Comments of the Market Surveillance Committee of the California ISO on the Proposed October 1, 2002 Market Power Mitigation Measures

by

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April 22, 2002

Summary of Comments

We endorse the general framework of the ISO's proposed market design. In particular, we agree that strong protections against excessive market power are necessary given the current market structure. However, these measures also create additional costs, and a central goal of the new market design should therefore be to reduce reliance upon these market power mitigation measures. The most effective way to do so is to facilitate more active demand-side participation in the wholesale market.

In particular, we make the following recommendations on the ISO's proposed market power mitigation measures.

1. The establishment of a damage control bid cap (DCBC) of $250/MWh that can be adjusted in the event of a significant increase in natural gas prices.

2. The adoption of automatic mitigation procedures (AMP) or similar measures to mitigate the exercise of local market power. The mitigation of local market power is a critical component of the overall market design.

3. The establishment of a 12-month competitiveness index that can monitor a level of aggregate performance of the market over a time horizon longer than do the AMP and DCBC measures.

4. The creation of an index of available capacity (ACAP) that would, at least in the near term, provide to the public advance notification of the ability of the various load-serving entities (LSEs) to satisfy their load obligations. We believe the question of the appropriate penalties for failure to acquire sufficient ACAP in the long-run warrants further discussion. We do strongly endorse the principle that LSEs, and not the ISO, should bear ultimate responsibility for ensuring the availability of sufficient resources to satisfy their load obligations.

Introduction

We have been asked to comment on the California ISO's proposed market power mitigation measures to be implemented October 1, 2002. At a later date, we will comment on aspects of the ISO's comprehensive market re-design dealing with transmission congestion management. However, we would like to emphasize that the ISO's congestion management protocols were not the cause of the crisis of the past two years. The primary cause was an underlying market structure that was insufficiently competitive. Reforming the ISO's congestion management protocols can somewhat mitigate the consequences of these structural problems, but these changes will not be sufficient to achieve a robust, competitive, and reliable electricity market in California. To reach that goal, more fundamental structural changes are necessary.

The greatest structural problems in the California market from 1998 through 2000 were the asymmetric treatment of final consumers and producers of electricity, the lack of sufficient forward contracting by load-serving entities (LSEs), and the local market power of some suppliers. The long-term contracts signed by the State of California during the spring of 2001 significantly reduced the reliance of consumers on the short-term markets. Implementing this solution was extremely costly to California consumers, because these long-term contracts were voluntarily entered into by firms serving the California market. Therefore, the terms of these contracts reflected the enormous amount of market power that the suppliers expected to exist in the spot market in subsequent years had these long-term contracts not been in place.

The existence of transmission constraints within the ISO system remains a structural problem that continues to give suppliers local market power. There are obvious limits to the extent that new transmission or generation facilities can relax these constraints. The California ISO must have mechanisms to mitigate the local market power of suppliers. Such measures have been adopted and approved by FERC for all east coast ISOs and it is important for California to have comparable measures.

The critical remaining structural flaw in the California electricity market and all other US wholesale electricity markets is the asymmetric treatment of suppliers relative to end-users of electricity. Suppliers in all US ISOs participate in a market with prices that can vary significantly over time and location. The prices paid to generators can change as frequently as every 5 minutes at potentially thousands of locations in the ISO control area. In contrast, virtually all end-users in California and all of the states served by the eastern ISOs pay prices that are adjusted infrequently, if at all, and are the same over large geographic areas.

Many of the elements of the ISO's new congestion management proposals are designed to provide more variation in wholesale prices by *location*. While we feel that this is a worthwhile goal, it is even more crucial to provide to end-users more variation in prices by *time*. The wholesale prices earned by suppliers are much more volatile with regards to time than across locations for a given time period. More importantly, the most

effective way to reduce supplier market power is to construct a system in which an attempt to raise prices would result in lost sales. Giving end-users the ability to alter their usage patterns and refuse to purchase power at extreme prices would provide an important counterbalance to the market power of suppliers. Unfortunately, this most critical element of a functional electricity market has been lacking in California and throughout the US.

Because of the asymmetric treatment of load and generation, procedures to mitigate supplier market power are an essential part of any market design for California, as they currently are for the east coast ISOs. All methods for congestion management--nodal-pricing, zonal-pricing and system-wide pricing--must deal with the local market power problem and the system-wide market power problem. However, we should also caution that there is a false sense of security created by market power mitigation measures that masks their potentially negative short-term and long-term consequences. The short-term consequences stem from their inability to fully and effectively control the market power of suppliers under conditions of system stress. In other words, mitigation measures such as the ones proposed by the California ISO, versions of which are currently in place in the eastern ISOs, are least likely to work when they are needed the most. The long-term consequences stem from the operational and investment choices made by suppliers in response to the incentives provided by the mitigation measures. In many ways, these responses can raise the costs of supplying power and thereby inflate prices over time.

In short, there is no free lunch when it comes to mitigating market power. There are measures that can be taken to limit prices in a given hour, but usually at the cost of raising prices in other hours or by threatening system reliability. In circumstances where buyers in the market are trying to buy power, regardless of price, and there is insufficient competition among suppliers, sellers will always be able to put pressure on the ISO to exempt them from price mitigation. Unless an entity such as FERC is willing to coerce suppliers to offer power at mitigated prices, the ISO will have to choose between the integrity of its price controls and the integrity of the electric system.

Measures such as the ISO's proposed Available Capacity (ACAP) requirement can be used to reduce the chance that the ISO would be left in such a situation, but at the cost of paying ACAP resources. Providers of ACAP would be required to supply power to the ISO system in a manner that is consistent with the ISO's mitigation measures. In other words, an ACAP payment is made to suppliers for their consent to provide power at potentially lower prices than they otherwise would have earned. In this way ACAP is essentially `buying out' the market power of suppliers rather than eliminating it, unless the supply of new generation is sufficiently elastic and enough lead-time (2-3 years or more) is allowed to acquire ACAP. In the absence of an ACAP mechanism, it is not practical to expect suppliers to voluntarily give up their market power in times of tight supply. If there is a cap on the price load-serving entities must pay for ACAP capacity (either in the form of an explicit price cap or a $/MW penalty on load-serving entities for failing to meet their ACAP requirement) and generators are not compelled to offer their capacity in the ACAP market below that penalty level, the ISO may be forced to choose

between maintaining reliability or maintaining this price cap if generators have market power in the ACAP market. This sort of market power problem has occurred in the PJM Installed Capacity (ICAP) Market. Despite a requirement for all generators to bid into the ICAP market, those firms with market power were only willing to sell ICAP capacity at prices above the $/kw penalty to load-serving entities for ICAP inadequacy.

Despite our concerns about the costs imposed by market power mitigation measures, they are still preferable to allowing the unfettered exercise of market power in a market that is unable to support competition. However we believe that it is much less costly in the long-run to correct the underlying structural problems that make these regulatory measures necessary. We strongly urge all the parties involved in the California electricity market to make demand-side participation in the market a centerpiece, rather than an afterthought, of market power mitigation.

ISO Market Power Mitigation Plan

The ISO proposes both a short-term and long-term approach to market power mitigation. For a variety of reasons, the ISO does not believe it is possible to implement an ACAP requirement in the short-term. Given current supply and demand for generating capacity in the western US, it is very likely that in the short-term, at least one entity is pivotal in the ACAP market. Consequently, the ACAP market is very likely to be subject to significant market power at time horizons shorter than the time necessary to site a substantial amount of new capacity in California. In addition, the ISO envisions implementing local ACAP requirements to account for known transmission constraints throughout the ISO control area. Creating local ACAP requirements will further exacerbate the market power problems associated with implementing ACAP in the short-term and even in the long-term. For example, it is highly unlikely that additional generating capacity can ever be built in certain local areas, such as in the City of San Francisco. Consequently, the only time horizon which a workably competitive local ACAP market in San Francisco could operate would be at the horizon necessary to credibly construct new transmission capacity into San Francisco, which is considerably longer than the time necessary to build new generating capacity.

For all of these reasons, we strongly agree with the ISO's perspective that an ACAP market is not practical over the short-term. Moreover, we believe that several of these factors call into question the viability of a workably competitive ACAP market over the 2-3 year forward market horizon without intervention by FERC to cap the prices paid to generation unit owners for providing local ACAP.

In spite of our reservations about the viability of a workably competitive ACAP market, we strongly endorse the concept of holding load-serving entities (LSEs) responsible for supplying sufficient generating capacity or equivalent quality negawatt capacity to the ISO to operate a reliable transmission network. The residual unit commitment (RUC) process is designed to deal with the problem of under-scheduling on

a daily basis. However, we are not convinced that the current ACAP proposal is the least-cost mechanism for implementing that requirement over the long-term.

Obviously, a first step in the process of assigning any ACAP or analogous obligation would be a determination of what entity is responsible for purchasing wholesale electricity. Particularly, for the portion of the state served by Pacific Gas and Electric, it is unclear what entity will purchase wholesale electricity on January 1, 2003. Until there is more clarity on what entities will be purchasing electricity, it is impossible to determine the least-cost long-term mechanism for providing sufficient capacity to the ISO for reliable grid operation.

For these reasons and because California is a net importer of electricity, we believe the best course of action for short-term market power mitigation is to extend the June 2001 FERC west-wide mitigation order until it is determined what entities will be responsible for purchasing electricity after December 31, 2002. A contributing factor to the crisis of the past two years in California was the disconnect between California's retail market design and its wholesale market design. Relying on the demand side of the wholesale market to provide significant market power mitigation is imprudent given current conditions in the retail sector the California market. However, we strongly urge all parties at the state level to facilitate the active participation of load in the ISO markets through the installation of interval meters and retail pricing programs that allow final consumers to participate in the hourly markets in the same manner as a generation unit owner.

If it is not possible to extend the June 2001 FERC west-wide mitigation order beyond October 1, 2001, we believe the following market power mitigation proposal should be implemented. First, the ISO should implement a damage control price cap of $250/MWh. To ensure the ISO has sufficient capacity during periods in which it may need energy most, we do not advocate setting the price cap any lower than $250/MWh, assuming that natural gas prices remain in the $2.50/MMBTU to $4.00/MMBTU range. Because of the quantity of forward contracts for electricity signed by the state of California during the spring of 2001, the exposure of California load to spot price fluctuations should be significantly less than it was during the summer and autumn of 2000 and winter of 2001. Consequently, the harm to consumers in terms of higher wholesale electricity costs associated with hitting the $250/MWh price cap is significantly less than it was during the previous year. The benefit of setting a relatively higher cap is that the ISO will be more likely to be able to attract sufficient energy in the short term and generation capacity in the long term to the California market to operate the transmission network reliably.

Even though the ISO has a number of generating units under Reliability Must-Run (RMR) contracts that it can call to mitigate local market power, system conditions often occur when generating units besides RMR units are able to exercise local market power. Consequently, we strongly support the implementation of an automatic mitigation procedure (AMP) on all generating units that possess local market power according to a clearly articulated criterion. For example, if the ISO determines that at

most three generation owners are able to provide a local energy need, then the bids submitted by these market participants will be subject to an AMP.

FERC is currently considering whether to modify or void the forward contracts signed by the state of California during the spring of 2001. Because of the enormous uncertainty about the final quantity of forward contracts held by the state and uncertainty surrounding the final structure of the retail market in California, we do not think it is possible to provide a specific recommendation on the final component of the market power mitigation proposed by the ISO—the available capacity (ACAP) requirement. We only note that for the reasons cited above, we are not convinced that an ACAP market is likely to be the least cost (to consumers) approach to providing the capacity required by the ISO. We discuss the ACAP requirements in further detail below.

Moreover, without explicit mitigation of the prices paid for ACAP capacity in certain locations in the ISO control area, purchasers of the ACAP obligation will find themselves paying for the local market power that a unit has in the energy market (albeit in advance), at least in the short run. In this way local market power in the energy market is transferred to the ACAP market.

12-Month Competitiveness Index

The last element of the ISO's proposed market power mitigation measures is the 12-month competitiveness index and its use as a trigger for stronger mitigation measures. The index is designed to provide a high level, longer-term evaluation of the overall competitiveness of the market. The basis of the index would be a comparison between actual market prices and an estimate of what prices would have been if no firm had attempted to exercise market power. If the 12-month rolling average of this measure crosses a pre-specified threshold, then an additional layer of stronger mitigation measures would automatically be triggered. A key requirement for this mitigation measure is that all of the market participants would find it in their financial interest to avoid exceeding this threshold. If the mitigation measures that occur when the threshold is exceeded are perceived as sufficiently Draconian by all market participants, each will have a strong financial incentive to work to correct the market flaws that allowed the index to approach this threshold. In this sense, the market will be self-regulating by providing incentives for all market participants to fix small design flaws before they can develop into problems that result in large wealth transfers.

Such a long-term measure can also be a very useful diagnostic tool. Unusual problems with unit outages, trading decisions, data collection, and a number of other factors can make a short-term measure of market performance unreliable. Even severe levels of market power can have minor consequences if limited to a small number of hours. An annual measure can overcome many of these shortcomings. The presence of an explicit threshold on the annual level of market power can also permit less stringent thresholds to be set on short-term mitigation measures such as AMP and hourly price-caps.

The ISO's experience during the summer of 2001 is an excellent example of how the automatic implementation of strong mitigation measures can serve as a powerful self-regulating influence on suppliers in the market. The FERC's June 19th order would reset the West-wide price cap if the system enters an hour of a stage 1 system emergency. The cap was initially set in June of 2001 using a significantly higher gas price than those experienced during the summer of 2001. Consequently, suppliers had a very strong incentive to bid sufficient capacity into the ISO's real-time market to ensure that a one-hour period of a Stage 1 emergency did not occur. If it did, the price cap would have been adjusted downwards using the significantly lower natural gas prices that prevailed during the summer of 2001. The ISO operators report that, in contrast to previous summers, suppliers were eager to supply to the California market during the unexpectedly high demand conditions of the summer of 2001 in order to prevent a Stage 1 emergency. A properly implemented competitive index (with an explicit 12-month threshold) would create incentives for the market to self-regulate and thereby not to be subject to significant long-term market power.

Because of these advantages, we strongly endorse the concept of a rolling 12-month competitiveness index. Before this index can be implemented, there are several issues raised by stakeholders that need to be addressed, none of which is a reason to reject the concept. These are discussed below.

1.) **Transparency**. It is critical for such an index to be transparent to all market participants. This may involve simplifying the calculation of the competitive benchmark in order to make the algorithm more transparent and to accommodate data confidentiality policies.

2.) **Threshold**. The two primary options for a threshold level are the percent mark-up of market costs over competitive costs and/or a ($/MWh) level of average market costs over competitive costs. Although more analysis of this question is needed, our sense is that the percent mark-up is likely to be more sensitive to movements in external factors such as gas prices, and thus will be more likely to trigger a `false positive' result than would a fixed ($/MWh) threshold. The fixed threshold would also provide a stronger incentive for firms to reduce their costs than would the percent mark-up. Lastly, the fixed threshold can be more easily linked to the long-term average costs of new generation, since the nominal level of the percent mark-up would grow as costs rise. For these reasons, we favor fixed $/MWh difference rather than a percent mark-up as the threshold.

3.) **Measurement of market costs and prices**. Though there are complications in the measurement of market costs and prices which are necessary for the construction of a competitiveness index, we believe these can be satisfactorily addressed. Without an established transparent forward energy market, the measure of market price becomes more complicated. One option would be to use the imbalance energy price in the ISO. If the spot market is not very liquid, this may not be a very accurate signal of market costs. We would not advise using a measure of the average cost of purchased power that includes forward contracts of duration longer than 12 months. These

contracts would reflect the conditions of the market at the time they were negotiated, rather than during the time the index is intended to measure. The transition to locational marginal pricing (LMP) will require further modification of the calculation.

4.) **Consequences of Exceeding Threshold.** The ISO proposal suggests that cost-of-service measures should be implemented. In general, the consequences of violating the threshold should be sufficiently unattractive that no market participant (buyers or sellers) would risk doing so. The severity of such measures implies that the threshold should be set high enough that the prospect of triggering it in error is remote. A higher threshold also ensures that buyers would prefer continued market operation to triggering the threshold level.

Maintaining Reliability in the California ISO Control Area

A core principle of the ISO's market design is that load-serving entities bear the responsibility for ensuring the availability of adequate resources for satisfying their load obligations. We strongly endorse this principle.

The current ACAP proposal can serve a very useful informational role in achieving this goal. By tracking which LSEs are being responsible in the procurement of supply, the ISO provides useful information to consumers and regulatory bodies. In the short-run, this information would be most useful to regulatory bodies, since end-use consumers have little choice in selecting an energy service provider (ESP). However, a critical element of a successful market design, as we have emphasized repeatedly, is retail prices that reflect market conditions. Time and location are two important determinants of market-determined prices; the reliability of an energy service provider is a third. In the long-run, we envision a retail market populated with many ESPs. The current ACAP proposal would provide information that would allow the ISO to rate the reliability of ESPs, much as bonds are rated in financial markets. The market prices charged by ESPs would reflect their reliability ratings, much as the interest rates paid on bonds reflect the creditworthiness of the issuer. In short, we strongly endorse tracking ACAP as an important informational tool.

Unfortunately, we are currently in a market where three investor-owned utilities serve the vast majority of load in California. The retail rates that they charge are fixed. End-use consumers cannot vote with their feet (by changing ESPs). Thus, should ACAP be required, with pecuniary penalties for failing to meet ACAP requirements and ultimately curtailment of LSEs who do not meet ACAP requirements? We strongly endorse the notion of curtailing those LSEs who fail to meet their obligation to serve (rather than curtailing the entire system). This is the ultimate penalty that befalls those who violate the proposed ISO ACAP requirement. There are pros and cons to adding intermediate (day ahead and month ahead) financial penalties for failing to meet ACAP requirements. On one hand, financial penalties would ensure that LSEs are properly planning for their load requirements. On the other hand, intermediate financial penalties

may lead to overprocurement, a cost ultimately borne by consumers. This tradeoff needs to be carefully scrutinized before we can reach a clear conclusion on the issue of intermediate financial penalties. (There is also the thorny issue of what generation and demand-side reduction programs would qualify for satisfying the ACAP requirement.) However, there is one clear conclusion. LSEs that fail to procure sufficient supplies to meet their demand should bear the consequences of that failure. LSEs that responsibly fulfill their obligation to serve should not be penalized for the poor behavior of other market participants.

No matter what mechanism is adopted by the ISO for dealing with the question of long-term adequacy of supply, the incentives provided to LSEs by local regulators will still be critical to supporting it. Given that both the ISO and other California authorities place paramount importance on maintaining reliability, we urge that a mechanism satisfactory to all parties be developed. It is important to note that even if ACAP is adopted in its current form, it would not become effective for several years. In the meantime we will have to develop alternative means to ensure system reliability.