

California Manufacturers & Technology Association

"California Dreamin' versus Reality: Lessons Learned"

**Remarks by
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**South Lake Tahoe, Nevada
August 3, 2001**

I. Introduction

It is my pleasure to have the opportunity to exchange ideas with the participants at this important conference. The past year in the western electricity markets were characterized by almost war-like conditions, and the members of this association were at ground zero. Like all wars, this one took a serious economic toll. My agency could have stopped the economic carnage a year ago, and it is a shame that a majority of the Commission was unwilling until recently to act forcefully. But better late than never. The price control order the FERC issued June 19th seems to have restored some order in this market, and just last week we established a hearing that will finally begin to address refunds for the unjust and unreasonable prices charged in this dysfunctional market.

While the Commission and state authorities must continue to sort out the inequities of the past, we must also heed the lessons of this horribly painful experience and move forward. New electricity markets are fragile, complex organisms, and regulators still have an important role to play in ensuring that they deliver the promised benefits to consumers. The California experience has brought home three important lessons for regulators that I would like to share with you today. First, regulators must be more insistent on good market design. All of the elements of an efficient market must be put in place. Second, regional grid operation and planning in the hands of independent Regional Transmission Organizations is essential to good market operation. And third, the Commission must sharpen its regulatory intervention tools and use them quickly and decisively when markets are

dysfunctional. After all, in an out of control market, billions of consumer dollars can be siphoned away in the blink of an eye. I will discuss these lessons in turn.

II. Market design lessons

A. Appropriate hedging

First, let me discuss market design issues.

The California electricity market was defined by a state policy that promoted an over reliance on the volatile spot market. For the most part suppliers had to sell, and purchasers had to buy, on the hourly markets. Yet, spot markets are almost by nature volatile. Imagine the chaos and high prices if the market for airline tickets was limited to purchasing your ticket at the gate as you board the plane. Chaos also should be expected to follow from buying at the last minute a commodity whose production costs vary substantially over the course of a day and that cannot be stored. We've learned that reasonable reliance on purchasing in advance, and using other hedging instruments such as futures and forward contracts, are key to good market structure. Regulators must insist that this market design element is in place. To be clear, I am not at all suggesting an over reliance on expensive long term markets either. What I am proposing is that purchasers must have the opportunity to assemble a balanced portfolio of supply instruments, some short term, some medium term and some long term.

B. Assurance of adequate generating capacity

Another element of good market structure is a before the fact assurance of adequate generating capacity, including a reserve margin requirement. The California market design did not call for any capacity obligations. Presumably, it was expected that the mysterious invisible hand of the market would ensure that capacity would show up when needed. Yet, given that electricity cannot be stored, relying solely on market signals for capacity could mean significant fluctuations of price and capacity availability as supply and demand adjust. The fundamental role that electricity plays in the social, economic, and public safety fabric of society argues that such fluctuations should be minimized. One way of guarding against these fluctuations is to place an *ex ante* reserve requirement on the load serving entities that they could meet however they see fit. This is the current practice in the

Pennsylvania-New Jersey-Maryland Interconnection ISO market, PJM, and, given the abundance of generation capacity additions planned there, suppliers seem to have confidence in that market design.

I would add that states must site necessary new generation in a timely manner, so that supply and demand stay in reasonable equilibrium.

C. Uniform interconnection standards

Market players must be able to respond to price signals, and increasing supply is a critical response that must be made as easy as possible. For that, we need uniform standards and processes across all markets for connecting new generators to the grid. New generators should make their location decisions based on market economics, not on which regions have the easiest interconnection process. In the U.S., because of a patchwork of interconnection processes and standards, generators wanting interconnection face unnecessary obstacles. Interconnection legerdemain is still a reality. This problem must be solved, and the process must be sharply streamlined. The FERC must take the bull by the horns and standardize the processes and agreements for interconnection across the entire country.

D. Congestion management

Recent events have also driven home both the reliability and price signal value of a good market based congestion management regime. Obviously, the delivery network becomes congested at times, and the cheapest electricity may not be able to get to the load. When this happens, we must have a price-driven way of managing that congestion.

While the Commission does not require a specific congestion management method, I find great value in the locational marginal pricing, or LMP, model. By recognizing the incremental cost of generating power at various points on the grid, LMP sends the correct price signals needed for optimal use of existing generation and transmission resources, and also encourages efficient siting of future generation and transmission expansion. We have a real world success story of LMP implementation in the PJM ISO. I've heard very few complaints about the PJM market, and there are many new generation projects queued up to participate in that market. In my book, that's a strong indication of success. The PJM congestion

methodology works. The FERC should aggressively promote this methodology across the U.S.

E. Demand responsiveness

So far, all of the market design elements I've mentioned have focused on the supply side of the market. But markets also need demand responsiveness to price. This is a standard means of moderating prices in well-functioning markets, but it is generally absent from electricity markets. When prices for other commodities get high, consumers can usually respond by buying less, thereby acting as a brake on price run-ups. If the price, say, for a head of cabbage spikes to \$50, consumers simply do not purchase it. Without the ability of end use electricity consumers to respond to price, there is virtually no limit on the price suppliers can fetch in shortage conditions. Consumers see the exorbitant bill only after the fact. This does not make for a well functioning market. As we have seen, when capacity is tight, sellers can run up the price almost at will.

Instilling demand responsiveness into electricity markets requires two conditions: first, significant numbers of customers must be able to see prices *before* they consume, and second, they must have reasonable means to adjust consumption in response to those prices. Accomplishing both of these on a widespread scale will require technical innovation. A modest demand response, however, can make a significant difference in moderating price where the supply curve is steep.

And once there is a significant degree of demand responsiveness in a market, customers should be allowed to bid demand reductions, or so called "negawatts," into organized markets along with the megawatts of the generators. The principle here is that a one MW reduction in demand is as valuable as a one MW increase in supply, and should be compensated accordingly. This direct bidding would be the most efficient way to include the demand side in the market. But however it is accomplished, the important point is that market design simply cannot ignore the demand half of the market without suffering painful consequences, especially during shortage periods. There was virtually no demand responsiveness in the California market. Customers had no effective means to reduce demand when prices soared. Significant demand responsiveness is an essential element of good market design.

F. Ex ante price mitigation

California has shown us that electricity markets can be very volatile, and prices can increase by orders of magnitude in the blink of an eye. There must be some mechanism in place to help prevent such a price run up, especially those due to market power exercises. The most common type of mechanism in some U.S. markets is for bids to be mitigated to some pre-defined reference price if certain conditions exist. Those conditions can be structural, such as locational market power, or based on percentage increases in bids compared to a reference price. A reference price is often based upon some average of past bids. For example, the reference price could be the average of bids during similar load conditions over the past 30 days. Outlier bids are simply mitigated before the fact. It is critical that some type of circuit breaker such as this be in place. Such a device protects consumers best and avoids the unwieldy processes needed for after the fact price mitigation and refunds. The Commission recently approved such a device for the New York ISO, and I would recommend this approach for the California market as well.

III. The Importance of Regional Transmission Organizations

There is one additional and absolutely critical element needed for well functioning electricity markets, and that is a reliable, efficiently managed transmission grid to which all players can gain access on a fair basis. The grid is the highway over which all electricity commerce must travel. Yet, the way the grid is organized and managed are presenting major impediments to good market performance.

In many parts of the country, the utilities that own the transmission grid also have merchant interests in generation facilities that they want to protect. Those utilities thus have a conflict of interest in providing access to the grid, and there continue to be allegations of market power and discriminatory conduct. A sharp separation of transmission from generation is necessary so that transmission owners are not able to give their power sales preferential access to the power delivery system, thereby snubbing lower-cost competitors.

A second problem is the fractured nature of grid management. The operation and planning of the grid is splintered among well over a hundred operators across the country. Yet, the grid is now being used to support broad regional markets and must accommodate an increase in the number and complexity of transactions. Reliability

and efficiency suffer due to this fractured grid management, which also keeps wholesale power markets artificially small because traders must pay multiple transmission rates to move power over systems owned by separate corporations. These multiple rates make the power too expensive and deals become uneconomic.

The current grid management is not conducive to an adequate reliable supply of energy or to reasonable consumer prices. The FERC's strategy for addressing these grid inadequacies is Regional Transmission Organizations or RTOs.

An RTO is a grid manager for a large geographic region, operated independently of merchant generation interests, responsible for short term reliability, regional planning and market monitoring. RTOs are absolutely essential for the smooth functioning of electricity markets. RTOs will eliminate the conflicting incentives vertically integrated firms now have in providing access. They will ensure access to regional power markets, improve transmission pricing, regional planning, and congestion management, and will produce consistent market rules across a region.

Markets are regional in scope. This has been well demonstrated over the last year as prices over the entire eleven state Western Interconnection rose and fell with events in California.

Unfortunately, the voluntary RTO proposals made in the U.S. have been off the mark. While the proposal for RTO West is an excellent start, the remaining proposals are far too small in scope.

About three weeks ago, the Commission adopted as its goal four RTOs across the country: one in the Northeast, one in the Southeast, one in the Midwest, and one in the West. I support this objective, and am glad that the Commission has finally provide some long overdue direction to RTO formation. This set of four RTOs better represents trading realities than what has been proposed by the transmission owners. Better trading, and the improved means of planning and access, will greatly help the nation meet its current energy challenges successfully. I am committed to working with all stakeholders and the states to achieve our objective of just four large RTOs.

IV. Regulatory intervention

Even with our best efforts to put in place well structured electricity markets, there may be times when those markets fail to do their job. When markets fail, regulators must be aggressive in stepping in to ensure that market flaws are corrected and that consumers see reasonable prices. After all, the whole point of restructuring electricity markets is to benefit consumers.

The task of ensuring reasonable prices must be addressed far differently in liberalized markets than under the old regime. It is much harder now. The basic nature of our regulatory task is quickly moving from reviewing cost-based prices charged by individual sellers to ensuring good performance by markets. Our focus is shifting, and our analytical tools must track this new responsibility.

Market performance is heavily affected by the unique complexities of electricity markets and must be measured using a sophisticated analysis. While we surely cannot expect electricity markets to attain the ideal of perfect competition, I believe that the concept of workable competition might prove useful to market analysis. Workable competition has been defined as competition that leads to a reasonable or socially acceptable performance in the circumstances of a particular industry. Thus, it is a pragmatic standard that takes into account the unique conditions of an industry. Let me suggest the kinds of things that might be appropriate to consider in deciding whether a market is workably competitive.

First, I would look at supplier concentration. How many suppliers are in the market? I must emphasize that the market must be defined accurately by considering energy prices, transmission capacity and transmission prices, all factors that can affect the scope of trade. We must also take account of the time dimension of supply and demand. By that, I mean analyzing horizontal slices of the supply curve at various load levels – such as peak, super peak, off peak and shoulder periods – to measure supplier concentration. Even more sophisticated approaches may be needed for assessing concentration in today's electricity markets.

While concentration is a very useful statistic, I would not limit market power analysis merely to supplier concentration issues. We should also determine if market rules create any perverse incentives or obstacles to competitive and efficient behavior by market participants. We must look to see if the rules in the market promote the elements of a well functioning market I've discussed earlier.

Computer simulation modeling is becoming essential to determining if markets are workably competitive. Such models can take into account the interaction of market structure, market rules and other market conditions such as demand responsiveness, to estimate supplier and customer behavior and the result on consumer prices.

In addition to sophisticated market analyses, regulators need to develop clear standards of acceptable market behavior. We cannot expect players to follow rules that have not been posted. We must also ensure that markets are adequately monitored, and that the monitoring and policing task is equipped with the right data, and with sufficient manpower, to do the job. And when market monitors in California and elsewhere tell us that market power is being exercised, we must not ignore their pleas.

Indeed, the Commission must aggressively intervene when the markets are not producing reasonable prices. New electricity markets need a lot of attention. They are just emerging from almost a century of monopoly regulation. Moreover, the unique characteristics of electricity make the markets exceptionally vulnerable to market power and to the potential for breathtaking price run-ups when supply is short. Billions of consumer dollars are at stake, so we must conduct tough-minded investigations and correct market flaws. We have to be willing to impose a time out on markets that are not functioning. All of the world's most sophisticated commodity markets have time outs to prohibit market meltdowns.

While preventing market power exercises is the first order of the day, the Commission must also be able to order refunds to consumers when they have paid prices that result from the exercise of market power, such as deliberate withholding of generation from the market. I am concerned that the Commission is not able to do that in many instances. According to last week's refund order, the Commission can order refunds for bad behavior only if the seller "did not charge the filed rate or violated statutory or regulatory requirements or rules in applicable rate tariffs." My concern is that the Commission would not be able either to find that these conditions were violated or take other actions against sellers that deliberately withheld power from the market because generally there are no specific tariff conditions prohibiting withholding in western markets. This is a major flaw in Commission policy. The Commission must set the rules of the road in our tariffs. We must include generic tariff conditions nationwide that prohibit this kind of bad behavior.

VI. Refunds for California

I've been discussing the critical lessons that we all must heed as we move forward in electricity market restructuring. But the Commission still has important old business to address for California consumers. At our last meeting, the Commission established a 60-day evidentiary hearing to determine the level of refunds due for sales made into the California spot markets between October 2, 2000 and June 20, 2001. To calculate refunds, the Commission adopted the method for calculating mitigated market clearing prices set out in our June 19th mitigation order. Briefly, that method limits market clearing prices to the variable cost of the marginal unit needed to supply the spot market. Allowable costs are determined by actual heat rates of the units and spot market indices for natural gas prices.

I am heartened that the Commission is finally addressing head on the tough issue of refunds for the victims that took the brunt of the wildly dysfunctional Western power market. It is time for the Commission to fulfill its responsibility to the customers of California and other parts of the West. I agree with most of our refund hearing order but am troubled by four aspects of it.

My first area of disagreement is the use of daily spot gas prices as reported in various publications to determine the fuel cost component of the mitigated market clearing prices. It simply is not clear to me that generators purchased gas at those spot prices to replace the gas used to generate electricity for sale into the spot markets. And we do not have to guess at whether they did or not. We are dealing with a locked in period for which expenses are known or knowable. During that period, we should use the most accurate data we have to determine just and reasonable price, and we should do so. Actual fuel costs are known and we should use them.

Second, I object to the inclusion of a 10% creditworthiness adder to the mitigated market clearing price. This adder is unnecessary in calculating refunds. Prices skyrocketed in June 2000 and remained high for the better part of a year. Yet last week's refund order concludes that there is no opportunity for refunds for transactions before October 2, 2000. I support that conclusion, but it is clear that sellers charged prices that were not just and reasonable before that date. Indeed, last November the Commission found that conditions in the market "have caused, and continue to have the potential to cause, unjust and unreasonable rates... under certain

conditions." The fact that there will be no refunds for sales before October 2, 2000 presents strong equity considerations to conclude that a creditworthiness adder is not necessary in this generous market.

Third, I am concerned that including non-jurisdictional sellers is a jurisdictional reach that may be unlawful. As a matter of equity, all sellers should participate, but requiring them to do so may be beyond the Federal Power Act.

One final note of old business. I am concerned that the Commission still fails to address squarely the issue of generation withholding during the refund period and before. The market clearing prices for the refund period are determined by a method that uses the dispatch that actually occurred. There are allegations that the actual dispatches reflect the withholding of more efficient units that drove up the market clearing price. There are a number of studies that indicate withholding. Two that come to mind are those submitted by the ISO's director of market analysis, Dr. Anjali Sheffrin, and by Drs. Paul Joskow and Ed Kahn. These studies are instructive, but the Commission fails to take the issue of withholding into account in setting a refund formula.

V. Conclusion

The past year in the California electricity market has indeed been painfully instructive. We must heed the many lessons learned and apply them going forward. Electricity consumers will insist that market liberalization benefits them. Without such benefits, there is simply no point to it.

Thank you.