

After the Storm

**Interviews with Prominent Economists and
Policy Leaders on the Future of the California
Energy Market**

Hewlett Foundation

Energy Series

Photo credit: Al Puente

Interviews Conducted and Compiled by
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Spring 2002

The Energy Foundation is a joint initiative of:

The Hewlett Foundation, The John D. and Catherine T. MacArthur Foundation, The McKnight Foundation, The Joyce Mertz-Gilmore Foundation, The David and Lucile Packard Foundation, The Pew Charitable Trusts, and The Rockefeller Foundation.

This paper is one in a series of papers examining the California energy crisis and potential solutions for the future. This work was sponsored by the William and Flora Hewlett Foundation and managed by the Energy Foundation.

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Acknowledgements

“After the Storm” was funded by the Energy Foundation, with financial support from the Hewlett Foundation. It is part of the Hewlett Energy Initiative, a series of research papers and projects on the California power crisis of 2001-02, to be released throughout 2002.

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Arthur O’Donnell is the editor and associate publisher of the California Energy Markets newsletter. For more information about CEM, call (415) 824-3222, or see www.newsdata.com/cem.

The full text of these interviews may be downloaded from the Energy Foundation web site at www.ef.org.

AFTER THE STORM

For the foreseeable future, California's electricity market will be scarred by the "crisis" events of the summer of 2000 and winter of 2001. While the conditions underlying the emergency have passed, we all will be paying for the residual effects for at least a decade into the future.

To my mind, some of the heaviest costs are not the immediate impacts of the crisis, measured in price spikes, lost business and bankrupt utilities or market players, but the lingering liabilities of the emergency response—the heavy debts associated with power procurement, the loss of confidence in markets and market structures, the consistent compulsion of politicians to cast blame and regulators to try to reassert control over markets rather than fix the problems.

No one has come out of the emergency unscathed by the costs or untainted by recrimination for their actions, inactions or downright foolish behavior. Although there are plenty of accusations about illegal activities among power sellers, the sad irony of the situation is that, to date, the only proven instances of legal violations have been traced to state contractors who failed to reveal or relinquish their financial investments in companies with which they were negotiating, and a breach of the neutrality policy by a transmission system manager who purposely solicited supply bids to result in a more favorable outcome for the state.

What can we do about it now?

With the worst of the crisis behind us, a growing body of analysis that tells us what went wrong and some educated guesses as to why, this seems to be a perfect time to look at where we've been and determine a better course for the future.

Is anyone willing to do that? I'm not entirely certain. Recently, the California Energy Commission hosted a day-long event meant to begin such a process, and while it offered good presentations and entertained several valid ideas, there was practically no interest from the people and institutions that might actually do something to put those ideas to work—little representation from the Legislature and none at all from the governor's office or the California Public Utilities Commission. The California Independent System Operator has begun another round in its perennial process of "market redesign" to provide a more stable operational structure that might be less susceptible to overt manipulation, but it does not address the big question about how California should proceed.

The CPUC has opened more than a half-dozen investigations to review various aspects of the crisis and consider policies for the future, but the common thread running through them is the need to find someone to blame and to assert control over entities and operations where it either had been relinquished to the restructured market or had never before been exercised.

Clearly, the regulatory pendulum has swung away from promoting open markets and competition. The CPUC is now articulating a policy to reinstitute cost-of-service regulation over a utility industry that no longer exists as it did a decade ago. CPUC president Loretta Lynch this year told lawmakers that the failure of the market necessitates giving back to utilities the "traditional responsibility" for procuring power and restoring traditional ratemaking. "The experiment did not work and the way to make it work is that appropriate costs are covered with a return on investment," Lynch said.

The commission also seriously contemplated a retroactive suspension of electricity customers' legal rights to contract for non-utility power supplies. The rationale for such a policy was that, by exercising choice, those customers were avoiding their "fair share" of the costs of the energy crisis. In a split decision, the agency decided against overturning already existing contracts but said it will fashion an "exit fee" on those who entered new direct-access agreements since June 2001.

Similarly, Pacific Gas & Electric's proposed plan for reorganization to exit Chapter 11 bankruptcy is attacked by the state as an attempted "regulatory jailbreak" rather than being seen as a way to restore fiscal stability. Conversely, when PG&E justifies its plan to remove key regulatory assets from state oversight to federal jurisdiction, it does so by providing a litany of "policies that caused PG&E's bankruptcy."

The Legislature and the governor are now occupied with other crises—both the budget emergency and the need to be reelected—and energy matters have moved to the back burners in Sacramento.

Given all this, many people are wondering whether there remains any energy market at all to restore.

A Search for Solutions

Recently, I conducted a series of interviews with noted economists about California's market to see if they could offer ideas on what might be worth saving from California's foray into restructuring. (The following report contains excerpts of these interviews. The full text can be downloaded at www.ef.org).

Paul Joskow, director of the Center for Energy and Environmental Policy Research at the Massachusetts Institute of Technology.

Severin Borenstein, director of the University of California Energy Institute.

Frank Wolak, professor of economics at Stanford University and chair of Cal-ISO's market surveillance committee, as well as an associate at the UCEL.

Mark Bernstein, senior policy analyst at RAND Corporation.

Bill Marcus, principal economist at JBS Energy.

Robert Michaels, economics professor at California State University, Fullerton, and affiliate consultant with Tabors, Caramanis & Associates.

Though he could not participate in an extensive interview, noted economist **Alfred Kahn** offered a few thoughts on preferred policies.

And to address the practical implications of the state's response to the emergency, **Dave Freeman**, chair of the California Consumer Power and Conservation Financing Authority.

As might be expected, what I'm discovering from such a diverse body of thinkers is that there are no simple solutions to the problems that triggered the California blackout crisis and few areas of consensus about how to proceed in the future. But at least the exercise has provided an opportunity to look forward, to determine what might be done to secure a more stable energy market, and more importantly, what should be done about the other great failure of the California marketplace—the continued fragmentation of policy and ill coordination among the growing body of regulatory commissions, market entities and other state agencies involved in energy.

Let's Talk it Over

More than anything else, California needs to decide exactly what kind of electric power marketplace it wants to have going into the future. To avoid doing so for much longer risks the ad hoc imposition of policies and institutional barriers that will be impossible to untangle later on.

Paul Joskow, director of the Center for Energy and Environmental Policy Research at the Massachusetts Institute of Technology, sees a series of questions that must be asked and answered before a new course of action can be reasonably implemented.

“Going forward,” Joskow said, “California really has to decide: Do you want to rely on competitive wholesale markets? Do you want to rely on competitive retail markets? Do you want to go back to a system of regulated vertically integrated monopolies? Those are really fundamental questions that California needs to answer because I think you can't just polish off bits and pieces of the current system and expect it to work without some basic decision about what the future structure of the industry for California will be.”

Mark Bernstein, a senior policy analyst at the RAND Corporation, agreed. “I would say we have to rethink what we're trying to achieve, and we have to figure out what the goal is, and when we've decided what the goal is, then we can set up the system to meet that goal. If the goal is to have a functioning market for power in this state, then we need to set up the system to achieve that goal and set up a very different system than what we did set up.”

“AB 1890 wasn't a law,” reflects Robert Michaels, professor of economics at California State University, Fullerton, and an affiliate consultant with Tabors,

Caramanis & Associates. “AB 1890 was a settlement agreement that fell apart partially through the self-interested behavior of people and partially through this year-long force of external events. You could not have the equivalent of the [Steve Peace] ‘death march’ today. There are too many interested parties. There are too many people with financial exposures that they would not risk in the Legislature, and you have federal and out-of-state interests which have become compellingly important.”

That sounds like a recipe for deadlock, but Michaels believes it is necessary to break through the impasse. “We can't live like this forever. We can't live with a federal presence that we don't understand the implications of, and we can't really go back. There is nothing to go back to,” he concluded.

Building blocks for a functional market

Severin Borenstein, the director of the University of California Energy Institute at UC Berkeley, sees the great failure of California's market less in what was introduced than in what was neglected. “There were two fundamental aspects to this that were ignored. One is the demand side of the market, which was completely left out, so that essentially we were operating a market where all of the adjustment had to occur on the supply side,” he said. “On the other side, the supply side, we threw everything into the spot market that wasn't contracted beforehand. We have to understand that for this market to work, we really need to have demand-side responsiveness and we need to have long-term contracting ability.”

Included in Borenstein's vision for demand-side response is not only a greater use of real-time meters to provide the kinds of price signals that energy users will

respond to, but also a restoration of the direct-access option—at least for larger customers that are better equipped to control their own energy choices than residential or small commercial customers.

Holding direct access hostage to the state's need to pay off the apparently high-priced power contracts signed by the Department of Water Resources would be a mistake, he suggested. Instead, the economist recommends seeing the contracts for what they are: financial liabilities. "We could pay for them by recognizing that there is this loss associated with these contracts, and that we can recover that loss by telling each participant, 'Here's your share of the loss . . . and now you're responsible for that bit of the contract.'" "

Of course, he added, "We're not going to do that at the residential level, but we can certainly do that with any customer who wants to go to direct access. If you want to leave the system, you don't just walk away, you leave the system with your share of this contract liability," Borenstein said.

That stands in sharp contrast with the CPUC's policy to indefinitely suspend choice. "The most antiquated 1960s version of dealing with this is locking everybody into the old utility system, raising flat rates because, again, they're not talking about allowing prices to vary with wholesale or with shortages in the market, and you're just stuck here. It's the innovation-destroying way to deal with this problem," Borenstein concluded.

Restoring direct access is not just a demand-side issue, suggested RAND's Bernstein, but is an integral component of restoring a market for power sellers beyond the state and utilities, while refining the state's role as market monitor and standards setter. "I think we've got to get back to a point where we do create

some competition on the generation side. We do let customers choose their provider at some level. And that's only going to happen if we get the real-time pricing or time-of-day pricing. If we get better information out there about how to change your energy use and things like that—which I think the state can do a really good job on and has a role in—that's basically where we should be."

For some, especially Bill Marcus, principal economist at JBS Energy who frequently consults for such consumer advocate groups as The Utility Reform Network and Utility Consumers' Action Network, direct-access availability might be restored on a core/non-core basis as long as those leaving the system cannot escape liabilities.

But Marcus believes there needs to be a much more active effort to bring down the costs entailed in those contracts. "We've got to try to do something to renegotiate some of those DWR contracts," Marcus said with increasing frustration at the inability of the governor to reach agreement with the suppliers.

"I think the focus needs to be on quantity and flexibility rather than price because the worst thing they did with those contracts was to essentially convert gas-fired resources, which are inherently flexible, into 24/7 and 6 x 16 must-take contracts. Essentially, they stood principles of resource planning on their head, made the gas-fired resources inflexible and as a result said, 'Now we have no room for renewables.'" He added, "That's got to be reversed if the state is ever going to do anything reasonable out in the future. My view is pay them [suppliers] a little bit of money and throw them out. Reach a settlement. It's cheaper than taking the power."

The entire debate over whether the DWR contracts are “huge losers” or the way that California “tamed the runaway market” is muddled by the fact that the wholesale power market currently does not offer a very good indicator for price transparency. When the Power Exchange went out of business, it took away the main pricing rudder—as controversial as it was, given the state of the market at the time.

But even with private pricing surveys or market indexes carried in various trade publications, people must realize that current wholesale trading is very thin, and price indicators going out into the future are unstable and unreliable. Robert McCullough, a Northwest economist and energy consultant, suggests that given the low volume on power futures, almost anyone could manipulate the prices to their advantage—and he cited Enron as a distinct example.

So that means the most important missing piece is the mechanism for establishing price benchmarks—not only as a check against utility purchases (when they return to that function) and a measure of what it might take to buy out uneconomic liabilities, but also to serve as a guideline for determining whether the state’s emergency response was a major mistake or just a correctable miscalculation. Currently, that is a matter of vehement conjecture—but only conjecture because in the long run things could look very differently.

There is little chance of restoring the Power Exchange. But Cal-ISO intends to create a more functional day-ahead market that can serve as the basis for price transparency today and into the future. Whether that redesign can be put into place in a timely manner is uncertain, however.

Frank Wolak, the Stanford economist who chairs the Cal-ISO market surveillance committee, sees that as a legitimate role for Cal-ISO, as long as it is not expected to “solve” the problems its systems may reveal. That means the ISO’s current proposal to secure capacity might not fit well with its recommended role. “The ISO should be effectively just a black box through which signals get transmitted,” Wolak said. “So, for example, we’re short of power, how do we solve that problem? We don’t solve that problem by the ISO going out and buying the stuff; we solve the problem by saying, ‘Look, we’re raising the price of power right now and if you’d like to supply, come supply.’” The same price signal will also trigger demand responses when needed, he said.

“So a lot of it is simply avoiding the tendency to be arbitrary and intervene in the market and use the signals that are already available in the tariff to effectively make this system stay balanced.” That is difficult, he acknowledged, because neither engineers nor regulators have much faith that markets can provide appropriate signals.

As the noted business historian John Steele Gordon has accurately observed, “Self-enforcing laws are in everyone’s interest except for one group, the people who make and enforce the laws to begin with. Those who work for government—legislators and bureaucrats alike—prefer to manage problems rather than solve them.”

The Future Challenge

So that is the challenge for California, to find ways to solve the problems raised by the electricity market

failure—not just manage them by creating costly policies and hurdles that will outlive the problem by decades.

As I said, consensus is elusive, but there are workable ideas that can be pulled together into a new plan for recreating a more workable power marketplace:

- Avoid arbitrary interventions in markets and be wary of long-term state involvement in purchasing and/or constructing supplies.
- Restore customer choice for those willing to pay for the privilege.
- Build demand-responsiveness into the system with new technologies and harness price changes, rather than trying to completely “protect” consumers.
- Negotiate in good faith—not strong-arm—the DWR power contracts.

But most importantly, California’s leaders and market participants must consciously decide which path to pursue. Paul Joskow said California’s failure is not a general indictment of restructuring, which has evolved in England and in other parts of this nation. “I think they should look around the country and around the world to see what others have achieved from various kinds of reforms.”

Arthur O’Donnell is editor and associate publisher of the California Energy Markets newsletter, based in San Francisco. A version of this article originally appeared in CEM (Issue No. 653, January 25, 2002). This project was funded by the Energy Foundation with the support of the Hewlett Foundation.

BIOGRAPHIES OF INTERVIEWEES



Mark A. Bernstein is a RAND senior policy analyst specializing in energy and environmental issues. His work focuses on the role of technology innovation in reducing greenhouse gas emissions, scenarios for electric power in developing countries, and the role of energy efficiency in economic productivity. Prior to RAND, Mark served as senior energy policy analyst for the White House Office of Science and Technology Policy



Severin Borenstein, Director, University of California Energy Institute and Professor of Business, Economic Analysis and Policy Group (Haas School of Business, University of California at Berkeley).



S. David Freeman, Chair of the California Consumer Power and Conservation Financing Authority, is a long-time public-power executive who formerly served as the head of the Los Angeles Water & Power Department, the Sacramento Municipal Utility District, the New York Power Authority, the Lower Colorado River Authority and the Tennessee Valley Authority.



Paul L. Joskow is the Killian Professor of Economics and Management and director of the Center for Energy and Environmental Policy Research at Massachusetts Institute of Technology.



William B. Marcus is principal economist for JBS Energy, West Sacramento, who frequently provides expert analysis and testimony on energy and regulatory matters on behalf of consumer advocacy groups in California.



Robert J. Michaels is Professor of Economics at California State University, Fullerton; and adjunct scholar of the Cato Institute. He is also a consultant with Tabors Caramanis.



Frank A. Wolak, Professor in the Department of Economics at Stanford University. His recent work studies the impacts of competition policies on consumer and producer welfare. He is the chairman of the Market Surveillance Committee of the California Independent System Operator. He is also a visiting scholar at University of California Energy Institute and a Research Associate of the National Bureau of Economic Research (NBER).



MARK BERNSTEIN

Senior policy analyst at RAND Corporation.

December 6, 2001

Q When AB 1890 and California Public Utilities Commission policies were put into effect in the 1996 period, a number of new ideas, new market structures, new entities were set up. And yet in the past year and a half many of those have either failed, proven to be false assumptions about how the market might work, or were under-mined by the legislative response or even regulatory response to it. In your view, having now a 20-year perspective on restructuring, what of that effort is worth trying to preserve as we go into the future?

MARK BERNSTEIN: I really think that in the long run, retail choice has got to come back. I think that we would have a better overall, a healthier electric system if we work it out so people can choose. But it has to be carefully structured. We have to have the proper information and the proper mechanisms for that to work. And that's only going to happen if we get the real-time pricing or time-of-day pricing. If we get better information out there about how to change your energy use and things like that, which I think the state can really do a good job on, and has a role in, and that's basically where we should be. Hopefully.

Q How do you feel about what Californians have done during the past summer? We have documented evidence that even on an actual metered basis we have significant reductions during the summer period and peak-load reductions compared to last year, although that may not be the best basis point. Is this something that is sustainable?

BERNSTEIN: I'm a little skeptical about the numbers that the California Energy Commission's coming out with. I think they generally do a good job, but I think they may overstate the impact of the efficiency programs. I think they may be overstating how much demand would have been expected given how slow the economy moved. So, I think there has been some reduction due to the efficiency programs and price rises, but I don't think it's as high as what's out there, that 10-to-15 percent number.

Is it sustainable? We're going to have to wait and see. How much of it is conservation which is people turning off lights, which won't be sustainable because people will forget, go back to their old ways, or turning down thermostats. And how much is efficiency, how much is people putting in fluorescents, buying new appliances, commercial buildings changing operations, things like that. A year from now we'll have to look and see how it's going.

Q We talked about what should be preserved, but what is beyond salvage? What should we leave behind as a bad experiment and not even try to incorporate into the future?

BERNSTEIN: It wasn't really things that were done that failed, it's things that weren't done and failed at some level. You had to have this confluence of events that people categorize as the "perfect storm" to make it as bad as it was. You made too many restrictions on the market, you didn't allow utilities to enter bilateral agreements, you froze rates, you had a drought, you had a pipeline explosion.

And you had people waiting too long to take action, too, because the signs were there the summer before, or at least into the fall before and things should have started moving then. I would say we have to re-think what we're trying to achieve and we have to figure out what the goal is and when we've decided what the goal is, then we can set up the system to meet that goal. If the goal is to be able to have a functioning market for power in this state, then we need to set up the system to achieve that goal and that would set up a very different system than what we did set up.

It's almost starting from scratch, and we have time to do it. We could figure out how to make the markets work, how to make sure that somebody's watching out so that we don't get into the stress situations, who's responsible for that, and how to make that work. And let's strategically plan this thing. So it's not a simple answer, and I don't have that simple answer because I think there needs to be some work before we get to that answer.

Q Do you think the state's ready to listen to that advice now a year later?

BERNSTEIN: I don't know. There are too many people who think they know what the answer is right now, and I'm one of the people who's saying I don't think we know what the answer is because I think there's a lot of analysis that hasn't yet been done to figure out what the answer is. There are too many people in power that think they know exactly how to solve the problem already. And I think they're wrong, and I think they don't know. I don't think anybody knows.

Q One of the answers that I know at least a couple of prominent regulators feel is to return to regulation, return to command and control, have utilities be the agents of state action, tell them what to do, control the prices. Is there something of that "good old days" history that really is worth preserving and worth bringing into the future that can work with a competitive market?

BERNSTEIN: Well, the transmission/ distribution system was always still going to be regulated. In terms of the old vertically integrated utilities, there's no in-between. You either go back to a vertically integrated utility that has a better regulatory structure, because there are better ways to set up regulation. We didn't have to go to the restructured route. We could have improved the regulation. So you've either got to do that or you've got to have a marketplace on the generation side. I don't think there's any in-between, and I don't think we can go back.

Q The legislation that enacted the Power Authority gave it almost no limits. The only limit was a suggestion of a \$5 billion bonding authority, but beyond that it could choose its own employees outside of Civil Service rules, have the powers of eminent domain, have the power to do any kind of contracting to take over projects, to actually envision being the owner of long-term contracts even though there was only a five or six year sunset on this agency.

BERNSTEIN: Which makes no sense. We were trying to look at the New York Power Authority as a model,

and there were limits to what they can do. I really thought there needs to be more definition and there's still time to do that. You can add legislation that better defines this agency. I think a five-year sunset is silly when we're talking about energy, which is a long-term investment. You're trying to make long-term investments, you can't have a five-year sunset. So that doesn't make any sense.

On the other hand, giving free rein to the organization to do anything it wants doesn't make any sense either. One of the things that was lacking in California as well as the nation—and what we advised to Congress—was there's nobody responsible for looking at the infrastructure and providing early-warning notices that we're getting into a supply constrained situation, whether it be generation, or transmission, or distribution.

There needs to be some fundamental role for watching the system, and I think the Power Authority could do that. So that's one important role I think for them, is to do long-term planning. Not planning, but long-term analysis and make sure that what we have in the hands of the private sector is going to meet the needs in that the transmission and distribution system is keeping up and the links to the natural gas issues are being dealt with, and we're dealing with drought potential things.

I also think the energy efficiency side of it is a proper role for the state to take. I don't think the utilities do it that well. I think they do okay, but that's not their core mission. Their core mission is to sell electricity and the less they sell, the less revenues they make, the less return they get. So take that out of the hands of the utilities and put it in the hands of a different institution.

Q Maybe you see this as a role that the Power Authority could fill?

BERNSTEIN: Yeah. And it makes sense for the Power Authority to fill that. Let's step back at the issue of what should [be preserved]. It occurred to me what I think needs to be preserved and one of the things that needs to be preserved is the PUC's right of regulation...

Q Define that for us.

BERNSTEIN: Price regulation at the retail level. One of the things that has been both in the PG&E bankruptcy, and the Department of Water Resources wants to take that out of the hands of the PUC, and not that I think that PUC's necessarily done a good job, but I would not want to take that away from the people's right to have a voice in this. And the minute you take it out of the PUC then you lose all other voice and I think that's a big mistake. I think there needs to be some oversight by an agency that is independent of the Governor.

Q What haven't we talked about that you think is vitally important.

BERNSTEIN: Natural gas. While we're also worried about the electric system, I continue to be worried

about the natural gas system. Demand for gas is going to soar once the economy starts coming back on line and nobody is seriously looking at how we move the gas to where it's needed when it's needed.

Fundamentally we're changing the demand pattern for natural gas. Traditionally natural gas peaks in the wintertime. Well, last year it peaked in the summer. Summer peak was higher than the winter peak. But the system is not set up to meet the winter peak. It's set up to store in the summertime, spring and summer,

to have enough to make up the difference in the distribution capacity for the wintertime. Well, if you're using it in the summer at a higher peak, you fundamentally change the system. And nobody's thinking of that.

I worry about all these plants coming on line, many of them in PG&E territory to begin with, are they going to be able to do the upgrades needed to get them? And then you've got this huge growth and demand throughout the West, and I'm not sure we can meet that.



SEVERIN BORENSTEIN

Director of the University of California Energy Institute and Professor of Business, Economic Analysis and Policy Group for the Haas Business School at UC Berkeley.

December 13, 2001

Q Out of the restructuring regime that came from AB 1890, and the California Public Utilities Commission’s policies, is there anything worth trying to preserve?

SEVERIN BORENSTEIN: I would say almost everything is worth trying to preserve. It’s not that what was there was broken, it’s that not enough was there. There were just two fundamental aspects to this that were ignored. One is the demand side of the market which was completely left out. We basically ignored it.

And on the other side, on the supply side, we threw everything into the spot market that wasn’t already contracted beforehand. And one of the problems with that, of course, is that when the price went up, we were exposed to it on a much larger scale than should have occurred. And the other part, which also feeds back to the demand side is that both the lack of long-term contracting and the lack of demand responsiveness were just set-ups for suppliers to be able to exercise extreme market power.

We have to understand that for this market to work, for an electricity market to work as a market—and I would argue that there is no electricity market in the world that’s actually working as a market right now—that we really need to have demand-side responsiveness and we need to have long-term contracting ability.

Q That implies that direct access ought to be a viable component with this and yet direct access has been held hostage to emergency

response. So how do we restore direct access and take care of the state’s financial problem?

BORENSTEIN: This is the fundamental misunderstanding in the state right now, that direct access is a problem for dealing with the long-term contracts that the state has signed. The state has signed X billion dollars in long-term contracts; it’s some big number. Those contracts are now very big losers. Huge losers. So the state is stuck with this liability.

Somehow they have to recover enough money to pay for these contracts. Now there are many ways you could do that. We could pay for them through the California taxpayers. I don’t think we should, but that’s one way we could do it. We could pay for them by locking everybody into a utility system, raising rates and forcing everybody to pay the high rates and skimming the extra off and paying these stranded investments—which is what these are. That’s what the CPUC proposes to do.

Or, we could pay for them by recognizing that there is this loss associated with these contracts, and that we can recover that loss by telling each participant, here’s your share of the loss and you can pay for it through any number of ways. So, for instance, we could do the calculation, well over the next 10 years we’re buying X amount of power each hour.

Now, we’re not going to do that at the residential level, but we can certainly do that with any customer who wants to go direct access. If you want to leave the system, you don’t just walk away, you leave the system with your share of this contract liability. On the other hand, make us an offer. You could also come to a state and say you want us to walk away with this contract,

here, we'll just give you right now \$2.5 million—or whatever the number is—to buy out our share of the liability.

These are financial liabilities, they can be traded as financial liabilities. The most antiquated 1960's version of dealing with this is locking everybody into the old utility system, raising flat rates because, again, they're not talking about actually allowing prices to vary with wholesale or with shortages in the market, and just saying you're stuck here. It is the innovation-destroying way to deal with this problem.

Q You express an interesting in bringing back a Power Exchange. That's kind of unlikely, but there was a value to the Power Exchange in that it provided a transparent price that people could possibly do something with if we ever got to that point.

BORENSTEIN: We don't need a Power Exchange, and I have no interest in bring back the Power Exchange per se although I'm on the board. I would actually rather it went away so I could get off that job.

But you could run a day-ahead market with a transparent price through the ISO, and I think the arguments for keeping them separate have been shown to be pretty bogus and you might as well just put it in the ISO and right there. Yes, you do need to have some sort of a transparent price to run lots of contracts.

One of the things you need a price for is real-time pricing of electricity, which ties back to the issue of demand responsiveness. There are a lot of ways to do

demand responsiveness from the bluntest of blunt instruments that says if it gets bad we can come and shut your power down, to the most refined, which says hour by hour you get charged or minute by minute you get charged a different price. Probably hour by hour.

Customers would then have the incentives when prices go through the roof, that is either when demand is incredibly high or for some reason you have a shortage on the supply side—or both—to cut back.

Right now we don't have any mechanism that does that. One of the dirty secrets from the summer of 2001 is that...well, it is well-known we got lucky on the weather. What's not as well known is if we hadn't gotten lucky we had no back-up. We had no interruptibles, almost no interruptible supply or interruptible demand, and all of the other programs . . . although the programs were initiated, they had almost nobody signed up for them. If we had really gotten into trouble and gone to the cupboard looking for demand response, we would have found that there wasn't much there.

Q Of the restructuring package, you said that most of it could be preserved, but what part of it shouldn't be? What should we abandon? What should we give up as a bad idea?

BORENSTEIN: The rate freeze combined with the lack of long-term contracts. The rate freeze would have been fine if the utilities could have gone out and signed long-term contracts because had they known that they could cover them. They were unwilling to do it on their own dime, but had they known that they

would be allowed to go out and sign a four-cent [per/KWh] contract for the next four years, I suspect they would have done that. And then even though the spot price would have gone through the roof, they wouldn't have been paying it on much.

So, it was the deadly combination that was set up of not having long-term contracts and at the same time having a fixed retail price that really caused this crisis, and it was all exacerbated by the fact that the wholesale price was not a competitive price, that the sellers figured out they could make more money by selling less power.

I don't view that as a crime, certainly not an antitrust violation in the way I think they were doing it, which was not collusively but individually. It probably was an action that merited response by the FERC sooner than they did respond.

Q We have seen positive effects of the move towards conservation and some efficiency installations over the past year. Do you think they're sustainable?

BORENSTEIN: No, I don't think they're sustainable if we don't have a pricing mechanism that ultimately gives people the right incentives. I think that if you look at summer 2001 we had a tremendous response. Some of it was price driven, that is some of it was driven by the 20/20 Program, some of it was driven by the rate increases, even the residential rate increases, which were very small primarily because residential consumers thought they were much larger than they actually were.

But some of it was also driven by good citizenship and by pleas from the Governor and other people to conserve and by rebates for new appliances and things like that.

Ultimately we're not going to have a 20/20 plan every summer – I hope. Ultimately we're not going to heat up public spiritness so that every year people will conserve in the summer. You know they're just not going to. You can't maintain that sort of spirit. Ultimately we have to have a price system that says it costs a lot to run an air conditioner on a really hot summer afternoon so maybe you should try to put a tree up that will shade your house so on that hottest summer afternoon you're not cranking it quite as much. But I think to do that ultimately we need to have pricing signals that people understand will kick in on those hot days. And again, we're not going to do it at the residential level next year, but we could certainly do it at the commercial industrial level next year.

Q You don't see much of a need for the Power Authority, you don't see much of a positive role for it, so let's explore that. Is there something that the Power Authority could be doing that would be valuable now, or into the long term, and what is it doing that maybe it shouldn't be doing?

BORENSTEIN: It's hard to know what the California Power Authority should be doing because there are so many other energy commissions, administrations, bureaucracies in the state.

One idea when the CPA was first discussed was that it would be the umbrella organization, and the ISO

would be under it, and the CEC would be under it, or at least the [generation] siting part of the CEC. I could see that as making sense as a Power Authority being sort of the umbrella organization.

What the CPA should not be doing—quite clearly—is building power plants. There is this notion out there, which the Power Authority is one of the advocates of, that the state must have an X percent reserve in order to assure a competitive market. Well the X is not a number that you can calculate, despite the recent ISO study that was sort of forced to come up with some number. You don't need any reserve or almost no reserve if you have enough price responsiveness on the demand side. Because if you get short, the price goes up, people will conserve and it will send signals to invest.

I think that there is real argument for government sponsorship of research and development on efficiency programs and on renewables. By the way I think there also is real argument for sponsorship of government support of R&D on nuclear power too. That is, these are technology investigations that would have huge spillovers when they paid off, and that's the sort of the thing the government should be supporting.

But the idea that the state is going to systematically, rather than send the right price signals, subsidize people to do what we think is the right thing in their individual house, is really a huge step away from sort of the capitalist system where people make decisions about how to spend their money to make themselves well off; in a way that makes me very uncomfortable. I would much rather see a system that develops the technologies, informs people about the technologies and then lets them decide when they're going to use it.

Q Let's talk about the price caps. Is there a continuing role for something like what people call a "circuit breaker," an overall cap?

BORENSTEIN: Yes. I think until we have very serious and widespread real-time pricing of electricity at retail, we're going to always have price caps. I think we've got to have a price cap, maybe it should be much, much higher.

By the time the FERC finally came around the market had "fixed" itself. The market hadn't fixed itself. Enough things had happened that that the price caps didn't really have much effect. Whether you like or hate the long-term contracts, part of what brought prices down was the long-term contracts; the incentive to exercise market power was greatly diminished. It might not have been worth it given how much we paid but it certainly greatly diminished the spot price. The biggest thing, of course, was the price of natural gas came in-line, which greatly lowered the price of electricity, and we got very lucky with the weather.

Q Now you have testified in a number of forums about real-time pricing and getting the meters there and doing this. If that were our first priority, how would we go about doing it? Should it be the PUC ordering these?

BORENSTEIN: The meters are in, or are almost are in now. We could put in more and you could have the state pay for it, or you could rate base it.

We're just not talking about that much money here,

we're talking about tens of millions, \$10 or \$20 million dollars, we're not talking about \$100 million or like the amount we were spending every day on electricity in the spring. But the PUC has to actually implement a real-time pricing rate and the PUC is unwilling to do that. Loretta Lynch has made it quite clear that this is not something she's going to support, and I think until she changes her mind or somebody else is running the commission or there's some way to do this around the commission, which the only way would be to revive direct access, which they're also not going to support, I don't see how this moves forward.

Q Okay so we're going to be stuck in a limbo for an indefinite period of time?

BORENSTEIN: And I don't understand the politics well enough to know how much the Governor can pressure the PUC, or how much the Legislature can maybe override the PUC. But maybe from my sort of distant and naïve political viewpoint, it sure looks like it's just stuck right now. I wish I were more optimistic.



S. DAVID FREEMAN

Chair of the California Consumer Power and Conservation Financing Authority (a.k.a., the California Power Authority).

October 9, 2001

Q What's your immediate goal?

FREEMAN: It would seem logical that we would try to make a contribution to supply and demand as quickly as we prudently can. After all, the agency was born out of this crisis and I guess if you want to put a label on it, we're the "Never Again" crowd. Our job is to try to assure as best we can that never again are we plagued with threats of black-outs or price spikes of a kind that we had in the past.

We are not another government agency that feels proud of just shuffling paper. We are in the tradition of agencies like the Tennessee Valley Authority and the New York Power Authority, and Bonneville and others. I happen to know something about the history of TVA. It was enacted in May of 1933 and they were building Norris Dam in August. Got it built in 13 months. Put people to work.

Q Let me ask you this, because you're as familiar as anybody with the way the market was structured here. Obviously we saw that a lot of the elements that we thought were going to be good things have gone away. The Power Exchange, direct access, a whole sense of trust in choice and the retail players. What part of restructuring is worth trying to preserve?

FREEMAN: I think that it is possible for the bulk of the baseload, round-the-clock power to be supplied by private companies, putting their money, investing their

money in California and to be satisfactory—provided it's supplemented by something like the Power Authority that will assure they don't put us back on short rations.

Q So we're talking about the wholesale market here?

FREEMAN: That's right. As far as the retail market is concerned, all we got was a bill of goods as far as Green Power and direct access. The bulk of the people in California never really had a shot at lower priced electricity from someone else, or much of a shot at Green Power. I had more Green Power customers in Los Angeles, where we had a bigger program than the rest of the state put together and we did that without the benefit of AB 1890 or any state intervention at all. We did it because we believed in it.

Now I think most consumers of electricity would like to go back to the good old days where all they had to do was to pay a bill once a month that was modest in size and didn't have to read about this stuff in the paper all the time

Now sure, everyone would like to see the rates come down somewhat and that may happen in the future, but we've got to get this bond issue done, and we have to add constantly to our capacity and have it in the hands of people that will dispatch it when it's needed. And we have to keep conservation constant and we need to switch to renewables.

I think that the electric power industry probably needs to recognize that there is a whole new era ahead of us

called decentralized power that will be the wave of the future. And if anything is going to make that unmistakably clear I think it was the tragedy of September 11th. It reveals that everything that is distant and remote is vulnerable, and I believe people are more and more going to want to have their solar collectors and their fuel cells and their micro turbines.

I've been saying this for quite awhile, but I believe that central station, big power, is peaked out. It's not going away, but we are probably seeing the last decade of that era and the beginnings of a decentralized power world.

Q This agency has a rather open-ended authority. I've read the legislation and it looks like it's pretty much whatever you decide to create it to be. One of the big questions that's in a lot of people's minds is, is this a five-year institution, or is this a long-term institution?

FREEMAN: We've got to prove our worth. Obviously, as a new guy on the block, and unless we can show that we're doing something for the consumer, that we are in fact helping to keep the lights on and the rates down and the power supply cleaner, our tenure will be a short five years. If we're serving the public interest, it will be continued, so I think the burden of proof is on us, and we're going to see if we can rise up to it.

We don't feel that we are preordained, that we have some sort of a right to a future existence, I think we have to earn it. That's my attitude and I think the attitude of the board. I think that we're given plenty of opportunity to prove our worth, but the fact that we might own a peaking plant doesn't mean that it can't be sold to the

respective utility in a couple of years, or in four or five years. The agencies may die, but power plants don't. Not very quickly.

Q Aside from working with the existing regulatory agencies, there are a number of state entities, like the Department of General Services, that could be really good partners for you. How are you working with them?

FREEMAN: We're trying to get in cahoots with them. The whole idea of our acquiring solar and fuel cells is to install them in state buildings and try to acquire them at a price where just the electric bills that are not being paid would finance them. And so we're working as closely as we can—that may not be closely enough—but they are our partner, as is the Department of Water Resources, which may buy the output in the future. When the [California Independent System Operator] becomes creditworthy, they may acquire some of our peaking power.

Q A lot of people are looking at your agency to be the place where they can finally sell their renewable power, where they can finally bring the ideas that they've been trying to pitch and get into the state portfolio for a long time. Let's talk about renewables.

FREEMAN: And we're ready, willing and able to help them but they must realize that we have to sell that electricity to somebody, and that somebody right now is the Department of Water Resources.

Q One of the elements of the photovoltaics solicitation that you had was that not only would the state buy from these manufactures of the module, component makers, but also they would have to make it available to the general public at the same prices.

FREEMAN: We want to create a large solar power presence in California. We want to stop talking about megawatts and be talking about hundreds and thousands of megawatts. There's no reason why California should not get up there in the league with Germany and Japan and have at least hundreds of megawatts of solar and we're just trying to get us out of the cottage-industry phase into larger size plants and so we're offering to buy 20 MW a year if they will agree to at least offer that kind of volume to the public at roughly the same price.

We've got to get the price down and I think the market is potentially out there, but no one is marketing a product that is anywhere near economic, and we're trying to get there. We know there are economies of scale and we're trying to achieve them. And I think it can work.

Q Something else that's gotten a lot of discussion in your meetings is a return to integrated resource planning, and I want to talk about that with you because right across the street here is the agency [the California Energy Commission] that used to do that kind of thing. Is that going to happen here, is it going to happen over there? Where should it happen?

FREEMAN: We formed a team, we're going to work together. We've got the California Energy Commission already actively involved in putting together the basic data. We got the PUC involved, and we're getting some help from the ISO and the statute requires us to take the lead and we're going after it.

It's a new challenge in that no one has tried to integrate the workings of the government and the marketplace into a coherent plan and we're going to be working on scenarios to maximize reliability and security, to minimize price, to maximize cleaner air and then harmonize the scenarios into a plan. It's not going to be easy because there is conflict inherent between some of the objectives that we all subscribe to. Everybody wants the lowest possible price, the cleanest possible energy and the most secure and reliable. Well, we have to kind of look at those in a scenario sense and then see if we can fit them together. It may be some contradiction but maybe not. Maybe we can get the price of renewables down low enough to where it will be low-cost as well as cleanest and most reliable. We'll see.

Q Given everything that's happened in California and in our neighboring states, do you think that we can rehabilitate a competitive energy market, or is time to redefine the goal and come up with something else.

FREEMAN: I guess what I'm talking about and what the state has embarked on is a hybrid. It's a market where we are counting on competition to supply the bulk of the power but we're not just relying on them

and that we have not forgotten what happened to us. And so we have the Power Authority which has to have a five-year plan and to have enough ready reserves so that if the market tries to keep us short, we stay long.

In other words, to achieve a surplus and keep it regardless of how much is invested in California. And I think if we can maintain a surplus of 15 percent

reserve, than I think the market can function pretty well and we can have our cake and eat it. I think it's impractical to try to buy back all the power plants that were sold and it certainly would be stupid and foolish to go back to a pure deregulation mode where we have been. Ripped off once, shame on them, but ripped off twice, it's shame on us.



PAUL JOSKOW

Elizabeth and James Killian Professor of Economics and Management at MIT and the

Director of the MIT Center for Energy and Environmental Policy Research.

December 16, 2001

Many of the tenets of restructuring as embodied in AB 1890 and subsequent California Public Utilities Commission policies have either failed, been proven false assumptions or in other ways turned out to be different than what we expected going into it. So, looking at it now, what do you think might be worth trying to preserve as we move forward?

JOSKOW: I think it's important to decide to start with what kind of electric power system, what kind of an industrial organization for its electric industry California really wants. I think one of the many reasons California went wrong is that it took what I call a Chinese menu approach to restructuring. It took a little bit from what one group was proposing, a little bit from what another group was proposing and a little bit from what a third, fourth and fifth group were proposing and put them all together into a system that was internally inconsistent.

Going forward, California really has to decide: Do you want to rely on competitive wholesale markets? Do you want to rely on competitive retail markets? Do you want to go back to a system of regulated vertically integrated monopolies? Those are really the fundamental questions that California needs to answer, because I think you can't just polish off bits and pieces of the current system and expect it to work without some basic decision about what the future structure of the industry for California will be. The goals in California have been pretty consistent over time—of trying to provide reliable and economical supplies of electricity consistent with promoting environmental protection and energy conservation and I don't see why

those goals are likely to change. I think the real question is whether California wants to revisit what the best way is for achieving those goals.

If I can find an area of consensus right now it's that most of the economists would like to see direct access or customer choice restored.

JOSKOW: Well, again, I think the statement that people want customer choice restored sooner rather than later is the wrong way of looking at this. I think you have to take a holistic approach of what kind of a system you really want going forward. One of the key questions to ask is: What kind of a retail environment do you want to have and what is the associated procurement program that goes along with that?

You can have a system where the incumbent distribution utility serves all customers. At the same time you could still have competitive wholesale markets where it buys power. Another option would be to have a core and non-core system, where the incumbent distribution company has responsibility for procuring power for residential and small commercial customers. Again, it could do it through competitive procurement in a wholesale market, while larger customers have the option of going out and finding their own power supplier. And a third option is to go back to where we were and give everyone choice.

I think the lessons from other jurisdictions so far are that customer choice has worked most effectively in terms of real economic benefits for the largest customers. For residential customers it's basically been a failure everywhere in the sense that very few

customers have taken advantage of it, the customers that did have gotten dumped back on their local utility when wholesale markets exploded, and very few value-added services are being provided to residential customers and small commercial customers compared to the energy services that are being provided to larger customers.

If you look around the world, in England they now have a system in which everybody has direct-access customer choice, but it took them 10 years to get there, and residential customers were not put into the system until they already had a fairly vibrant competitive retail market for large customers and where they have, eight or nine competing retailers who are actively providing all customers with electricity and natural gas service.

So along that spectrum California needs to make a choice. One of the key decisions it needs to make is, if it really wants to go to customer choice and it's going to work, it's got to really deregulate that market. It can't mix regulated default service prices with unregulated markets. It's just not going to work.

And now California still has to resolve who's going to pay for all those contracts that CDWR [Department of Water Resources] has signed and the state is obligated to. And I know that a lot of proponents of customer choice think that if you leave the system you won't end up paying for that. Well, someone's going to pay for the costs of those contracts. The state's going to pay for it through taxes or the electricity consumers are going to pay for it in their electric rates or both. Since consumers are taxpayers, in the end the consumer pays.

Q We do have some voices on the California Public Utilities Commission that want a very traditional regulated system, back to the old ways of doing it.

JOSKOW: It's not so easy to get back to the old way of doing it because they've divested the generating plants. The utilities are still effectively insolvent. They haven't solved that problem yet. It sounds to me that [Pacific Gas & Electric] has given up on the state and is basically trying to put as many of its assets as it can under federal jurisdiction. It's not clear to me they're going to be willing to make investments under a California regulatory system, but that's something that needs to be resolved.

Q Regardless of whether California decides to go back to a customer-choice regime, we do have an overlay of wholesale restructuring. Now we have assets that were predominantly used to serve retail markets that are free to play in wholesale markets, and the whole restructuring at that level, which includes the Federal Energy Regulatory Commission initiatives. Can you talk about what's happening at the wholesale level and the interplay with retail markets?

JOSKOW: Well, FERC clearly has a program for trying to promote competitive wholesale markets and the program has a number of features. FERC is also trying to develop and to impose a set of basic wholesale market design rules that would govern congestion management, scheduling timing, the

provision of ancillary services, operating reserves and provide markets that can be used to balance supply and demand in real time.

So it's basically trying to provide the wholesale market platform upon which states can decide whether they're going to have customer choice, in which case intermediaries—retailers, electricity service providers—could link customers with wholesale markets. Or states that choose not to have customer choice but where the incumbent utility would be free to go out and buy power in the wholesale market to serve the needs of it regulated retail customers.

I think FERC is facing a number of very significant problems in doing this largely because the United States has not gone about electricity restructuring the right way across the country. It's very difficult to do when you have so many transmission owners operating control areas throughout the country.

And quite frankly it's very difficult to do when you have very different retail procurement regimes. Trying to impose a set of good wholesale market rules that are common so that suppliers in Virginia can in fact deliver power that in some sense benefits New York, to do that when every state has done a different thing in terms of what the structure of the incumbent utilities is, well, I think it is very, very challenging and very, very difficult.

Q Do you have any thoughts on the Power Authority—recognizing that you're 3,000 miles away and even the people who are sitting in that office don't know.

JOSKOW: I'll tell you the thought I have is California's making it up as it goes along day after day, and you can't intelligently answer any of these questions without a model, without a framework. This is where the industry is going and here where all the pieces fit and here's what is going to be regulated, here is not what's going to be regulated and either here is where I think the state fits in or I don't. They don't have a model that answers these questions. They're just making it up. It's just the worst example of industrial policy I've ever seen in my life.

I've been challenging folks in California to come up with that for the last year, and they're not going to have success unless they come up with it. Now I recognize they've been going from one crisis to the next, but putting the financial side of this onto the side for a moment, there was plenty of time in the last six months for people to sit down and iron out what the future's going to look like. And as usual in California, they've been sitting and arguing instead about exactly who's going to pay how much of this giant bill that they've run up, and I think it's unfortunate.

In the end, the customers are paying a whole lot more than they would have if California had done what Massachusetts, Rhode Island and Maine did during the summer of 2000. They recognized there was a problem. They recognized that retail prices had to go up and they let them go up and they took the political heat. And now they're coming down. Nobody's got 10-year contracts at 2-times market value, and we're moving forward with restructuring and programs to make competition work.

Q California's always had societal goals that get built into the utility system—resource diversity, energy efficiency. Should the state continue to do that? Should we rely on the market to do that? Can we rely on the market to do that?

JOSKOW: Again, I think people are approaching this in the wrong way, as they have for many years. I think the first question is to ask why is it we want to have any special conservation program or any program to encourage renewable resources?

We don't have supermarkets telling people, or giving people incentives to eat chicken rather than beef because it's healthy.

Q They just lower the prices if they want to move chicken.

JOSKOW: Yeah, it's up to them though. And the reasons are that in terms of renewable energy, people think we really need to do something about air and water pollution and CO2 emissions. My view is the best way to handle that is through regulations on the emissions, but the way things have evolved is, one way of handling it is, you sort of force electricity suppliers to favor these kinds of green resources, for example. I've never liked that. I'd rather deal with the pollution directly.

Utility procurement to favor certain resources, and some of the national bills have portfolio standards for retailers. I think the best way to do that is not to start

favoring particular technologies, it's to have a menu of technologies that satisfy some goal, to specify what the goal is and then to provide incentives for supplies to go out and try to achieve the goal as cheaply as possible.

You've got to decide how much more you're willing to pay for these environmental benefits and then to have a mechanism that basically allows the alternative qualifying renewable energy options to bid for. If you give me a penny a kilowatt hour, I'll give you a thousand megawatts. You beat someone who says I'll give you a thousand for two pennies a kilowatt hour.

I think there are better ways of doing that. But I think we need to understand why it is we're doing this. Again, it's a second- or third-best approach to pricing pollution, which I think is the best way to do it. To tax pollution, to put a price on pollution through requiring permits under a cap and trade system.

Conservation, again, also has an environmental motivation, but it historically was based on the assumption that electricity prices didn't reflect all the costs of producing electricity. Well, now in California electricity prices probably reflect 25 percent or 30 percent more than the full costs of producing electricity, so that can no longer be the rationale for conservation subsidies.

Q Is there any element of this that we haven't touched on?

JOSKOW: I think one things we haven't mentioned but I think is obvious is California is not an island. It's part of the Western United States, and I think it's

going to be very important as this moves forward for California and the rest of the states in the West to come to some common understanding about what the wholesale market platforms are going to be, how they're going to work with one another.

I guess the other observation I'd make is it's not clear to me that the electricity competition program is ever

going to be successful without a much more aggressive federal legislative program that really bites the bullet on a lot of the issues involving structure, especially of the network. Having every state do its own thing on an electric power network that spans large regions is really not going to work very well, and I just see continuing problems if we continue on this path.



BILL MARCUS

Principal Economist of JBS Energy.

January 3, 2002

Q The purpose of this interview is to talk about the future of California’s market, or picking up the remains of what’s left of the market and figuring out what to do about it. Where is California’s market and what ought we do right away? If anything.

BILL MARCUS: I think that we are clearly in a transition stage. We’re heading from the boom to the bust, and we’re heading there fairly quickly with some potential residual problems in the summer of 2002. I don’t think they’re likely to be that great, but if we get a week of 110 degrees we could have a problem in 2002.

We seem to be going back to “business as usual “again. We seem to be going back to asking what kind of discounts can we give interruptible industrial customers for nothing, rather than for actually having to do something. We’re going back to “Let’s forget about renewables because in the last crisis they didn’t help us,” because we forgot about them before then. We’re going back to de-emphasizing conservation. We’re heading exactly in the same direction that we were heading in the late 1980’s and again in the mid 90’s when we did this deregulation scheme in the first place.

If we don’t stop and do some things that are very intentional and very clear, we may be heading toward a repeat of the late 80’s and early 90’s, with power surpluses and out-of-market contracts and out-of-market power from various sources.

Q What I’d like to ask you to do is to think about the structures that were put in place with AB 1890, the policy directions, and tell me what of that you think is worth trying to salvage?

BILL MARCUS: The difficulty with trying to salvage it is that it was put together as a fairly clear ideological response, and the ideology has proven itself not to work very well. The whole ideology has proven itself to be bankrupt.

That said, we’re probably going to be in a place where there is a competitive wholesale market and we need to make that work. I think that there may be some place for direct access. I think the stampede to direct access in the last three months probably needs to be reversed so that we start over in a more deliberate way, rather than just say that those industrial guys who got out of the barn get to stay out.

We’ve got to try to do so something to renegotiate some of these [Department of Water Resources] contracts. I think the focus probably needs to be on quantity and flexibility rather than price, because the worst thing they did with those contracts was to essentially convert gas-fired resources, which are inherently flexible, into 24/7 and 6x16 must-take contracts. That’s got to be reversed if this state is ever going to do anything reasonable out in the future.

The major thing that needs to be changed is take-or-pay. In addition, we probably ought to be trying to get rid of some megawatts both in the middle and at the ends, in the 2003 to 2005 time frame when we’ve got serious surplus, and also shortening up some contracts if people are going to do that. I think there are some prices that are clearly unjust and unreasonable,

but most of them are in the short-term phases of the contracts.

My view is pay them a little bit of money and throw them out; reach a settlement, it's cheaper than taking the power.

Q The other big component of the state response was to create a Power Authority. We have a relatively short-term emergency, and yet we're creating institutions that look for all the world like they have a long-term mission, owning power plants that last 30-40 years. What's your thought about that and how that will impact whatever we do about restoring a market?

BILL MARCUS: The Power Authority is well-positioned to deal with renewables because renewables are capital intensive and have financing issues. They're at the place where the Power Authority's low-cost money can actually do some good.

I also think that you've still got various levels of bias and various problems in contracting with renewables working through the existing utility structures. I'm not saying go out and build thousands of megawatts of renewables tomorrow, because we've got a surplus. But to bring something forward so the next time we have a problem, we've actually done something that will cut some of the top off of it.

Q While we're on the topic of renewables, the Energy Commission had a program of subsidizing existing plants, new production and advanced technologies. While they've given out a

lot of awards to try and encourage construction, there's really no market there. How do we deal with that?

BILL MARCUS: Because there are no creditworthy buyers. When the utilities get credit worthy, they hate renewables, that's why you end up working with the Power Authority structure and making the utilities buy them.

Q What do we have to do to get there?

BILL MARCUS: At the California Public Utilities Commission, we have a whole proceeding on procurement which deals with the utilities, and [president] Loretta Lynch, bless her heart, found the statute that most of the rest of us have forgotten about, which is 701.3 of the Public Utilities Code. It basically says we have the right to set renewable procurement requirements for the utilities. I think that's a good lever, one we're going to have to use.

Q The other emergency responses entailed 24 executive orders from the Governor, ranging from reducing energy use in state buildings, which actually seems to have worked, to expedited power-plant siting, and that's something that seems to have the longer term effect. So, is there anything out of that body of executive responses that we ought to maintain and build upon?

BILL MARCUS: I can tell you we ought to stop the expedited siting of power plants immediately and

retroactively if possible. From the rest of it I think that clearly anything we can do that would produce sustainable efficiency and I'm not talking about public appeals.

Q Not Flex Your Power television commercials?

BILL MARCUS: Flex Your Power has some good stuff in it. I think we ought to work on behavior but the fact that I was sitting over there without any light for eight months, because we were having a crisis, I can't do that anymore. And people can't be expected to do that. Telling people to turn their computers off when they go home at night, I don't have a problem with that. But I also think that a number of things can be done by encouraging investments of various sorts.

Q What's the way to sustain these kinds of savings, to build them into the system? We have historic programs through the Public Utilities Commission where the utilities spend \$300 million a year or so. What have we gotten out of those programs?

BILL MARCUS: What we've gotten out of those programs over time has been a block of savings, but we've also gotten a bunch of politicization by the utilities. I think the utilities have a conflict of interest in running conservation programs. Utilities have an inherent conflict of interest because conservation programs reduce sales, reduce growth, make it more

difficult for their unregulated affiliates to build power plants in the new world, make it more difficult for them to build power plants in the old world, and I don't like the idea of simply giving them dueling incentives.

Q We haven't seen a clear concept of how to go forward from the Public Utilities Commission. We have some voices that want to go back to the old way. We have some pragmatic people. We still have some holdovers from the market forces, who still think it could work. What's your sense? Where should we go in terms of redefining regulation?

BILL MARCUS: I think it's somewhere in between. I think that realistically there will be electricity markets being developed and we have to do something in that direction. I'm not saying that we need to do it quickly.

I think having 15 percent of your load on direct access right now is cost shifting, pure and simple, getting out from under the DWR contracts that made the market safe for direct access, and I think that has to be either rolled back or hit with exit fees.

But that having been said I believe that there is a role for retail markets. If you are going to have retail markets, the last thing I want is a retail market where the utility has strong advantages over other retailers. If you're going to do competition, a necessary but not sufficient condition for it to work for small customers, is to make sure that the utility isn't putting its thumb on the scales and creating an unregulated monopoly for itself out of a regulated monopoly.

I think one way it could go would be core or non-core, although it should have gone there a year ago, where the core customers have a lesser amount of choice but get a fixed price portfolio and the industrials are on their own. The problem is we've got all these DWR contracts and DWR debt overhang that has to be paid, and it will become a massive cost shift if we don't straighten that out.

I'm not sure that isn't a bad direction to go for the long haul, but getting there is complicated by this huge overhang of DWR contracts. They're the elephant under the rug for anything we're trying to do to fix this market in any way.

Q The Legislature's going to be coming back into session, is there anything that you think they should be doing? Anything you think they shouldn't be doing?

BILL MARCUS: At the moment I really think that what we ought to be doing is highly dependent on these DWR contracts. I think the problem is the Governor's office is so entrenched in "We did a good job" that they see that re-negotiation means losing face and that's the problem we're all facing here. Renegotiating contracts and selling bonds are what we ought to be trying to do.

Once we've done that I think the other things on our plate are trying to get a procurement mechanism in

place which, again, at the moment is largely PUC related although the Legislature may have a hand in it in the future. I'm not going to tell them what to do at this point. Three months from now I may have a better idea of what they ought to do.

Q We talked about all the various agencies and you had thoughts about the Energy Commission, thoughts about the CPUC, thoughts about the Power Authority. And yet they're all discreet, they're not working together. How do we bring the state structure into a mesh so that it is actually moving in one direction?

BILL MARCUS: We have been trying to do this for 20 years and it has never worked and I'm not terribly optimistic that we can do any better than we did in 20 years of trying to do this. The redundant agency looking for a mission is the Energy Commission. And they've been that for most of the last 20 years. And I think that short of trying to fold some of their functions into the Power Authority and the rest into the PUC, and maybe having a much smaller siting-oriented body.

I don't think anybody's going to do that because there's no political will to do that these days. I think realistically, the Energy Commission is the one that has the overlap with everybody else, but we're not going to solve that.



ROBERT J. MICHAELS

Professor of Economics at the California State University, Fullerton, and affiliate consultant with Tabors, Caramanis & Associates.

December 6, 2001

Q Let's just start with a broad, general sense of how are you feeling about California these days?

ROBERT MICHAELS: Where are we in California now? We're in for about 20 years of over-priced power. The entire premise of the Blue Book is gone. It's gone with the end of direct access if, in fact, direct access ends. It's gone with the reappearance of state government as an active participant, an active planner and an active forecaster, none of which we've had really good luck with in state governments in California or anywhere else.

If nothing is left of 1890, that would be great except now you have a state that has a much more active role both financially and politically in these markets than it had at the time that 1890 was passed. That causes all sorts of complications on top of which you now have a set of federal/state issues in jurisdictional conflicts.

California is going to tilt one way or the other, and it is not at all clear which way things are going to go. We can't live like this forever. We can't live with a federal presence that we don't understand and we can't really go back. There's nothing to go back to.

Q Right now direct access is held hostage or possibly, put in lifetime solitary confinement, because of the political response. The whole new level of stranded costs that we've encountered with the Department of Water Resources contracts and the fear was that people would escape that liability, without thinking about other alternatives except to terminate direct access.

MICHAELS: How do you bring direct access back? I don't know. I don't have any easy obvious political path. Now, of course, you've got an administration and a PUC which are interested, I think it's safe to say, in shifting most of the burden to large customers for reasons that are nothing but political that I've been able to find. And you should wonder why because it's becoming more and more obvious that small customers have had incredible price response, and if you gave them the right to exercise a little creativity, God knows what they might do.

But there's no obvious way to bring it back other than by intimidation. And the intimidation that will probably work is when more and more states have it and we go back to where we really were before the Blue Book or you have industrials and related users saying we can't compete in the market where we've now got working direct-access systems scattered elsewhere in the country so we can't say that the deregulation was a failure and we have to go back to [CPUC member] Carl Wood's ideal world.

Q You raised the one regulator who probably is most interested in returning to perceived "good old days" of command and control regulation, cost-of-service-based rate making. That whole era of regulation, that evolved over 75 or nearly 100 years, what was good about it? Is there any part of it that's worth preserving to the future?

MICHAELS: Don't you really wonder what the utility business would look like today if a regulatory system had not pretty much from the start rewarded utilities for making large investments? Do you really think

that you would see a system that was unreliable and in any important sense inferior or less efficient if in fact it had not been regulated and you'd had more competitive pricing all the way along?

You would have had much more energy service-type companies than utilities. Utilities had to be dragged into the energy service business through the '70's and '80's. The system that you got is basically a massive system.

Now it wasn't all bad. One of the things that came out of this was tremendous growth in the efficiency of large generation plants, which suited both utilities and regulators. So with the regulated utility system we got some technological advance.

It's a uniquely American institution; that is the other thing about regulation and nobody has really thought about what that means. Public power doesn't appear to be doing much worse than regulated power, didn't appear to be doing that much worse at the time.

And that's for two reasons. The first is that private utilities, given the nature of regulation came to look like government agencies, and the electricity business being what it is, municipal utilities had to start watching their costs and acting more like private corporations than most branches of government. And they all kind of blurred and what competition there was really wasn't that meaningful.

Q Now we have a different kind of public involvement in the power market, which is the state direct intervention through the purchasing activities of the Department of Water Resources, both on the spot market and in the long-

term contracts, and the newer critter, the Power Authority. How do you feel about state intervention in markets, even as emergency response or as a long-term permanent fixture.

MICHAELS: The difficulty with emergency responses is they last well beyond emergencies. In fact, you're sort of seeing that with the Power Authority. [Dave] Freeman's great job right now is going to be to put as much hardware in place as possible, because the more of that stuff you've got in place, the harder it is to dismantle this authority and the bigger the political embarrassment it's going to be if you try.

There is no precedent for the California State Power Authority. If there ever was a rationale when the Power Authority was first proposed, it was critical that the state take over the transmission system and be able to exempt it from federal regulation. Because otherwise anything the Power Authority tries doing, other than encouraging conservation, immediately runs afoul with transmission bottlenecks and federal law. Without that you have somebody who's got a few power plants in place and is going to talk about how wonderful it is that California has still more peakers which are somehow going to protect us against—against what? Against spot market prices? Against contracts that could have been made that were more respectful of market conditions?

What does the Power Authority protect us against? And even if you think you want protection, do you want it in the form of a Power Authority that's in the hands of state government and run by people who rightly or wrongly believe they have a mission in life. I'd rather have it run by faceless bureaucrats any day.

Q It's been suggested that one of the roles that the Power Authority can legitimately, take, because everybody else seems to have dropped the ball, is resource planning. Now we've moved away from a belief that "let the market" decide will answer our problems. But do we need an agency that does this kind of resource planning and implements it?

MICHAELS: I don't think that there's really a difficulty in letting the market decide, generally speaking. You want to plan? Plan for that infrastructure that's going to allow ordinary people to make their own decisions on generation and consumption and facilitate them making trades. I don't want the state going into the generation business, and I don't think that there's any good reason to have it second-guessing people who are making their own decisions. What it could do usefully is in the area of transmission and for a variety of reasons it won't.

Q One place where we have seen people make a decision is in the conservation response. It seems to be the most positive thing that's come out of this.

MICHAELS: And it would have come out a lot sooner if people had been able to feel market prices.

What was really going on? Was this simply people catching a religious fervor, or was it that they were really responding to prices? And I think the evidence that's coming out so far, I know that Jim Bushnell at UC Energy Institute has co-authored a piece looking

at San Diego as a control experiment back in the days when they were at the mercy of PX prices. And what they seem to be finding is that you're seeing price response, it's coming much, much faster than people expect it, although of course that doesn't surprise me.

Q Among the emergency responses we talked about the Power Authority and the DWR but a whole host, 24-26 different executive orders emanating from the Governor's office which expedited power plant siting, loosened some environmental rules in order to expedite power plant siting or increase the availability of units, requiring state agencies to participate in conservation programs, et al. What of that package of stuff should we maintain?

MICHAELS: They should look first to understanding why these orders had to be put in place to begin with. What was the problem that had to be solved by expediting siting? Answer. Delays that ran into years at places like the Energy Commission, which at best most people can tell were not warranted.

As far as expediting things is concerned, I don't really think that it is the emergency it was a few months ago. If you have to have a war, you're going to have these things happening but get rid of them when the war is over. This was thought to be a 20-year war, it turns out to be a one-year war as far as the really acute problems are concerned. So I would say treat it as an interesting history lesson and now that we probably know something about demand and supply, hope that it doesn't happen again and put in place institutions to keep it from happening.

Q The Federal Energy Regulatory Commission seems to have a vision of a West-wide marketplace that mimics the physical constraints of reliability regions. California either is trying to busy building walls around itself or our neighbors are building walls themselves in California.

Let's talk about the region because one of the problems with California is that we tend to view ourselves as an island when we're not. We are part of an interconnected grid, 11 states, two other countries, all trading power. Electrons don't particularly care about borders.

MICHAELS: And it's been a remarkably well-functioning market. It's able to handle hydro transactions in the Northwest, coal-based transactions in the Southwest. You see the power flowing in different directions seasonally and with temperature gradients. It's already a very remarkable market and that seems to be something that at least a lot of the popular press and the like forgot during the entire restructuring and during the recent crisis.

Now, the question is what needs to be done on top of it? Answer. You probably do want some kind of transmission authority, some type of transmission scheduling authority and the rest. Some type of RTO organization is necessary. The big question with it is, how will the transmission be priced? Or will there be something approximating property rights?

FERC does not listen to how people actually transact, because if they did they would be much less interested in trying to force uniform market designs on

everybody. So the transmission pricing has to be solved. My argument would be why don't you start by simply trying to make property rights as ordinary as they can be and leaving it go at that? FERC is trying to regulate competition using the same tools it uses to regulate monopoly, comparing prices against booked costs, and finding discrepancies and saying this is unjust and unreasonable.

Q We talked about the restructuring package as devised in California, whether any of it was worth keeping, you suggest little of it. But the goals of restructuring—lower costs, more choice, innovative technologies. Can we rehabilitate those roles? Can we rehabilitate the market to get to those goals or is it time to redefine goals?

MICHAELS: Why would you want to redefine goals? These are simply goals that we expect of any well-functioning economic system. They're just a hop, skip and a jump from life, liberty and the pursuit of happiness. These are goals that competitive markets are supposedly—and I think provably superior, in getting us to—in both theory and in practice.

Q Okay, so if we're not redefining the goals, we're redefining the path?

MICHAELS: Yes.

Q What path makes the most economic sense heading into the future? It may take two years, so we have this time period which beneficially we could use.

MICHAELS: But every time we've planned we've devised the worst plan. And we've embodied it in laws and in a large number of ways we are worse off than we were the day the Blue Book came out although we do have some customers with direct access and we do have a lot of experience, some of which have been useful.

The real question is going to be: What do you think government can really do about this? What do you really think government can do to bring this about—state government in particular. Economics forces people to think about the costs that they're imposing and the costs that they're bearing. Politics is in so many ways just a way of shifting things in ways that will create long-term problems.

There was one committee meeting during the special session that somebody was addressing the committee and said, "First do no harm," and [Senator] Debra Bowen said, "I think we're already past that stage.



FRANK WOLAK

Professor of Economics, Stanford University and chair of the Market Surveillance Committee for the California Independent System Operator.

December 10, 2001

Q I'd like to just open it up by asking you this; is there anything out of the package of AB 1890 that's worth trying to preserve as we move forward.

FRANK WOLAK: I guess I don't think there's any sort of choice. The market is there. It's going to stay there. It's going to be difficult to get rid of. To me the missing ingredient was no retail infrastructure, meaning that the metering to actually record what people consumed in the hour that they consumed it is a major problem, is still a major problem. There are the meters. Unfortunately the PUC won't enact the tariffs and so that's sort of the problem.

Q It's fairly unlikely that we will resurrect the Power Exchange. How important was that?

FRANK WOLAK: Not at all really. The big thing that the Power Exchange did is it was a mechanism to recover the competition transition charge because it was the "transparent price" that could then be the wholesale price used to determine how much CTC someone got. In a world in which there isn't that CTC recovery mechanism there's no real need for that price. In particular, you could recover the stranded assets from simply a per unit charge on every unit of electricity consumed and therefore you don't even have to know what price is being charged.

Q The Independent System Operator, simple in concept, very difficult and complex to actually work through all the bugs. What needs to be done to make the ISO fully functional, as efficient as you'd like it to be and to prevent the kinds of gamings and manipulations that have been alleged in the market?

WOLAK: Well, first I guess what I'd say is, separate gaming and manipulation from just simple unilateral maximizing profits, and I think there's plenty of evidence that that's what firms did. Whether or not there's any sort of gaming, manipulation, I don't know that those are even well-defined legal concepts or even economic concepts.

A lot of it is just simply avoiding the tendency to be arbitrary and intervene in the market and just simply use the signals that you already have available in the tariff to effectively make this system stay balanced. And it's difficult because I think in many ways engineers don't have faith that markets can provide the appropriate signals and certainly the suppliers of power are very willing to try and play on that and you have this problem. But every single time the ISO becomes a participant in the market, problems happen.

Q It seems that the current thrust with the ISO is to try and—not dictate—but to define what the cost ought to be. We see all these charts all the time about what they think the competitive price should be and what people are bidding in, and going to FERC and saying, "Well this is a no-no and we should do something about it."

WOLAK: My view would be is this is certainly something that you'd want to compute and that you'd want to report to FERC that this is what we'd expect the market to do.

Now the question is how is that going to come about? One way to make that come about is to put in bid caps and price caps and all that sort of thing, which is not something that I think is really in the long-term interest of the market.

The thing about markets, and this gets back to the issue of management risk, is that markets are about assigning risk to those who are best able to bear it, and if these sorts of things don't get priced, things won't happen.

In particular if you don't allow people to see price risk, they won't hedge. If you don't allow people to see price risk they won't invest in demand-response technology. So in some sense, that's the fundamental chicken-and-egg problem in this whole thing. If you continue with these sort of bandages, you'll never get to where you eventually want to go. Nor will you eventually get benefits consumers would achieve from a competitive market, but that's going to require consumers to manage price risks, to manage their consumption.

If that's not something that you want to do, then the smart thing to do would be to go back to the regulated world. But given that you're here, I think that people, just like they manage the price risks associated with all other markets, can manage this price risk and benefit from the existence of the market. But if you don't then what you've got is completely inelastic demand, and then you have the possibilities for all the problems that happen.

Q What was good about the regulatory system that ought to be preserved going into the future, anything from your point of view?

WOLAK: What was good about the regulatory system is that it protects the poor, the indigent, the people who tend to get hurt in market environments. So in that sense, what we want to do is put in a regulator structure that helps people to participate in the market, so that you educate people: "Here's how you may want to think about purchasing your electricity, here's a technology that may make sense for you to be able to do this sort of thing."

Help the people become better participants in the market and to not get burned by the market. But for the big customers, they can take care of themselves.

Q The regulatory response is to do things like impose price caps and to try and wrest back control of the market and to bring the utilities back to a traditional position so that they can be controlled. And that's what's happening in California right now. In the long run, is there a role for a price cap, what people call a "circuit breaker"?

WOLAK: I would prefer not to have a price cap at all, because it's all about managing risk, and if very high prices can both harm as well as hurt producers, and so I see it as less of an issue. I think it also kills off the incentive for people to invest in the demand-responsive technologies.

Q What do you think the role of the Power Authority ought to be?

WOLAK: I really don't see any need for it, to be honest. I think that the one thing that the market can do just fine is build power plants, and I think it can build them at a pretty low cost. So I guess what I'd say is that the current solution is just going to set in motion the possibility of a new disaster.

Now the good news is, if the state continues to hang on to the forward contracts even though they're at very high rates, at least you've got the hedge in terms that the generators have to deliver; they can't withhold to drive up price or whatever and it's not profitable for them to do so if they have these hedges. At least it won't be too bad. But then you have the problem of how do you pay for this "stranded asset" which is the contracts.

Q Right, and that's going to be a problem in the future. If you were to give advice to the Legislature or to the Governor for what we ought to be doing to position ourselves, what would you suggest that we do?

WOLAK: You've got to have a retail side of the market. If you don't you've either got to stay on the side of regulation, in other words, go from essentially production to final sale of the product under regulation, or you've got to go all the way to competition. Hybrid solutions are the analogy to standing the middle of the busy street. You've got to

be on one side of the street, but standing in the middle's just going to get you hit. And we're sort of stuck being with a competitive market unless of course the state decides to purchase all the power plants back from everybody to build a sufficient amount to essentially allow all these plants to be retired.

So my view is that we've got a wholesale market. The wholesale market works quite well if you're in a situation where effectively you've got effective competition and the difficulty with 2000 is we didn't have effective competition. The way you solve that problem is by getting the demand side involved and how that demand side gets involved is you treat demand just like you treat generation.

By that I mean every generator, their default price is the real-time price. If you fail to contract, if you fail to do anything with your electrons before the delivery of the electrons, you receive the ISO's imbalance price. And the same thing should be true of load. If you fail to hedge up till the time of delivery, you will pay the ISO's real time imbalanced price for the power that you consume.

Just that simple change and then worked all the way back to load, will solve the problem. The only way you're going to get that to work is by open access to transmission, open access to distribution and then retailers can effectively buy and sell...buy electricity wholesale, sell it to customers retail. And then the other aspect is the ability to measure it. You have to be able to measure it at the same level of time aggregation that you're actually buying it.

I think it would benefit consumers. People would change how they have to consume electricity in the sense that you would see more flexibility in how

people consume. I think that's only enhancing the welfare of consumers rather than detracting, because you have to build less power plants, you have to build less transmission lines, all those sorts of things.

You've got to get the retail side involved in the market and load involved in the market and that requires the infrastructure in the form of metering to measure it at the hourly basis. That's not that expensive to do.

Then the other is you've just got to let people see the risks and they make the choices based on that.

If you don't want to go that route then I guess go back to the other side of the world and just be a state power authority that does everything. Now that's going to be very costly would be my estimate if recent history is any indication and thus far it's been quite costly.