

**Harvard Electricity Policy Group
Special Session: Killing the Golden Goose?**

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RAPPORTEUR'S SUMMARY*

Morning Session: The Fallout from California

The California crisis is a definitive moment in the restructuring debate. People are drawing many conclusions about the situation, some justified and many not. These opinions range from the conclusion we have heard from some key energy people that restructuring has always been a bad idea, and California proves it. At the other end of the spectrum are those who see the market as doing what markets do from time to time, and neither politicians nor regulators should intervene in the process. In the middle are those who seek to derive some lessons from California's misfortune, but not abandon the idea of restructuring. Where on that spectrum is political and regulatory opinion coalescing? Is it coalescing at all? What is the impact of California on policymakers in Washington and in the state capitals? What effect will it have on Congressional action? How are the various stakeholder groups responding to the crisis? Is this the end of restructuring or is it merely the opportunity for a midcourse correction? Is there political support for the Bush Administration's position that the dilemma is California's to resolve, or is federal action of some sort inevitable? How can leadership be exercised in these circumstances, and who should exert it?

Speaker One

Let's go back and look at what people were thinking when this process in California began. It's easy and accurate to argue that the system was broken. One only had to look around to see that the prices in California were much higher than their neighbors. And these high rates came at a particularly bad time because the state was

in an economic recession. One of the reasons the prices were so high is that long-term contracts had been signed at above-market rates, in many cases at the insistence of the regulators and in some cases perhaps because the utilities themselves entered into those arrangements. The high prices came from administrative determinations of avoided costs that turned out to be wildly inaccurate.

* HEPG sessions are "off the record." The Rapporteur's Summary captures the ideas of the session without identifying the speakers.

A lot of contracts with qualifying facilities (QFs) were the result of government regulation. If you want to argue the case for the heavy hand of government, it was probably heavier in California than in most other states. The role of the state in planning for the electrical system was in controversy. So there tended to be a bias against the government intervening in the marketplace.

Nuclear costs had escalated at the two or three nuclear plants that were being built by California utilities; the whole question of prudence came up. Consumers were concerned about high prices and investors got concerned about *ex post facto* review.

California did not have a viable wholesale market. Pennsylvania has had the least problematic restructuring in part because the region had a viable wholesale market long before it restructured, so there was a lot of behavior that didn't have to change that dramatically--unlike California, where the wholesale market and supporting institutions for it didn't exist.

What about the institutional bureaucratic political setting? I describe it as "power trumps knowledge". You had an agency, the California PUC, that were a knowledgeable group of folks who understood public policy as it relates to electricity. They initiated a process based on their thinking and solicited input from all the relevant constituent groups, most or all of whom were well-informed. There was a relatively high-level debate.

But it was only a matter of time before all of this became politicized. The PUC ceased being the forum for the discussion and, in some cases, was largely excluded from the decision-making process. So the initiative went from the place where the state's

expertise resided, the Commission, to the legislature and the governor, two institutions where one does not usually attribute a lot of expertise and knowledge. They took over making the decisions.

What left the process at that point was a clear policy direction. The governor and a majority of the legislature were committed to a competitive electricity supply market, but what that meant, it's difficult to say if even they had a well-formed opinion. What you want are counter-rallying forces, interested in the outcome, that debate and fight among themselves. Hopefully what you get is a carefully balanced piece of legislation.

I would describe the dynamics of that debate as a parochial moment. If you look at the goals of each of the entities, each had clearly delineated first priority goals. The utilities' *numero uno* was stranded asset recovery. That went even more so for the two largest utilities in California. The QFs were arguing for their God-given right to sanctify contracts. The marketers wanted a market design that would give them access to information and the ability to arbitrage their information advantage. Environmentalists wanted to make sure that the benefits didn't end up being stranded, related to demand-side management programs and promoting renewables. The industrials wanted choice and the freedom to negotiate their own rates. Consumer advocates wanted lower rates.

Everybody brought these wishes to the table. I describe how the decision was made as "the interested leading the blind." Every interest was given its priority goal. Instead of the counter-rallying forces negotiating on an issue-by-issue basis, what you had was the trading of objectives. So you say to the utility, if you're Governor Wilson, you want

stranded assets recovery? You've got it. Now, get out of the room, and we'll discuss other things with other people. Ultimately, almost every group got their primary objective--although I'm not sure the consumers got lower rates.

Once the CPUC and, perhaps, the California Energy Commission were trumped, policy guidance was gone from the process. So there was no discipline imposed on these negotiations. And there was almost a complete disconnect between state and federal regulation. FERC was inadequately consulted and brought into the process.

The selling of electricity restructuring to the consumers in state after state has been one of the most intellectually dishonest exercises I've ever seen. This assumption that the prices can only go down is implicit and underlies it all. What's phenomenal is that at least in some states that very same argument is still being made, even in light of California. Everybody involved in this process created very unreal expectations. In California, the referendum to repeal the law led to promises amplified in fake television commercials and on and on.

What's the political and regulatory fallout? I describe it as, "One couldn't help but notice the prices." The first question is who's next. This is not an American question, but a worldwide one. Not many states are pulling back from restructuring.

The situation does heighten jurisdictional concerns. Governor Davis was handed a very limited piece of authority to try to deal with the situation because a substantial part of the state's traditional regulatory authority over generation and transmission had been surrendered to the FERC. The state could only play with regulation of retail rates.

Now governors, legislators and regulators are asking, Is this worth surrendering the authority?

The other question that's focused on is the siting question. Just this week was the decision in Connecticut rejecting the Cross Sound Cable DC transmission line, largely based on the fact that more of the benefits would go to New York. The question of how much longer the country will tolerate parochial views by the states in siting transmission facilities is on the agenda.

If we're faced with a political situation where there is a limit to the prices the public will tolerate, does it make sense to have a public policy that treats electricity as a commodity like any other, when in fact we know politically and socially it's not, that there are external implications to electricity that make consumers less tolerant of substantial rate hikes than they might be in other commodities? That's a question that was inadequately posed in California, and in most places.

Then how much attention should the policymakers or regulators pay the stakeholder consensus? In California, we're paying a huge price for political consensus. One should have been tipped off when the California legislature passed the restructuring legislation unanimously. This was not a well-debated subject.

Another question is, who is going to be the ultimate provider? A lot of utilities fought like hell to be the provider of last resort. You look at California and ask, what did they do that for? On the flip side, the marketers argued about all the retail competition and all the new actors, the load aggregators, the demand-side providers who would show up at the marketplace. And the

day the market opened, those guys took a hike. There is no retail competition in California.

Are we confusing goals and means? In all the debates about California and elsewhere, the assumption is that competition is the goal, not efficiency. Are we putting the means ahead of the goals? How can competition be used to accomplish efficiency, as opposed to just seeking out competition? FERC has to address this. Are the prices in California just and reasonable? Do they meet the Federal Power Act test? You could argue that they don't.

What incentives are required to increase supply? A substantial part of the problem in California is supply/demand. What incentives weren't there that made supply inadequate to meet demand?

Speaker Two

Who is next? Is it New York? I hope not. I'd like to go through some of the differences and the similarities between California and New York.

Some people are pointing to New York because it has deregulated. But they don't usually ask the follow-up question, whether it has deregulated correctly or incorrectly, wholesale, retail, etc. New York is short on supplies, and is right now cautiously optimistic about this summer. The Power Authority is putting in ten turbines in New York City. They're facing both legal and political opposition, but there's a very good chance that they'll be in place.

There was an education process in New York, based at the Commission. About 100 parties were brought in, experts with varying views. Whatever their interests or laundry

lists, they still had to learn all the other stuff-how a retail market worked, pricing, a lot of arcane issues. An ongoing core of people from the utility, generator, consumer, environmental sectors, with a good level of understanding of these complicated issues, are able to sit at the table at the ISO or whatever the forum is and have some input on them.

We did allow utilities to hedge. When the utilities sold their power plants, with the exception of Con Edison, they all entered into power purchase agreements to buy that power back. The IPP contracts turned out to be a pretty good hedge during some of these peak periods. The utilities are in the process of selling their nuclear but, having learned the lessons from California, everyone is looking at doing that with power purchase agreements extending as far as 10 years.

New York has a different profile in terms of imports. We have a public power entity, so when we need to do something quickly, we have someone who can respond quickly on behalf of the state.

By using the administrative approach, we have been able to make changes. We're able to change course when necessary, and don't have to get thrown into the politics of the Legislature. Not to say this hasn't been highly politicized. Some of the Democratic Assemblypeople who oppose the Republican administration have used the California situation to make hay. The Mayor just jumped into this and is suggesting \$250 price caps. He is pushing for new generation in New York City. In New York State, when we talk about potential problems, we're almost always talking about New York City and Long Island.

I would like to talk about some of the things

done in New York, and frankly it did not start with California. Con Edison was allowed to flow through market prices to consumers, and as a result we had severe price spikes last July. Overall it was a cool summer, so August bills were down. For the whole summer, bills were only up about 20 percent over the previous year. This has provided certain signals to consumers; it has put them on the alert that they need to think about demand-side response.

So last summer the Price Reliability Task Force was instituted. It has three prongs. One is to site generation efficiently and as fast as possible under the law. This is an effort that involves not just the Public Service Commission but the Department of Environmental Conservation as well as other agencies. There is still a lot of work to be done with the Federal government; in fact, EPA held up the delegation of the PSC's siting ability for over two and a half years and now, having sited the first two plants, the Army Corps is re-examining issues that were examined and litigated in these cases. The goal is to have, from the time an application is complete, which includes draft permits from the DEC, a 10-month process before final licenses are issued.

The second prong is working with the ISO. New York had, not just in the summertime but earlier last year, some spikes and anomalies that were hard to explain from a market perspective, like bizarre prices at 1:00 a.m. So the PSC has been working closely with the ISO and with all of the parties, and ultimately came up with a report which was sent to FERC. It had 51 recommendations, a few broad brush mitigation issues but a great deal having more to do with making what's there work right, making the rules work better and so forth.

The third prong is demand-side options, not just energy-efficient light bulbs and conservation but real-time market demand-side involvement, done through both the utilities and the ISO. The goal ultimately is to get it done completely through the ISO, to be more competitively neutral. The focus is not just on emergency situations; the ISO has put in place programs so that folks can bid in their load and have economically curtailable, dispatchable loads. These programs were derived with a great deal of consensus and will all be in place for the summer. In the first stages, we're largely talking about large customers. This will not be a small customer tool until there is more robust aggregation. If the residential market is ever going to be a truly viable market for electricity, it is going to be through aggregation, and this could be one of the tools that will help aggregation come to the market.

The single most important lesson that New York has taken from California has been described as the Federal-state jurisdictional disconnect. I would also characterize it as the retail-wholesale disconnect. I don't think New York has that disconnect, but to whatever extent it does, it has to appreciate the relationship between having both a working retail market and a working wholesale market. They both serve to discipline each other, and one without the other or without the other working properly can be devastating.

The state is seeing some interesting political responses from the utilities. All of the upstate utilities, mostly in the context of merger applications, are suggesting essentially hedging their entire loads wholesale. California went from being in long-term, fixed-price contracts to OK, let's

buy everything on the spot market, and it seems like now we may be in the process of suffering whiplash--now the suggestion is, come back and let's sign some good old-fashioned 10-year contracts. The PSC has asked the utilities for years to prudently buy capacity on behalf of their customers and to have a range of risk in their portfolios, both short-term and long-term. This can't be achieved without setting up specific mechanisms to tell them to do it or not.

Speaker Three

The numbers are eye-popping. Power for California that cost \$7 billion in 1999 cost over \$27 billion last year, and no one is sure how much it will cost this year. FERC has declared unanimously that the market is not functioning well, but the most important question is, what do we do now? How can we fix the market and avoid the same problems elsewhere? I agree we should revisit the debate over whether competition in electricity markets is a good idea and whether electricity markets will produce just and reasonable prices for consumers. Electricity markets are fragile and need attention. Regulators can't simply get out of the way and let the beauty of the markets work. One question is, Are policymakers willing to give that attention?

Another question is the split in jurisdiction between Federal and state policymakers, which makes setting up an efficient electricity market almost impossible. FERC can vigorously promote the movement to wholesale markets, but all of the elements of a good wholesale market are not within FERC's power to achieve because state agencies have a lot of that power.

There is a clear political dimension to electricity that cannot be avoided, and it is

naive to expect local or Federal policymakers to treat electricity like pork bellies. It is the juice of the economy; it has to be available, and it has to be reasonably priced. Consumers don't care what the regulatory model is. You can't say that California is better off now than before restructuring. Californians will be paying for this for the next quarter of a century.

What are the lessons? One, if we're going to move to markets, we cannot be naive about market structure. Any old market is not better than no market. Five or six years ago there was a belief that there was so much inefficiency built into the old system that we couldn't go wrong, that virtually any electricity market would be better than what we had. That is a naive point of view.

Two, FERC must be cautious about deferring to state market proposals that are the result of political compromises. It must insist on a good wholesale market structure. We need to define the elements of a good market structure and insist on them. PJM appears to work well; we should attempt to replicate that market structure in other regions. We must insist on a market in which there is a fair degree of forward contracting. One could make a strong argument that if the generation in California had been 90 percent forward contracted, we wouldn't be in this mess today. Markets need demand responsiveness, which we have very little of. They need good congestion management.

Another lesson is in the area of defining market power. FERC has not done a good job of defining generation market power. It uses an old-fashioned methodology called hub-and-spoke. It's time to update those standards. It's time to have a more focused debate on what market power is. If a market

allows a seller to regularly bid well above its marginal cost, is that market power? FERC must re-examine its role in monitoring and policing the markets; it must step in forcefully when the market is dysfunctional.

We need a debate about the nature of FERC's just and reasonable prices. What does that mean in a market-based environment? The courts have said that if FERC is to move away from cost-of-service regulation, it must do so with care, and if it's going to move to a market-based approach, it needs to ensure that the market is functioning well. Otherwise one cannot assume that the prices are just and reasonable.

A working retail market can discipline wholesale prices. So there is a relationship between a well-functioning wholesale market and a well-functioning retail market. Yet FERC does not have the legal authority to ensure that all elements of a good market are in place; the states have a fair share of it. During this meltdown in California, California policymakers have been lobbing grenades at FERC and vice versa. It hasn't worked well.

A sleeper issue is the relationship between high delivered gas prices in California and the high price of electricity in the wholesale market. The wellhead price has been higher than usual. But once that \$6 gas is delivered into California, it's sold for \$20, \$30, \$50. It's the price of transporting natural gas into California. Is that high gas price driving the high prices for electricity in the wholesale market? Or is the high price for electricity in the wholesale market and the fact that generators can bid a high price meaning that they are failing to bid down the price of natural gas in the market? This is a serious problem that FERC has not addressed.

Some state regulators have said that there is an implied regulatory bargain between the states and FERC: If states are to move to a competitive model or rely more on wholesale markets, they have to count on FERC to do its job. Do they trust FERC to be responsible, to move aggressively to get the kinks out of the transmission grid, to move forward with an RTO policy, to step in aggressively when the market is out of whack? That is a legitimate question right now. It is part of the bargain.

Speaker Four

In the old days, about five years ago, we were dealing with an industry that simply was not up to the job. That's why we engaged in change, rightfully or wrongly. We're in a radically changed kind of economy and the industry was not changing fast enough its management practices, its innovations in technology, the way it developed, or the way it dealt with its customers. Monopoly and government move too slowly for the modern economy. Perhaps the assumption was, well, anything will be better. Clearly one of the lessons we've learned is, this is a lot tougher politically and economically than was anticipated.

We have learned the hard way that stakeholder settlements don't necessarily add up to the right way to do business. Unlike in other situations in which stakeholder consensus gets you at least a political decision, here we had to get a market structure right. And we had a limited number of players in any place who had any understanding of that. We suddenly said to regulators, who had never been asked to do this job, Your responsibility is to bring together the intellectual and political will to deal with all of these powerful forces and

say, this is the way to do it. In fact, mostly those powerful sources simply looked down their noses so much at the regulatory system that they weren't about to accept that discipline.

Of course it was political. These are public agencies changing a hundred-year-old policy that has major impacts. It is, at its core, a political question as to how we're going to do this. We deregulated in the high-cost places because it was going to help lower prices. The fraud was the lack of recognition that it could not work. They missed the central point, that you have to have a financial underpinning to the marketplace to make it work.

Responses from the states seem to be falling into three categories. The first is denial or differentiation: We're not like California; we know how flaky they are. It is true that California is more subject to the natural gas price increase in electricity than much of the rest of the country, since the average across America is about 16 percent of generation from gas, whereas in California it is around 30 percent.

The second kind of response is to defer or delay restructuring. The third, which is the most important one, is to dig in, do it. We see that in a number of states. On the federal side, we see new energy. These were on Rep. Joe Barton's list: Get your interconnection policy done for distribution and generation fast, allow QFs to sell to third parties, initiate proceedings to determine whether prices are just and reasonable. If the governors of California and the Western states declare an emergency, it will trigger all kinds of federal interventions. Most people don't have high expectations this will pass Congress. But it represents a change in the political

dimension at the federal level and willingness to begin to engage.

Turning to the broader issue of federal legislation, last year it was unlikely we'd see electricity legislation. But this year there is enormous new enthusiasm in Washington, and just the presumption becomes politically central: If you presume you're going to act, everybody begins to make it happen. Murkowski put forth a major bill. He is a states' rights conservative, but wanted to give FERC eminent domain authority over interstate transmission comparable to what it has on natural gas pipelines; that provision was dropped because Western senators were fearful of the interference with private property rights. So it's not clear where he'll come down on this in the end.

The Democrats scrambled to create a comprehensive bill. Senator Graham has said this year it's a high priority. He now cares a lot about getting PUHCA reform, using a new pro-production argument. Nobody believes that a retail mandate on states is viable. Barton was saying that maybe we have to reach the point where the FERC sites power plants to make the wholesale market work. This shows you the change that is occurring. In terms of the Bush Administration, we're already seeing a growing sensitivity that this is broader than California. It's a major political risk if things keep going wrong.

FERC has to become energized if it's going to save the market system. Whether it has price caps or temporarily goes back to cost of service in the Western market, I hope it will adopt that on a temporary basis. Congress should never dictate a pricing formula.

Is this a commodity or is it not? We have to come to the grips with the fact that it's not

either/or. We clearly assumed that state and federal regulators were going to regulate the wires. But that doesn't mean you reject trying to create markets. An *L.A. Times* poll shows that more than half of Californians still see competition as the way to go.

Fundamentally, if the supply/demand situation had never become so tight, most of these problems wouldn't have arisen. You have to site transmission, and you have to do demand responsiveness. The lesson is, work on supply and demand, and you've got a lot more margin for error. The catch is, the margin for error was not as large as we assumed. And when financial problems start to develop, act quickly. The failure to act made it harder and harder to act.

Discussion

Question: When the California experiment does go wrong and does turn out to have these flaws, what can FERC do?

Response: FERC doesn't have complete control. It can't site generation or transmission. It can declare certain prices to be unjust and unreasonable. It has legal authority to cap prices or bids. It has encouraged forward contracts, but they're not going to be in place for the summer. The only option for this summer is price mitigation.

Question: We're headed for the worst of all worlds in some places in the U.S. right now: Central management without planning. The vast majority of supply is being delivered through default service or provider of last resort rate plans. The wire systems are monopolies that are centrally planned and regulated. So 95% of the power and 100% of the wires are essentially franchises subject to a shifting body of non-regulatory

mismanagement and oversight. We're in danger of whipping from the short-term, noncompetitive market to the long-term, centrally managed but not planned situation. Would you agree?

Response: I'm talking about central planning where they have the authority to make the decisions. We need long-term thinking, planning. The big difference is that in the new system, if Dynegy invests in a plant and screws it up, hopefully they're going to take the bath--rather than ratepayers and consumers having no choice, and no market discipline on the investor. The issue had been whether or not people would step up to bat to make the investments. They will if you allow them to site the plant, get into business. We haven't done enough on demand response.

Comment: On demand side, the New York ISO has been doing some groundbreaking work. Often a couple of hundred or 1,000 MW can make the difference. But the \$1,000 price cap becomes a problem because customers may value the lost load more than that. It's almost a chicken and egg problem.

Question: What is the rationale for granting market rate authority to players in a marketplace that is noncompetitive? And why do we closely regulate other markets, but only monitor electricity?

Response: And why do we allow folks who have market power to have market-based rates? When ISOs were set up, FERC asked the market participants why there wouldn't be market power when they went to market-based rates. What was presented to FERC were projections. What happens if the things filed with FERC turn out not to be true?

Comment: There are two areas of phenomenal confusion. One is what's the goal and what's the means. Competition became the goal as opposed to being a means to get to an efficient marketplace. Second is the difference between deregulation and restructuring. It's not deregulation. The question is how we can restructure to get the advantages of the marketplace to the consumer. What form of regulatory response do we want? California has a market that's not even remotely transparent, so any information disclosure of the kind that, for example, the Securities and Exchange Commission might use doesn't exist. When you look at Governor Davis floundering around trying to figure out what to do, in large part he can't figure out how to do it right because his predecessor gave away all the authority and tools to deal with the problem. And there was no thought given to the question of what's the ultimate safety valve, whether it's a price cap, bid cap, or some form of retail competition that gives consumers choice.

Question: One of the themes of the presentations was that we have to go back and rethink. Suppose we do that and conclude that we made a series of fundamental mistakes. Can you put the toothpaste back in the tube? What can be done, how can we go back, or can we go back? Or do we just have to face a new reality?

First Response: I don't think we can go back, but I would distinguish making a policy choice to go back from a temporary timeout, which we need to explore so that we can figure out what to do next. There is the understanding in California now that they can't avoid FERC and that FERC is still headed toward large regional markets. Hebert is talking about a single RTO for the

Western interconnection. That requires strong federal intervention. I see no way to go back. The question is how to get smarter about this for the future.

Second Response: We need to focus on the disconnect between the retail and wholesale markets. The two play off each other. If there are no options for consumers, the problem will never be less politicized, because that's the only fallback consumers have. Marketers need to get back in the retail market and figure out how to enrich it and produce products. Also, one of the big winners in California is public power. Maybe we ought to think about whether there is a role for government to get price discipline and stimulate a competitive market.

Comment: One of the panelists talked about looking at moving DSM into the ISO entirely. I would suggest that you try to move it into the marketplace. The California ISO last year presented a product to the marketplace, where if you are willing to interrupt for X hours a month--a number they set--what's it worth to you. The response was staggering. They set a one-size-fits-all product that they sold rather than letting the marketplace come up with a bunch of different products.

Question: We represent developers with turbine orders. We're beginning to impose a political risk overlay in terms of not only what the forward price curve looks, but what's the likelihood of recovering those prices over the life of your investment. How does the current situation play havoc with the issue of where to put those turbines?

Response: They're never going to be perfectly insulated from risk, nor probably should they be. Market risk and political risk

are exactly the same. Interestingly, some of same QFs who argued for the sanctity of contracting are among those now saying that these contracts can be broken, they can sell it in the spot market. So the argument is double-edged.

Question: Are we digging a bigger hole for ourselves by not more aggressively looking at the gas price situation and its linkages to electric? Is there more we should be doing?

First Response: It's biting us already. The movement to gas-fired electric generation makes a lot of sense for environmental and other reasons. But we ought to ask if there is an overreliance on natural gas. But I disagree that there isn't split jurisdiction over the gas market. The wellhead price for natural gas has been high, in the \$5-6 range, but the transportation differential from the wellhead to California has sometimes been \$20, and where the interstate pipeline is rebundled with supply and intrastate capacity--called the gray market--the price has been even greater. I understand FERC has no jurisdiction over the gray market.

Second Response: Capitol Hill is trying anything that will expand the natural gas market--trying to get FERC to approve more pipeline, expanding production facilities and siting them. Many of the environmental interests are aligned with this because they recognize it as a cleaner kind of fuel.

Third Response: We ought to look at the convergence issues. And to what extent do we have cross-market manipulation?

Afternoon Session: Looking Ahead While Looking Back

The lessons from dysfunctional markets provide compelling incentives to make electricity markets functional. There is little tolerance left for even minor repetitions of the experience in the West. Everyone in the world is rethinking market designs and the details of operation. Many initiatives are underway, and they are now more urgent. In some cases the tools of price caps, bid caps, circuit breakers, and other market power mitigation techniques are being advanced, refined and adopted to repair anything that breaks. In other efforts, there is an accelerated effort to improve market coordination, resolve seams issues and produce a bigger market that would be more resilient to demand and supply shocks. The lessons learned by looking back should be converted into forward-looking action to make sure we can make the markets work. The purpose here is to identify and share the best ideas, fully aware that we are all in this together.

Speaker One

Was California really a failure? In the first two years, the average wholesale rate was less than three and a half cents per kilowatt. There was \$16.8 billion in stranded costs--almost wiped them out for everybody or came very close. Unfortunately, we didn't have much retail progress.

What now? The options run the gambit of dealing with the fundamentals, which are basically supply and demand and re-regulating. Re-regulation is, besides the toothpaste problem, not the right answer. Restructuring was instituted because they had high rates in California, they had an oversupply of generation. If you look across the rest of the West, you see a lot of rate increases in states that are regulated--for example, 17% average for Sierra Pacific, 50% for Tacoma Power.

The Barton bill would spend billions to create a power authority. Rod Wright, the Chairman of the Energy Committee in the California Assembly, said we've had 30 years of the highest rates and three CEOs have gotten fired over it, now they have

low rates for a year and we want to make this the standard. That speaks volumes. Purchasing the transmission? The problem is the hole's getting deeper all the time, so they're not going to get value for it and it's still going to be called a bailout.

Some of the other California proposals are condemnation of the plants and the output, and maintenance and outage surveillance. Senator Spears has a proposal that would put generators under the jurisdiction of the CPUC for maintenance and outages. This is a situation where everybody sees the big hot issue and wants to jump onboard and get their name on a bill as having done something about it.

You've got the energy cost ballot initiative, a windfall profits tax was thrown in the hopper in the last day or two, you've got the 20/20 proposal where if you reduce your consumption by 20% you'll get a 20% rebate from the government, and we're still trying to figure out where that money's coming from. You've got civil suits, the ISO is claiming generators overcollected by \$6.5 billion. Where they get that number, who knows, but this is a getting blood from a stone situation. Bankruptcy is threatened,

a federal court order says even though generators are not getting paid, they have to run.

The Western Governor's Association is getting involved, the Secretary of Energy has a task force that generators are going to report to every week on expected outages. You've got Diane Feinstein's bill and a new ISO board basically made up of the Governor's appointees.

Some proposals currently in play are a West-wide price cap which isn't going too far, the Cost Plus proposal which just sounds like traditional cost-based ratemaking, the FERC's new proxy cost for just and reasonable rates, a West-wide curtailment plan. Generators are trying to get more megawatts into the pool for curtailment this summer in the West. The Western Governor's Association has a task force on transmission trying to locate needed transmission across the entire West and do something about it, which is good news if we can get some sort of regional fix. Then there's the right of first refusal deals where if you're going to build a plant in our state we have a right of first refusal to keep it in the state, exactly the opposite of vibrant interstate commerce.

Other but not miscellaneous matters are credit resolution--the figure is something like \$10 or \$12 billion. The credit that's out there isn't getting paid to people who ran the plants, the QFs have gone offline because they're not getting paid and no longer can afford to buy the gas. You still have the issue of retail pricing; California has raised rates on the order of 46%. The prediction is that the people who are going to get the price increase are those with the 10,000 square foot houses in Palm Springs who aren't going to be demand responsive.

We have another round of market power studies due at FERC.

Obstacles to dealing with the problem in California: Hydro is way down this year. The credit issue is still out there, and then gas prices and politics, politics, politics. Missing in action right now is retail in California--what are the industrials going to do, their prices are going to go way up. Discussion of market structure has gone underground. It used to be a very public discussion, but now it's hard to figure out what's going on, and other issues are taking precedence.

The good news is we've all come an incredible way up the learning curve. I think consumers are aware of what's going on, they want to know more, and we've developed a keen awareness of the value of forward contracts.

My take on price caps is, Show me one that works. One of the worst consequences is that the entrepreneur spends all of his time trying to figure out how to manipulate the controls in order to make a profit instead of trying to figure out how to build a better mousetrap and out-compete his competitors.

What do we do from here? There's a bazillion pieces of legislation floating around Sacramento. We fear the same thing is going to happen in New York as the legislature awaits a budget from the governor and things start to heat up. But the bottom line is, legislation and regulation just embed the idea of the day, be it good or bad, and then we'll be stuck with the consequences. Tweaks just lead to responsive behavior by the market which leads to more tweaks which leads to more responsive behavior and so on; we've seen

that in California.

The government needs to focus on the structural solutions, not the behavior; on monopolies and how they keep competition out. Access in this business is interconnections and transmission capacity. If we get to that point of not having a bunch of grandfathered transmission tariffs, it would be a lot easier to get access. If generation is the place you really make your money and you can control that by transmission access, then we've got a problem. Affiliate rules help, but create dislocations, inter-corporate transfers.

What can the leaders do? The public needs to be educated. Consumers need choice. Streaming is a real answer because it bypasses the regulators and gives the choice to the consumers. Facilitating generation siting can be done if people want to do it. We talked about a region-wide transmission organization in the West; we need big transmission organizations in the East. California needs to pay its debts. Finally, the seams issues are everywhere.

Long term, we need infrastructure improvements, both in-state and interstate, both gas and power. We need demand response, access to lands for gas drilling, and regulatory certainty. Why would I put another penny in a state where they change the rules every week?

Speaker Two

Some facts about PJM: It has 207 members; over 100 transmission customers, outside of the membership, actually using the transmission service; 70 load aggregators; retail choice in five states. It has 6,000 MW of generation under construction, 41 companies involved in 61

different generation projects, nearly \$300 million worth of transmission construction underway.

PJM is expanding. It has filed a PJM West concept that takes in the west of Pennsylvania, most of West Virginia and parts of Ohio. It recently signed an agreement with ISO New England to adopt standardized market tools, so there will be 14 states operating under a common market design. PJM will be announcing in a public filing that it will offer a base case of tools which will work in any area.

What's happening? If you look at the United States, we have to deal with the reality of physics. We have three synchronized motors. You have the West; if you look at where all the solutions for California are coming from, it's the Four Corners area. And yet you have a single synchronized motor in a single state trying to find a solution--it's not efficient. Then you have the empire of Texas and the Eastern interconnection.

You have to have regional solutions to solve these problems. You have a history, you've got local practices, with NERC security coordinators, rules standards designs, etc. Everybody's starting from a different point.

What it takes to get there is real information. In the old legacy systems, you paid your bill for electricity you used six weeks prior. If you were the regulator you saw historical costs data. Now you're dealing with a network economy where almost everything is dealt with in real time, and you need that to have a competitive marketplace.

One thing we can't overstate is what is

happening internationally with technologies. CPU speed alone is giving us tools and capabilities that never existed before. We can have members' meetings broadcast over the Internet, and hope to have Internet-based meetings and discussions. There is an advent of smart products, which can increase demand response. The bottom line is that as the cost per transaction goes down, the revenue goes up, and in an information-based economy you have increasing returns of business.

PJM found that all the market problems that it needed to solve ultimately came down to taking information that was previously disconnected, connecting information and make it available so people can make commercial decisions. And in a nutshell that's what it takes to make electricity into a competitive marketplace.

What is a real market? First, it has to be regional. In any given hour, PJM can have hundreds of companies bidding and trading into its marketplace. In PJM last summer, there were hundreds of buyers and sellers, and the highest its prices got was \$432, and that only for four hours. Competitive markets will deliver reliability, efficiency and effectiveness.

Customers must have choice--retail, wholesale, all customers want choice. It has to be incremental; no one has done this before and a single misstep can have huge unintended consequences. You can do it if you do it incrementally, get there, understand, get on the learning curve and move forward robustly.

Reliability. In the development of ISOs and markets, there was this idea that you can't have the person that's actually

dispatching involved with a spot market. But we're discovering that they're combined. You have to have somebody administer the spot market that does the dispatch. It has to do with getting that closure between the physics and the realities of a competitive marketplace. If there's any discrepancy, the dispatcher must intervene to ensure reliability. Divergence between what was expected to happen by the market forces and what actually happens can lead to inefficient and bizarre outcomes. And the greater the divergence, the greater the inefficiency of the market. So you have to explicitly link the actions of the dispatcher with the spot price.

You have to assure that the spot price can be generated by the dispatcher and presented in a transparent way. In PJM, it's published every five minutes. If you want it, you can get it every seven seconds. This also ensures that prices enter consistent with the physical dispatch. Prices are important. You can't make decisions for the future if you don't know what the price transparency is.

In terms of planning, you can't just do one thing--if you add a single transmission component, a new generating plant, it affects everything else. So you have to have a holistic approach. In PJM's planning process, everyone gets involved. Transmission is constructed in order to make sure that generation can move with free-flowing ties. It optimizes the transmission system and allows generators to compete because it solves the problem of generation interconnection rules and so forth.

To ensure that all this balance takes place, PJM has an independent board. The board has a fiduciary duty to ensure that it has a

safe and reliable operation, that PJM creates and operates robust, competitive, non-discriminatory electric power markets and that no member or group of members has an undue influence over the operation. They can't have financial interests in anyone in the marketplace.

Where do things stand now for PJM and where is it going? There are three institutional problems it has to address. One is the issue of standards, not just NERC standards, but commercial standards. As long as the standards are proprietary, that provides significant rents to the holders of those proprietary standards. Last year, PJM trained over 3,000 people in the rules and how the mid-Atlantic market works. Training is important. The gap between the understanding of the end-use customer about the competitive marketplace and the wholesale learners is widening and is a serious problem nationally because ultimately the end-use customers are the ones that are going to vote to change the scheme.

We have to develop demand-side response to price. PJM had a pilot program last year and will continue to develop that. A number of companies are talking about technologies that they want to implement, smart devices connected to residential homes that will read the PJM spot price and automatically generate to the home, generate back to the grid to the net metering, etc. A lot of ideas are out there, but we've got to get that end-use learning curve up.

I think we're going to go to 10-minute markets, I think we have to. If you're dealing with a real time product, yet we're trying to base our business on integrated hour units, there's a massive gap, and a

further gap for the customer who gets a bill for electricity used six weeks prior. An integrated 10-minute market solves a lot of problems on ancillary services and other things. Then we find a way to let that price transparency get to the customer so the smart technologies and devices can begin to be enabled.

Speaker Three

Were we sold a bill of goods? A lot of people think we were, and we are developing a dichotomy between a group of people who believe in the market as a solution and a group of thinkers who believe that a regulated structure is the only thing that can work. Mark Cooper referred in a paper to some of the monies that are being taken out of the market as "stupidity rents".

There are a lot of things that California has done badly. There's less generation constructed than would be desirable. That's probably last year's problem, as there is now a lot of capacity being built. There's less transmission constructed in California than would be desirable, which is a much less recognized problem than should be the case. Both of these phenomena are NIMBY or NOPE--Not On Planet Earth. There's a shortage of gas transportation capacity, partially caused by the events on the El Paso system. There's a shortage of rain and snow in California and to an even greater degree in the Pacific northwest on which California depends for approximately 1,000 MW every summer.

The CPUC has been reluctant to allow rate increases up until last week. But that's partially understandable, as the IOUs made a deal that they were going to require the consumers to pay a higher rate until either

the competitive transition charges got paid off or the period of time expired. San Diego and the public entities are probably the only people who are actually paying their bills.

There is a state/federal dichotomy problem in terms of who's got what authority. There is an attempt by California to repeal the Commerce Clause, which is keep all the power in California and don't let any of it get out, which doesn't make a lot of sense when you realize that California imports 30 to 40% of the energy it requires every year. There's a shortage of political will along with all the other shortages.

Any one of these factors might be enough to justify an award for counter-productive policy of the year, but it doesn't add up to all of the problems that we've seen. The public policy choice that FERC and California made back in 1996 was the theory that the adoption of a market-set price in lieu of a price set by regulation would be more efficient. The legal and policy basis for that decision was an assumption that the market would discipline prices in a more efficient manner for the benefit of the ultimate consumer. The Vickrey model assumes that because everybody gets the market-clearing price, it is in the producer's interests to bid only his short-term marginal costs, perhaps plus a margin if he knows what the margin between his short-term marginal costs and the next unit in the stack would be.

That's the model everybody tests the theory against. The California ISO has filed an analysis looking at the characteristics of each of the units operating in California and the gas price using spot gas prices on a daily basis. They say that using only the units that were in fact operating on any one day from March 2000 through February

2001, that they have extracted from the consumers of California some \$6.8 billion in excess of the cost that would have been incurred if the market cleared at the point the theory suggested. Picking up those costs has exhausted the surplus for the state.

Has the Federal Power Act been repealed? FERC's rationale for granting market rate authority has always been, well, if you can show that you can't affect the market you can have market rate authority. Almost anybody can pass that. FERC has to do something; they have no excuse not to. The ISO has said it will attempt to impose bid caps, which means that we will be able to see the supply curve running about where people thought it would.

Looking at what has happened as opposed to what we thought was going to happen with the theoretical model that was proposed, there are many things we see. A marketeering price model is clearly much more volatile than the kind of regulated average price model we saw for years, much more volatile perhaps. It's clear that we have to rethink the question of whether this market which is different than the other kinds of markets that have been deregulated--no storage, no demand response--will work. Demand response would be a great idea but the only way to get the average consumer to provide a demand response is to have real-time metering and information. Up until that point you're going to have to find a way of doing that with industrial load; some people have worked on that kind of approach, which might work.

Speaker Four

Consultants have concluded that most of the time the New York market has been

reasonably workably competitive. The reserve markets are tight, but the overall design appears to be sound. In the New York market, the issue is "supply, stupid." The seams issues are crucial. But if there is not enough supply, I'm not sure we're going to win the game when it goes to a full nine innings.

In terms of the summer, New York has some real challenges, but it is not a crisis situation from a standpoint of reliability or market prices even though prices will be high this summer. Statewide, New York will meet its 18 percent requirement. It may import three to four percent, but that will be firm contracts, coming from Hydro Quebec and maybe some from PJM. But the state is in good shape from the standpoint of meeting its reserve requirements. Concern about reliability and prices is virtually all in New York City. There are locational requirements in the city because of the transmission constraints, which say that New York City is 400 MW deficient and Long Island is about 132 MW deficient.

The New York Power Authority is trying to put in 10 small turbines, 44 MW each. They're all under construction, and there are lawsuits against them. If the lawsuits do not stop them, more than half will get on before July, and maybe some in August. For this summer the city will probably meet the minimum installed capacity requirements. The cable system in New York is in as good shape as can be. There's a transformer being made in Spain and flown over that should give New York its full import capability. NY ISO has been working with PJM to ensure that the 1,000 MW wheel that Con Ed has coming through PJM that way is going to be firm this summer.

The market is the next question. There are a

lot of issues that generators wanted changed that going through this governance process took a long time to get to yes on. If you want to make a market improvement, it takes NY ISO four to six months to get agreement among the market participants on what the change is, and it can usually implement it in about 90 days.

Fundamentally the New York market is not either lowering or adding any price caps or other devices of that type. NY ISO is supportive of the regional \$1,000 price cap. I do know that there is a political limit to prices--when New York had a hundred million dollar day due to market power, and did not have the authority to correct it, that was a wake-up call. If New York has a couple of those days, then the market is over. There's plenty of room for people to make money, but there is a political limit. New York is proposing bid caps through the next two summers. The ISO has authority under what are called temporary extraordinary procedures to change market rules if the outcome is not an economically intended outcome.

New York has had instances of, while it technically didn't fit the definition of abuse of market power, the rules were allowing somebody to make money having nothing to do with supply and demand. Within the existing market mitigation plan, the ISO has authority to mitigate at several threshold levels, some automatic and some requiring a FERC filing. There's no proposal to change any of that, except the ISO is gearing up to be ready to use the lower thresholds if necessary.

The circuit breaker: It is an automatic application of the existing marketing monitoring rules. The ISO has the ability to use certain FERC-approved standards that

define market power. At the automatic level, the ISO is running the day-ahead market multiple times. The ISO views it as eliminating the free bit of the apple; it is not an expansion of existing authority, which is one of the reasons for confidence in not asking for lower caps, soft caps, etc.

The most important thing in terms of the next steps is, What are we going to do to harmonize these markets? The memorandum of understanding between the four IOUs in the Northeast basically advocates the creation of a virtual ISO, which allows us to harmonize the rules where we can and minimize the impact of the different rule sets, primarily on transactions at the borders. The biggest opportunity for New York is with New England, because while the rule sets do cause problems for some customers, the ties between PJM and New York are loaded all the peak hours.

NY ISO has also engaged in a study to start to address the question of larger markets in the Northeast, and may want to merge the ISOs at some point. It has done a feasibility study that says, suppose we create a day-ahead market with the settlements still done locally by the ISOs, but the day-ahead financial market and unit commitment across the entire Northeast done by a single market. There may be benefits in taking a look at that. The ISOs have an obligation to at least get those issues on the table and try to facilitate the answers, even without the authority to solve some of these things.

As to generation, New York has 29,000 MW proposed to be built, the vast majority in the right place, New York City, Long Island. Only two of those projects have made it through the state's licensing board, and neither is under construction. Physically under construction are the 10 small turbines that the power authority is putting in, and

they're only permitted for three years. The state needs base load generation, to solve not only reliability concerns but in order to provide a robust market. The report "Power Alert" recommends that the state approve this year 4,000-5,000 MW of base load generation. Unless they're in the pipeline, New York is facing a problem two to three years from now.

One of the interesting corollaries is that none of this requires any loosening of environmental standards. The environmental requirements are appropriate, and none of the developers is proposing waivers to any environmental requirements. If the folks in New York are really concerned about the air quality in the state, then the best thing to do is get all of these big base load plants built as soon as possible; the impact on SO₂ and NO_x is dramatic because we have such dogs for old generating stations. The average age of a power plant in New York City is 35 years old, and they are not great economically or environmentally.

Load is going up, transmission investment is going down. Transmission incentives are important. But it doesn't matter whether you have an incentive part of it unless the siting situation is solved. The idea that you can do it without at least a threat of a federal club is wishful thinking.

The New York market's been going for about one and a half years, and is a competitive market, not that there isn't much to do. The issue is supply. If there is a balance of supply and demand, we're confident the market will work. It really doesn't matter whose rules wind up winning or whether you harmonize them, the point is to eliminate the barriers--especially, at this point, in its licensing process.

Discussion

Comment: There is a disconnect between two of your statements, the first being that there has to be a balance between supply and demand, and the second being, "So the answer is supply." I would be more convinced if you put up the numbers for what the economy is doing to drive demand and then subtracted from that, here's what we're going to get with more efficiency on the demand side, more price-responsive load, etc. Make the case that you are looking at the other side of the equation before you say to the public, "I'm here to beat you over the head about why you should want more power plants." First show the public that you have looked at less expensive and less environmentally damaging alternatives, and really have gone to that market first.

Response: The fundamental way to get demand side to work is to get real-time prices, metering, and billing in place, at least for big industrial and commercial loads, and then we will not have to micro-manage the design of these price-sensitive load programs because they'll take care of themselves. In the meantime, New York has an interruptible load program which operates in the reserve regime. And there is a price-sensitive load program, where the loads bid in at whatever price they want day ahead, and take on the same responsibilities and performance requirements as a generator. There are some amazing technologies that allow customers to benefit, where the customer doesn't have to make decisions. We should be moving in that direction.

Question: Is this a catastrophic situation where we won't get a second chance, or is it just a problem with some rules and some

things that went bad that well, gee, we can fix it and get it right for California and for the west and for the country sometime soon?

First Response: California has done an incredible disservice to everybody by blaming this all on some sort of conspiracy and letting their consumers think that it's not real. You can nick around at the edges with a little bit of new generation, but if we're talking thousands of megawatts short and the politicians do the wrong thing, it's done.

Second Response: That's why I think that there is considerable political as well as numbers legitimacy to the filing that the ISO made which says, let the theory work but let's make sure it works right and put on temporary bid caps. Whether they have the exact numbers right or not I don't know, but if they don't do something the West coast is down the tubes.

Comment: I think, unfortunately, there's another big shoe to drop in California, and that is the economic effect outside the energy industry. There's \$10 or \$20 billion that nobody knows who's going to pay it and where it's going to come from, so the economic impact on the non-energy economy is still unknown. In the Eastern interconnection, particularly where the four ISOs are, the transition period to get to a truly economic market is difficult and the question there is, is it going to be smooth enough that we will get through the transition and to the other side, where we will have a much better way to supply electricity? I think there's a reasonably good chance that the transition won't be too rocky and that we'll get people to stay the course. Most of the regulators, at least in the Northeast, are committed to stay the course right now.

Comment: Best estimates for this summer are that California may be as much as 6,000 MW short. When you have regular rolling blackouts, you start real political backlash. And the financial consequences to the industry are gigantic.