2011 this potential problem was estimated to have minimal impact to the markets. Since that time the ISO has identified a simple solution to address this problem. The solution consists of excluding proxy demand resource bids from the pre-market local market power mitigation process. The pre-market local market power mitigation process is designed to ensure that bid mitigation is applied to the minimum amount of supply resources within constrained load pockets necessary to meet demand under projected system conditions. Currently the ISO does not have an effective methodology to apply local market power mitigation to proxy demand resource bids, Thus, including proxy demand resource bids in the pre-market local market power mitigation process could cause bids from generation resources with significantly lower costs (but higher priced market bids) to be

displaced by proxy demand resource bids in this mitigation process and the final market dispatch.

Excluding proxy demand resource bids from this process will avoid such economically inefficient outcomes and prevent local market power mitigation provisions from being undermined. In the final day-ahead and real-time market process, proxy demand resource bids will be considered along with bids from both mitigated and unmitigated generation resources. This will allow the bids to be dispatched when it is more economically efficient to curtail demand relative to cost of available generation, without undermining procedures for mitigating local market power within transmission constrained areas.

***Moved, that the ISO Board of Governors approves the proposal to exclude bids from proxy demand resources from the pre-market process for local market power mitigation, as detailed in the memorandum dated February 3, 2010; and***

***Moved, that the ISO Board of Governors authorizes Management to reflect this modification in its filing with the Federal Energy Regulatory Commission to implement the tariff change related to proxy demand resources, as approved at the September 10-11, 2009 Board meeting.***

## **DISCUSSION AND ANALYSIS**

### ***Background***

The goal of the proposed proxy demand resource product is to improve market efficiency and grid operations by increasing demand response participation in its wholesale markets and to respond to stakeholders' request for a product that will facilitate the participation of existing retail demand response programs in the ISO wholesale energy and ancillary services markets. This new product is expected to initially enable approximately 500 MW of demand response capability to participate in the ISO wholesale market. Additionally, the product will allow demand response aggregators, also known as curtailment service providers, to bid demand response on behalf of retail customers directly into the ISO energy markets.

Under the final proxy demand resource proposal presented to the Board in September, the proxy demand resource bids would be included in pre-market local market power mitigation runs performed to determine which resources would be subject to mitigation. However, if dispatched in this pre-market process, the bids would not be subject to bid price mitigation. This reflects the fact that it would be highly problematic to determine an appropriate default energy bid to be used in mitigating proxy demand resource bids.

Default energy bids for generating resources are designed to reflect each resource's actual marginal costs, which can be calculated very accurately based on available information on heat rates, fuel prices and variable operating costs. However, proxy demand resource bid prices should reflect the cost of curtailing load or the value of service to end use customers that comprise the resources. Lowering the bids below this level as part of local market power mitigation procedures could be economically inefficient, discourage participation by proxy demand resources with higher curtailment costs, and prevent the resources with use limitations from being utilized only during the most critical and higher priced periods.

At the same time, including bids for this product in pre-market local market power mitigation runs would create the potential that proxy demand resource bids may displace bids from generation resources that have significantly lower costs (but higher priced market bids) from this mitigation process and the final market dispatch. This potential scenario stems from two specific aspects of the ISO's current local market power mitigation procedures. First, pre-market local market power mitigation procedures are based on *forecasted demand*, so that only the amount of supply bids needed to meet expected demand are subject to bid mitigation. Second, in determining which supply bids will be subject to mitigation, pre-market local market power mitigation procedures dispatch bids in merit order based on their unmitigated bid price.

The combination of these two factors creates the possibility that if proxy demand resource bids are included in this mitigation process they may displace bids from generation resources which have higher unmitigated bid prices but significantly lower costs and mitigated bid prices. These relatively high priced proxy demand resource bids may then be dispatched and set locational marginal prices in the final market runs, even in cases when a significant amount of unmitigated supply from generating resources with lower mitigated bid prices would have been available to meet demand in uncompetitive load pockets. This would represent an economically inefficient use of proxy demand resources and generation resources, and would undermine the local market power provisions of the ISO market design.

### ***Proposed Design Change***

The scenario above can be resolved by simply excluding proxy demand resource bids from the pre-market local market power mitigation process. With this approach, the amount of generation subject to bid mitigation would typically be sufficient to meet forecasted load. In the final market process, the bids will be considered for dispatch along with bids from both mitigated and unmitigated generation resources. This will allow proxy demand resource bids to be dispatched when it is more economically efficient to curtail demand relative to cost of available generation. This would prevent bids for this product from undermining procedures for mitigating local market power within transmission constrained areas when sufficient supply from generating resources with lower actual marginal costs (but higher bid prices) was available. However, in cases when generation that is mitigated as part of the pre-market local market power mitigation process may be insufficient to meet demand due to unexpected generations outages or unexpectedly high demand, proxy demand resource bids would also compete directly with unmitigated bid prices of any other generation available to meet this demand.

The potential for this scenario to occur when proxy demand resource is first implemented in 2010 should be limited since initial participation for proxy demand resources is expected to be low. However, since this design change can be readily implemented as part of the initial tariff filing and included in the software modifications DMM recommends that this minor modification be incorporated to resolve this issue.

### **POSITION OF THE PARTIES**

This issue and a variety of potential options were discussed with stakeholders through the proxy demand resource implementation working group process initiated following the Board's approval in September. DMM issued a whitepaper describing this issue and three potential options for addressing it on December 1, 2009. The issue and options were discussed with the

working group on two conference calls in December, and at an on-site meeting in January 2010. Written comments were received from only three parties.

Two parties (Southern California Edison and Pacific Gas & Electric) support the proposal as an effective short-term option that ensures local market power mitigation procedures are not undermined by proxy demand resource, without artificially reducing prices below what would otherwise be expected in a competitive market. As a more optimal longer term option, both these parties support an approach that was proposed by DMM in the context of convergence bidding. Under this option, units would be selected for mitigation in the pre-market local market power mitigation process based on the merit order of their default energy bids rather than their unmitigated market bids.

With this approach, proxy demand resource bids could be included in the local market power mitigation process at their market bid prices, and would only displace generation in this mitigation process if the bid price was lower than the mitigated bid price of generation needed to meet demand in uncompetitive load pockets. However, since the ISO has indicated this option could not be implemented until after the introduction of convergence bidding in 2012, this option was excluded from consideration as a short-term option that could be implemented in May 2010.

Only one party (Energy Connect) opposes the proposal on the grounds that the proposal may discourage development of proxy demand resources within constrained areas by reducing revenues earned by these resources dispatched in the energy market. In the stakeholder process, DMM addressed this concern by making the following points:

- The proposed changes would not artificially reduce prices below what would otherwise be expected in a competitive market, and would prevent economically inefficient curtailment of demand during periods when supply of generation with a much lower actual production cost was available to meet this demand.
- In practice, DMM expects that most proxy demand resources are likely to derive most of their revenues by being utilized to meet resource adequacy requirements, and by providing ancillary services (non-spin) in the ISO market, with payments for dispatch in the energy markets representing a relatively limited portion of overall revenues.
- To the extent that policymakers determine that additional incentives to promote the development of demand response within constrained areas might be warranted, then more direct targeted incentives or policies should be utilized rather than allowing proxy demand resources to undermine the effectiveness of local market power mitigation procedures incorporated in the ISO market design.

## **MANAGEMENT RECOMMENDATION**

Management recommends that the Board approve the modification to the ISO proxy demand resource proposal to exclude these bids from the local market power mitigation process. Implementation of this design change is an effective short-term solution that ensures local market power mitigation procedures are not undermined by proxy demand resources, without artificially reducing prices below what would otherwise be expected in a competitive market.