

**Lights Out:
California's Electricity Debacle
vs.
Real Deregulation for States
by Lance T. Izumi
July 2001
Foreword
by
Doug Houston, Ph.D.
Research Advisory Council
Kansas Public Policy Institute**

[About the Author](#)

Lance T. Izumi is a senior fellow in California studies for the Pacific Research Institute in San Francisco. He is the author of several major PRI publications and is a member of the California Postsecondary Education Commission. His articles have been published in many newspapers and journals, including *Wall Street Journal Europe*, *Sunday Times* (London), *Investor's Business Daily*, *Los Angeles Times*, and the *San Francisco Chronicle*. Mr. Izumi holds a bachelors degree in economics and history from the University of California at Los Angeles, a masters degree in political science from the University of California at Davis, and a juris doctorate from the University of Southern California Law Center.

[Table of Contents](#)

- * Foreword
- * Executive Summary
- * Introduction
- * I. How to Generate a Power Crisis
 - Rising Energy Costs
 - The Law of Supply and Demand
 - Rising Wholesale Prices vs. Retail Price Controls
 - Pricing Policies of the Power Generators
- * II. Leviation Arises: Governor Grave's Response
 - Bond Schemes
 - Long-Term State Contracts
 - State Ownership of the Transmission Grid
 - Energy Conservation, Price Caps, and Expanding Supply
 - Price Increases
- * III. Policy Avoidance vs. Policy Solutions
- IV. Resolving the Crisis
- Notes

Foreword

By Douglas A. Houston, Ph.D.

If most Kansans were to play a simple word-association game, "electricity deregulation" would likely connect with "California energy crisis" for most respondents. California is hardly the only state where some form of deregulation has been attempted. Most states that have employed various deregulation measures appear to be succeeding, and presently about 60% of Americans obtain their power from companies operating in an at least partially deregulated environment.

But California gets almost all the media's attention for its blackouts and for Governor Gray Davis demonizing of greedy energy suppliers as the root cause of the state's energy woes. It's ironic that deregulation-- using market forces to more efficiently produce and market electricity -- is getting a bad name because California's electricity crisis is caused by California doing precisely the opposite of deregulating. The state spirals into deeper and deeper political intervention, in effect building a state-owned electricity industry. This political muddling is expected to be extremely costly. A recent economic forecast warns that the state's expanding heavy-handed role in the electricity industry could reduce state output by \$90 billion (about 6.5 % of the states current output) by 2005 and raise unemployment. Perhaps this abysmal longer-term failure should be termed a political crisis.

A serious examination of what California billed as deregulation in 1996 reveals that it was never a deregulation effort from the start. As the following piece by Lance Izumi points out quite well, the enabling legislation was flawed and prevented essential market responses to realities. In particular, two California requirements crippled the utilities, causing much of the subsequent electricity woes. These were: (1) capping retail electricity prices, and (2) disallowing power-acquiring utilities to sign long-term power supply contracts and instead forcing them to buy in daily "spot" power markets. Simply removing the retail price caps and permitting the utilities to buy power in any contractual form that they choose would have avoided this crisis. California would still have had issues, but they would have been manageable issues.

California's legislative failures (avoided by most other deregulating states) have been magnified by a continuing series of miscues by the state. Izumi insightfully examines this political track record. The current "remedies" proposed by the state call for building a state-owned power authority, using eminent domain law to seize utility properties, and requesting the elimination of consumers' right to choose suppliers. The latter is needed to prevent consumers from fleeing the state power provider for a lower cost private provider. Moreover, this emerging state power provider cannot be challenged by consumers for charges that might be considered excessive or imprudently incurred, an immunity that state utilities have never had. In effect, the state defines itself as always right because it purports to always represent the consumer-citizen. Thus, California under Governor Davis proposes to replace markets and consumer choice by mandating all aspects of production, distribution, and use of electricity. This perhaps is the critical message from California: It is not electricity markets and deregulation that are the danger. Rather it is the potential for overreaction by politicians to short-term problems caused by flawed legislation.

The critical message from California: It is not electricity markets and deregulation that are the danger. Rather it is the potential for overreaction by politicians to short-term problems caused by flawed legislation.

Izumi insightfully takes stock of the unfortunate confluence of events and circumstances contributing to the California energy debacle, and sheds light upon the distinct role the state's politicians and regulators have played in the unfolding drama. The author further discusses the various factors that caused wholesale prices to rise as far and as fast as they did. Events in the world that change supply or demand cannot be evaded. Markets, however, can make the adjustment process more efficient and less costly by placing incentives in front of buyers and sellers to respond to altered circumstances--the basic argument for deregulation. For example, rising demand for electricity and increasing natural gas prices occurred in the last few years across the United States, not just in California. Elsewhere, these changes translated into somewhat higher short term energy bills, but also expanding investments in new supplies of electricity that rely less on natural gas as the fuel source. These actions rapidly moderate price increases. Only in California, where webs of restrictions have strangled market forces, did such adjustment fail to materialize and crisis therefore set in. Thus, California's great reliance on natural gas to produce electricity and the state's inability to build any new power plants have been the direct consequence of state regulations that disadvantage other fuel sources and that make any new plant construction excessively risky and costly for an investor.

Many of the factors

To varying degrees, many of the factors affecting California are already at play in Kansas, as well as other Kansas-specific factors that further contribute to our need for a long-term energy strategy. The answer to this riddle is not further Soviet-style regulatory manipulation, but rather the invisible hand of free market forces that most efficiently allocate capital and resources to best match consumer demand with utility supply.

affecting California are already at play in Kansas...The answer to this riddle is not further Soviet-style regulatory manipulation, but rather the invisible hand of free market forces that most efficiently allocate capital and resources to best match consumer demand with utility supply.

Kansas will continue to see burgeoning demand for energy, prompted by the innumerable technology-driven tools making their way into everyday usage. Married to that increase in demand must be an increase in supply. Without it, Kansas will see rapidly rising retail energy prices and, ultimately, face rolling blackouts like our sister state out West. But how is this supply to be found?

Historically, insufficient investment capital has been available to such a heavily regulated industry that can only yield relatively modest returns on investment. Combine that low investment return with significant perceived investment risk due to the possibility that regulators might somehow “botch” the utility sector (as has happened in California), and we have a problem. To mitigate this risk, Kansas’ utilities are trying to plan now to meet increased energy demands by building more power generators. The reality with which they are faced, however, is that they are competing for the same, limited pool of investment dollars as are *non-regulated* generators that can promise higher returns on investment. If Kansas’ utilities are not able to compete for investment dollars with these non-regulated generators, they will simply have to buy power from those generators on the wholesale market in the future. This is our shared destiny under the existing regulatory regime.

Presently winding their respective ways through the Kansas regulatory agency are utilities’ requests to substantially change the way they do business. In a nutshell, Kansas utilities have realized that, in order to raise the capital necessary to build the billions of dollars worth of power plants necessary to meet projected energy demand, they must restructure themselves at the corporate level to create non-regulated subsidiaries dedicated to power generation projects. This is a first important step, called “unbundling”, that Kansas can take in transitioning to a deregulated, free-market electricity environment. It is a reasonable low risk one that has been taken in many other states that have begun deregulating.

Another important step that Kansas can take is to encourage increased retail price flexibility by its utilities. Most obviously, the state should never cap prices to retail consumers when underlying cost of electricity rises. Prices that reflect underlying costs provide the fundamental incentive for consumers to reduce or shift energy use and thus effectively conserve. Additionally, the state should encourage utilities to expand time-sensitive pricing (reflecting time variations in the cost of power) so that consumers can voluntarily interrupt or time-shift some electricity uses as prices change. Consumers cannot be passive players because only they, individually, can gauge the costs of reducing power consumption or shifting usage patterns against the gain in reduced energy costs. Retail electricity prices that are sensitive to underlying costs and consumers who have sufficient means to respond to such prices will moderate power investment requirements by “sawing off” expensive-to-meet spikes in electricity usage. This is financially and environmentally sound.

Along the vein of considering market-friendly approaches to issues, the Kansas Public Policy Institute is pleased to present Lance Izumi’s work, which is calculated to be an introduction for many Kansans to the pressing need for a coherent and timely deregulation plan in Kansas. Subsequent works to be published in coming months by the KPPI will tackle specific sub-issues in deregulation. These works will more fully explore the immediate need for “unbundling” as well as other diverse deregulation-related issues such as conservation, time-of-day pricing, and the environmental benefits associated with deregulation.

Doug Houston, Ph.D.
University of Kansas

Executive Summary

With rolling blackouts guaranteed as summer heat increases electricity demand over available supply, Californians are right to wonder how the state got into this mess and what will be the fallout of this government-created debacle. This briefing examines the causes of the disaster, Governor Gray Davis's policy responses, practical solutions that could be implemented immediately, and why genuine deregulation is the best path for states to follow.

The Causes

- A four-fold spike in natural gas prices in 2000. California gets 34 percent of its electricity, nearly double the national average, from gas-fired plants.
- Drought in the Pacific Northwest and, consequently, a decrease in hydroelectric production.
- Booming consumer demand and the failure to build any new major power plants over the last 10 years.
- Reliance on older plants that must go off line for maintenance more often, reducing supply.
- The state's refusal to allow the utilities to enter into stable, lower-price, long-term purchase contracts.

or Davis's Responses

State government is making direct purchases of electricity and feeding it to the utilities to distribute. Davis originally proposed selling \$10 billion in state bonds to pay for both past and future purchases of electricity. Now he wants to increase this amount to \$12.5 billion.

State officials, though, believe that at the rate the state is spending money to purchase electricity, the bond funds would be used up by September.

The state has signed long-term purchase contracts. Most, though, won't go into effect until after the crucial high-demand summer months.

Davis wants the state to purchase the utilities' transmission lines. State ownership of the lines, however, neither adds more power supply nor reduces demand.

Davis wants Californians to reduce energy consumption by 10 percent, but he has not articulated a realistic plan explaining how this can be accomplished.

Davis advocates wholesale price caps, but experts say that such caps would either drive power generators out of the market, discourage new generators from entering, or both.

Policy Avoidance versus Policy Solutions

Eliminate government controls on the retail price of electricity, either immediately or gradually over a relatively short time frame.

Enact a surcharge on consumers to recoup some part of the utilities' losses under government price controls. This would tie the cost of consumption directly to those who consume the power, rather than spreading the expense among all taxpayers regardless of usage.

Real-time pricing should be emphasized so that rates increase during peak demand periods. This encourages users of electricity to consume power during off-peak hours where possible, thus reducing the likelihood of black-outs during peak periods of the day.

Some transitional/temporary aid should be allotted for the poor to assist them during the changeover to market-determined prices. Because subsidizing power consumption has the undesirable consequence of

artificially stimulating demand, however, such aid should be doled-out sparingly and wisely. Utilities should have full flexibility to enter into short, medium, and long-term contracts for electricity. The governor should use his emergency powers to suspend government rules and regulations that delay power plant construction.

Introduction

Governor Gray Davis's repeated comments to the press that he's secured enough electricity to see California through the current crisis remind one of the Soviet agriculture commissar who decided to leave his plush offices in Moscow and visit one of the collective farms in the countryside.

"So comrade, how was this year's potato crop?" the commissar asked the farm manager. "Commissar," the manager replied, "we harvested so many potatoes that if you put them into one pile, they would reach the feet of God."

The commissar wrinkled his brow and admonished the manager saying, "Comrade, remember, we are communists and we don't believe in God."

To which the manager smiled and said, "Yes, commissar, and there aren't any potatoes either."

Given Governor Davis's Soviet-style actions in this crisis, we may soon have as much electricity as potatoes on that collective farm.

This study examines the state's electricity problems in three parts: the causes of the crisis, Governor Davis's response, and the political fallout of the crisis. It concludes by providing practical solutions that California legislators could implement immediately to ease the crisis and provide stable, reasonably priced electricity.

How to Generate a Power Crisis

The obvious starting point of the power crisis is, of course, the 1996 law passed by the California legislature and signed by Governor Pete Wilson (a law that Wilson now admits was inherently flawed and not a perfect free-market mechanism). It purported to deregulate the electricity market; prior to the passage of this law, California had a regulated electricity market. The regulated private utility companies generated, transmitted, and distributed their own electricity.

Because of the prohibitively high cost of building the infrastructure to wire homes, neighborhoods, and cities, new entrants into the electricity market were effectively barred. Without competition, consumers were to be protected from price gouging by state-regulated electricity rates. These rates were based on the utilities' cost of producing and distributing the electricity plus a fixed rate of return or profit. Wilson and the legislature, though, believed that the price of nine cents a kilowatt hour that consumers were paying under the regulated monopoly system was too high, and they set about to restructure the system, with the approval of the utilities and other stakeholders.

Under the 1996 law, utilities were offered incentives to sell their generating plants to independent companies. Today, only 15 percent of California's electricity is produced by utility-owned plants versus 55 percent before deregulation. The independent power companies that bought the utilities' plants now account for 40 percent of electricity generation.

The utilities were allowed to keep ownership of the transmission infrastructure, the so-called "grid" that has been the subject of so much recent negotiation, although the actual administration of the grid was turned over to a newly-created California Independent System Operator or Cal-ISO. The utilities' transmission lines were opened up to allow power generated by independent non-utility companies to be transmitted over those lines. Only the distribution system of providing power to consumers remained completely under the utilities' control.

The wholesale price for electricity -- the price the utilities pay to purchase electricity -- was to be deregulated and set by market forces in the state-chartered Power Exchange, which was to auction off wholesale power offered by power generators. Because the state, through the California Public Utilities Commission (PUC), effectively prevented the utilities from entering into long-term contracts to buy power at agreed upon prices, power purchases by the utilities had to be conducted largely through the Power Exchange on the daily spot market.

The Achilles' heel of the 1996 law was the fact that the retail price that the utilities could charge consumers was capped by the state.

The Achilles heel of the 1996 law was the fact that the retail price that utilities could charge consumers was capped by the state. In combination with a so-called "competitive transition surcharge" included in consumers' bills, these retail price controls were to stay in place until the utilities recouped their so called "stranded costs," the uneconomic investments made during the time of regulation. This retail-price arrangement would only pay off for the utilities if their expenses, especially the wholesale cost of the electricity that they purchased, stayed below the government-controlled retail price. As is now widely known, this did not continue to be the case.

Rising Energy Costs

For a variety of reasons, the wholesale price of electricity started to increase dramatically last year. The chief cause was the fourfold spike in natural gas prices that occurred in 2000. California is especially vulnerable to natural gas price swings because it is so reliant on natural-gas-fueled power plants. While the rest of the nation gets 18 percent of its electricity from plants fired by natural gas, California gets 34 percent of its electricity from such plants-nearly double the amount.

Gas prices rose due to several factors. Exploration and production activity had slumped due to falling gas prices in 1998 and 1999, a trend that was incorrectly forecast to continue, as PRI's Steven Hayward notes in his *Index of Leading Environmental Indicators 2001*. Further, California produces little natural gas and must depend on imported gas carried through an aging pipeline that does not have enough capacity to meet growing demand. And indeed, that demand has also spiked upward. In a normal winter, California burns 1,200 million cubic feet of gas per day. This past winter, the state burned more than double that amount.¹ Because of record low temperatures in the lower 48 states in November and December 2000, national demand for natural gas increased significantly. A pipeline explosion in August of last year also significantly reduced gas supply. Although there are several proposed pipeline expansion projects, only one will be completed in time for California's summer energy crunch. Finally, the western states have stored less natural gas than their usual average. Low gas storage combined with cold winter weather and increased demand helped increase prices.

Higher natural gas prices increased the cost of making electricity in a gas-fired plant from about three cents per kilowatt hour to 43 cents per kilowatt hour...these higher gas prices would have affected California electricity costs regardless of whether the 1996 deregulation law was passed or not.

Jerry Taylor and Peter VanDoren of the Cato Institute have pointed out that higher natural-gas prices increased the cost of making electricity in a gas-fired plant from about three cents per kilowatt hour in the spring of 2000 to 43 cents per kilowatt hour in February 2001. Taylor and VanDoren rightly note that these higher gas prices would have affected California electricity costs regardless of whether the

1996 deregulation law was passed or not.²

Drought conditions in the Pacific Northwest that lowered hydroelectric production, some of which would be normally exported to California, also contributed to the high wholesale electricity prices. And last summer, when the utilities asked the Public Utilities Commission (PUC) to be allowed to enter into long-term contracts for electricity at stable prices, the PUC initially denied these requests. And even after the commission approved the concept of long-term contracts, in August 2000, it took months for the commission staff to promulgate the necessary guidelines that would have allowed the utilities to enter into such contracts.

Federal officials spent a "lot of time" trying to persuade California officials to encourage longer-term contracting.

The PUC is controlled by Davis appointees and its staff reports directly to commission chair Loretta Lynch, also a Davis appointee. According to Susan Abbot, a managing director at Moody's Investor Service in New York, the utilities "went to the commission and tried to solve the problem and couldn't do it." Ms. Abbot says, the utilities "tried to work within the channels and they didn't get anywhere."³ An investigative report by the *San Francisco Chronicle* found that based on documents and interviews with industry insiders, regulators, and lawmakers, Governor Davis contributed to the meltdown of PG&E and Southern California Edison by neglecting the need for the utilities to enter into long-term contracts.⁴

James Hoecker, the former Clinton-appointed chair of the Federal Energy Regulatory Commission (FERC), said that federal officials spent a "lot of time" trying to persuade California officials to encourage longer-term contracting. According to Hoecker, "With considerable supply and demand imbalance, having everyone on the spot market was just a recipe for astronomically high prices."⁵

The Law of Supply and Demand

A longer-term pressure on wholesale prices has been the combination of growing consumer demand for electricity in California and no increase in in-state production of electricity. Over the last five years, a booming economy has increased electricity consumption by 24 percent.⁶ Yet, over the last 10 years, no new major power plants have been built. Thus, demand has skyrocketed, but supply in the form of in-state generation has remained static.

This is not to say that companies haven't wanted to build new plants. In recent years, 25 new power plants have been proposed. Those plants would have produced 15,500 megawatts of electricity, increasing California's in-state power generation by more than one-third. More significant, that added generation represents more electricity than California currently imports.⁷ Yet, few of these plants have been approved, and none has come on line.

Michael Zenker and Daniel Yergin of Cambridge Energy Research Associates have pointed out that new power plant proposals have to overcome many difficult obstacles, starting, they say, with California's open-ended environmental review process. Other states have a checklist process where once you go through the list you can build the plant. In California, the process can go on almost forever.⁸ Also, major urban areas such as Los Angeles and San Francisco have air quality standards that limit the amount of electricity that can be produced in those regions.⁹ Local community opposition in the form of NIMBYism, or "not in my backyard," has also thwarted plant construction.¹⁰ Recently, voters in South Gate near Los Angeles turned down a proposal to build a clean-burning natural gas plant in that city after local officials, including the mayor, charged that siting a power plant in the mostly Hispanic town was environmental racism. San Jose has also been notorious in its opposition to

siting needed power plants.

Another obstacle that is virtually never discussed is the self-interested behavior of labor unions. As the *Wall Street Journal* has reported, unions have intimidated power-plant builders to ban the use of non-union construction workers.¹¹ According to the *Journal*, about a decade ago the unions decided to use a novel strategy of threatening environmental lawsuits to delay power plant construction until builders signed so-called project labor agreements, or PLAs. Under these PLAs, union workers are given hiring preference, non-union employees are forced to pay union dues, and union-appointed arbitrators are used to resolve disputes.¹²

*"With considerable supply and demand imbalance, having everyone on the spot market was just a recipe for astronomically high prices."
-James Hoecker
Former Chair, FERC*

The unions used their litigation strategy to block a \$200-million plant in Kern County last year, but they backed off from their objections earlier this year when the plant builders agreed to sign a PLA.¹³

An analysis by the *Engineering News Record* found that this union strategy has resulted in significant delays in starting power plants, a 20-percent increase in costs because of the exclusion of lower cost non-union contractors, and fewer power plants being built.¹⁴

These various forms of obstructionism mean that in California it can take five years or more for a natural-gas-fired plant to be approved, built, and put on line. In comparison, it would take just one third that time to do the same in a state such as Utah.

Since California has built no new power plants in the last decade, it has had to rely on its existing inventory of plants. Unfortunately, that inventory is aging, with 55 percent of the state's plants 30 or more years old. Older plants need more maintenance and must be taken off line for repair more often than new plants. This is particularly true in the Bay Area. According to a state report, "Over the next few years, many Bay Area power plants will be out of service for months to address maintenance problems that arise because of plant age."¹⁵ The report went on to warn that outages because of the need to service old equipment could last a week to four months depending on the extent of the overhaul.¹⁶ Indeed, the need to repair aging plants was the cause of the blackouts that hit 100,000 customers in San Francisco last June.

Rising Wholesale Prices vs. Retail Price Controls

The combination of higher input costs such as increased natural gas prices, plus burgeoning demand, and no increase in the supply of in-state power generation, and the breakdown and interruption of existing supply, led to steeply rising wholesale prices for electricity.

High wholesale prices are a huge problem but other states have been able to cope allowing these costs to be reflected in the retail prices paid by consumers. In California, however, the problem of high wholesale costs has been turned into a catastrophe because of the 1996 law's imposition of government retail-price controls. The utilities had to purchase electricity at high wholesale prices, but had to sell that electricity to consumers at a government-dictated price well below the wholesale cost. As Taylor and VanDoren of Cato note, the bankrupt or near bankrupt condition of California's utilities "is due to state rules that force those companies to buy power at 15-100 cents a kilowatt hour and prohibit them from selling at more than 6.7 cents per kilowatt hour."¹⁷

Deregulating the wholesale price of electricity while continuing government price controls over the retail price charged to consumers was, "beyond stupid".

Predictably, the utilities ended up losing huge amounts of money to the point today where they are \$14 billion in debt. This debt and the consequent inability of the utilities to pay power suppliers increase risks for suppliers. Suppliers are naturally reluctant to supply electricity when there is a good chance they will not get paid. This adds to higher wholesale prices and increases the chance of blackouts. According to a statement by prominent academics: "The destruction of the utilities' credit and the resulting responses by suppliers has shattered all vestiges of a normal market. As a consequence, California now has both a financial crisis and an electricity supply crisis."¹⁸ In other words, a disaster.

Leading economists and energy experts agree that deregulating the wholesale price of electricity while continuing government price controls over the retail price charged to consumers was, in the words of a *Wall Street Journal* editorial, "beyond stupid."¹⁹ Professor Daniel McFadden, the Nobel-Prize-winning economist at UC Berkeley, has said that, "The source of the [electricity] crisis was rigid regulation of retail prices in the face of rapid increases in wholesale prices driven by increased fuel prices and increased demand in the national electricity market."²⁰

In a study of the electricity crisis for the Ludwig von Mises Institute, George Reisman, professor of economics at Pepperdine University, points out that: "It cannot be stressed too strongly that a shortage is an excess of quantity demanded over supply available. And that is caused by a government price control, which prevents price from rising high enough to reduce quantity demanded to the supply available, which would eliminate the shortage. When the government refuses to allow a price that is high enough to keep the quantity of power demanded within the limit of the supply of power available, brownouts and blackouts are the result."²¹

Brownouts and blackouts are allocation devices just like higher retail prices, only they are unpredictable and consumers can do little to respond to them.

UC Berkeley's Institute for Management, Innovation, and Organization has issued a manifesto signed by some of the state's most prominent economists, management experts, and former energy officials which says that government controlled retail prices are one of the two major causes of the crisis, the other being the government prevention of utilities from signing long-term contracts.²²

U.S. Treasury Secretary Paul O'Neill says that it was "lunacy" for the California state government to keep retail prices capped while wholesale prices are market-determined. O'Neill chastised California officials for trying to "defeat economics."²³

"The only effective solution to the [electricity] crisis is to make retail price regulation more flexible, so that consumers see the real economic cost of electricity and respond to high prices through conservation efforts that reduce demand and push prices down."

Lifting the retail price cap has always offered numerous benefits, in addition to helping the utilities stave off bankruptcy. For example, Governor Gray Davis and many others have emphasized the importance of conservation as a way to reduce consumer demand. However, as the UC Berkeley manifesto points out, government-fixed retail prices blocked conservation efforts by insulating consumers from market realities and drove prices higher because demand did not fall in response to increasing wholesale prices.²⁴ Daniel McFadden says that, "The only effective solution to the [electricity] crisis is to make retail price regulation more flexible, so that consumers see the real economic cost of electricity and respond to high prices through conservation efforts that reduce demand and push prices down."²⁵

A study by the University of California's Energy Institute confirms these observations. Last summer, the retail price of electricity was de-controlled in San Diego because San Diego Gas and Electric, the local utility, had paid off its stranded costs and was, therefore, allowed to raise its price to consumers to match its wholesale costs. By August of 2000, retail prices in San Diego had doubled. In response, consumption fell by about two percent and consumption at peak times fell by about six percent.²⁶ As the study noted, "Just as a small increase in demand can sharply drive up prices during peak periods, a small decrease in demand can conversely reduce prices very significantly."²⁷ The study concluded that a program of real-time pricing, where people pay the real cost of electricity at the time of use, "could produce power savings that allow California to avoid rolling blackouts."²⁸

There are other benefits from lifting the retail caps. For example, it would increase competition. One of the reasons the 1996 law was passed was to increase competition in the electricity market. Up until that time, regulated utilities like PG&E and Edison were protected from competing for customers. Forcing the utilities to sell off their generators and to allow their transmission lines to become common carriers of electricity was meant to allow other companies to compete against the utilities. However, as Adrian Moore and Lynne Kiesling of the Reason Public Policy Institute point out in their study of California's electricity situation, retail price controls "discouraged new firms from entering the California market."²⁹

Thus, few new companies entered California's electricity market. As Moore and Kiesling observe, "Customers, expecting 'deregulation' to bring a flood of marketing mailers and dinner-time solicitation calls to switch electricity providers, are rarely offered any choices, and today still get their electricity from the same company with the same service options as they always have."³⁰

Moore and Kiesling also found that government retail price controls, "reduced incentives to invest in new electricity generation plants in the state or new transmission lines to import electricity, either of which might have alleviated our current electricity shortage."³¹ If retail price controls were lifted, say Moore and Kiesling, rising prices would tell producers that it was time to add capacity, and give companies who best estimate future demand better returns on their investment.³² With price controls, those companies have an incentive to take their investment money and build power plants out of state where there are no price caps to minimize their return on investment.³³

Pricing Policies of the Power Generators

Another critical aspect of the crisis is the supposed issue of "market manipulation" by power generators. Many politicians, including Governor Davis, subscribe to this theory to explain the high wholesale costs charged by power generation companies like Enron, Duke, and Reliant. According to this view, under extremely scarce supply conditions, these companies are able to use their market power to

raise prices over the normal supply and demand competitive price.

Economists such as Dr. Benjamin Zycher of Rand oppose this claim. Zycher notes that market-manipulation theories rely on conscious withholding of supply by producers. Yet, as Zycher points out, each producer prefers that his competitors withhold production so that he can receive the benefits of higher prices.³⁴ Zycher further explains that costs, over cost of production, include risk factors that power generators must face. These include risk of nonpayment, interest costs on late payments, risks of unplanned outages of generating equipment, political risks of rule changes, the risks posed by the lawsuit industry, the risks of transmission breakdowns, the risks of rising prices of natural gas and so on. "That a number of important costs faced by power producers," says Zycher, "do not show up on the books does not mean that they are not real."³⁵

Zycher also says that high prices do not prove that a market is noncompetitive. Prices are determined by the relationship between cost and demand conditions. If bad weather destroys a farm crop, the price of that crop will rise, despite the fact that accounting costs, such as the price of inputs like fuel and fertilizer, will not have increased at all.³⁶ In other words, the high price for the crop is not a manipulation, but a legitimate market means of allocating a scarce good.

High prices do not prove that a market is noncompetitive. Prices are determined by the relationship between cost and demand conditions.

However, let us suppose that Governor Davis and his think-a-likes are correct and that power producers have manipulated the market so that they can extract so called "excess" profits. Even those like Severin Borenstein, director of the University of California Energy Institute, who believe that market power has been exerted by power producers to extract such profits, say that this has only been possible because of the government's retail price controls. According to Borenstein, "The absence of restructuring on the demand side of the market, where virtually all consumption is still billed at a constant price regardless of the wholesale cost of power at the time it is supplied, has exacerbated the supply/demand mismatch and has increased the ability of sellers to exercise market power."³⁷

Jerry Taylor and Peter VanDoren of the Cato Institute make the same point, saying that: "In California, generators can charge whatever they want during a crisis without fear that the prices they name will reduce demand because the state insists upon maintaining retail-price controls. Without them, generators would fear that excessively high prices would reduce sales. The upshot is that retail-price controls are themselves primarily responsible for whatever mischief exists."³⁸

The high price is not a manipulation, but a legitimate market means of allocating a scarce good.

The *San Francisco Chronicle*, which has provided some good coverage of the power shortage, recently summed up the key causes of the crisis. In an article on PG&E's recent bankruptcy filing, the *Chronicle* said that "PG&E's financial woes stem from a rate freeze that prevented the utilities from passing along to customers runaway wholesale power costs."³⁹ Also, "California's energy shortage is primarily the result of the state not having built any major power plants for the past 12 years."⁴⁰ And finally, "PG&E's foray into bankruptcy court does not alter the fact that electricity demand is outpacing available supply."⁴¹

That, in a nutshell, is largely why we are where we are today, and why similar critiques have emanated from diverse quarters. For example, Severin Borenstein, UC Berkeley economist Daniel McFadden, and the free-market Cato Institute and Reason Public Policy Institute all recommend real-time pricing of electricity, where consumers pay the real cost of electricity at the time they use it. This would

promote both financial stability for the companies involved in the electricity market and also conservation among consumers.

Many others have argued for more electricity generation plants. In other words, despite the complexity of the issues involved in the crisis, the solutions are based on straightforward, common-sense economics. Common sense, however, has been in short supply in Sacramento.

Leviathan Arises: Governor Davis's Response

Governor Davis does recognize the fundamental economic flaws in California's electricity structure, commenting in February, "Believe me, if I wanted to raise rates I could have solved this problem in 20 minutes."⁴²

His recognition of economic reality, however, has been overridden by his political goal of not raising rates for consumers, who are also voters. Until recently, the governor has steadfastly maintained that solutions could somehow be worked out without raising retail prices. Over the past months, how has he purported to accomplish this seemingly impossible goal?

A cursory overview of Davis's proposals shows that rather than allowing the market to work, the governor decided to do the opposite and dramatically increase government intervention into the marketplace. Jerry Taylor of Cato characterizes Davis's agenda as "a full-bore Cuban-style recovery plan."⁴³

For example, in his January State of the State address, Davis proposed a government power authority that could buy or build new power plants. Legislation to create this new government agency is now working its way through the legislature. Davis also threatened to use government's power of eminent domain to take over power facilities from private power generators. An *Oakland Tribune* editorial warns that "Power plant seizures would be unwise, though, as California desperately needs more energy-generating facilities," and "Builders of generators would be loathe to construct new plants in a state where they stand to lose them to eminent domain."⁴⁴ Also, the UC Berkeley-sponsored manifesto condemns the policy of nationalizing California's electricity system saying that: "New government ownership of generation and distribution facilities won't solve the crisis or deliver below-market power prices. The State must pay full market for any plants it acquires, even though record electricity prices also mean record purchase prices for energy facilities. For consumers to obtain bargain electricity rates would then require permanent taxpayer subsidies-saddling the State budget in perpetuity."⁴⁵

Also in his 2001 State of the State, Davis said that he would hire 50 new government energy gendarmes to monitor and stand guard at any power facility suspected of withholding power. In all, Davis's performance was vintage Huey Long without the mesmerizing delivery.

New government ownership of generation and distribution facilities won't solve the crisis or deliver below-market power prices.

For consumers to obtain bargain electricity rates would then require permanent taxpayer

Since then, Davis has propelled state government, through his Department of Water Resources, into the electricity purchasing business. Because the utilities are unable to purchase electricity given their huge debts, the state is now buying electricity and feeding it to the utilities to distribute. These purchases, of course, must be paid for somehow. Currently, the state is paying for them out of the state budget general revenue fund. The state has been buying power at roughly \$50 million a day with a total of about \$4 billion in taxpayer money spent this year, as of April 2001.

*State budget in
perpetuity.*

Bond Schemes

Ultimately, Davis wants these and future electricity purchases to be paid for by \$10 billion in state bonds. The state would sell the bonds, which represent about \$300 of debt for each person in California, use the proceeds to pay back the general fund and to pay for future purchases, and have the bonds repaid by utility customers through charges on their monthly bills. But there are substantial problems with Davis's plan.

First, as the *Los Angeles Times* recently pointed out, the plan "was based on the premise that the state would be able to stabilize, and eventually lower, the price of electricity by entering into long-term contracts with power suppliers."⁴⁶ However, the *Times* notes that "Those lower prices have yet to materialize, raising increasing questions about whether \$10 billion will be enough."⁴⁷

In fact, it looks like \$10 billion will not be nearly enough, and Davis recently suggested increasing it to \$12.5 billion. Although the bonds were initially intended to finance electricity purchases for a decade, State Treasurer Phil Angelides has said that the \$10 billion could all be spent by September 2001.⁴⁸ The state would then have to borrow even more money. Angelides says that "I think there is no doubt that if we continue to chunk out general fund money without end, what's going to happen is that we're going to deplete our treasury, we're going to harm the very programs that we care most about, and our credit rating will come down."⁴⁹

*"I think there is no
doubt that if we
continue to chunk out
general fund money
without end...we're
going to deplete our
treasury, we're going
to harm the very
programs that we care
most about, and our
credit rating will come
down."
-Phil Angelides
California State
Treasurer*

Angelides also says there's another problem with Davis's bond scheme. As state treasurer, he can't sell the bonds unless Davis publicly discloses detailed information about state power purchases, including the prices contained in long-term contracts for power that Davis has entered into with power generators. Davis, so far, refuses to disclose these details.⁵⁰

One of the few potentially positive sides of Davis's bond scheme is a largely unnoticed component that allows the Public Utilities Commission (PUC) to give the Department of Water and Power the authority to institute rate hikes sufficient to enable the Department to recover its costs on a timely basis without review by the PUC. In other words, the Department would not be subject to retail rate controls. This measure is designed to bolster confidence among lenders who would purchase the \$10 billion in state bonds that they would be repaid. The question, of course, is how the Department of Water and Power will use its authority.

It is interesting to note that for most of the time since the Department has acquired this authority, Davis continued to insist that no rate hikes were needed. And, of course, even though the Department of Water and Power has the authority to raise rates, one must remember that its top management are political appointees who will be more likely to succumb to political pressures from the governor's office

than to the pressures of the market. That is probably why Davis gave a government department, rather than the private utilities, the ability to raise rates.

Long-term State Contracts

Besides buying electricity on the short-term spot market, Davis has also signed long-term contracts with power generators for delivery of electricity. Davis claims that these contracts will ensure energy delivery at stable lower prices. Unfortunately, it is difficult to evaluate this claim because Davis has refused to disclose the price he has paid in many of these contracts. Newspapers and Republican legislators have filed lawsuits to force the release of the information contained in the contracts.

Although the exact figures for individual contracts are not precisely known, the average price for the governor's 10-year contracts is about seven cents per kilowatt hour, and about eight cents per kilowatt hour for five-year contracts. While these prices are below the daily price, which has been averaging 25 cents per kilowatt hour and up, the spot price is not necessarily the standard by which to judge the attractiveness of Davis's long-term contracts.

Over the next few years, experts estimate that new power plants will come on line and the price of natural gas will fall. In three years, abundant electricity should be available at a cost of about five cents per kilowatt hour.⁵¹ No wonder then that the UC Berkeley-sponsored manifesto says that: "Now is precisely the wrong time for the State to commit to long-term contracts for a large portion of California's electricity needs, since below-market prices now can only come at the expense of above-market consumer prices in years to come." The manifesto recommends that such contracts last no more than two years. Yet, Davis has signed at least one contract that will last 20 years.

Some may argue that even if California consumers end up paying more later, if the long-term contracts can provide us with enough electricity during this year's summer energy crunch, then they may be worth the price. Unfortunately, they won't. Dan Walters, dean of State Capitol columnists, observes that "Although the governor has announced a series of long-term power contracts, many don't go into effect until late this year, which means the state will be buying power at high spot prices through the summer-if, in fact, it can find enough to buy."⁵² Walters observation is supported by Severin Borenstein, director of the UC Energy Institute, who says that California still faces an "extreme challenge" this summer and that "Signing [long-term] contracts doesn't create more electricity."⁵³

State Ownership of the Transmission Grid

Another key component of Davis's government-interventionist strategy is for the state to buy and take over the utilities' transmission lines. The estimated cost of such a purchase is about \$7 billion. Davis says that a state takeover would infuse needed cash into the utilities-many call it a bailout-and would allow the state to use transmission charges to upgrade the grid so as to unclog bottlenecks that contribute to blackouts.

As with Davis's other actions, however, there are several critical problems with this scheme. First, state ownership of the transmission lines doesn't add any new supply.

It is difficult to evaluate Governor Davis' claims about the advantages of long-term energy contracts he has signed because Davis has refused to disclose the price he has agreed to in many of them.

State ownership of the transmission lines doesn't add any new supply. Nor does it reduce demand.

Nor does it reduce demand. Also, state purchase of the transmission lines would require federal approval because they are part of an interstate network. That approval process could take up to two years. The state would not be able to sell any bonds to finance the purchase until the deal received federal approval.⁵⁴

Davis has struck a deal with Southern California Edison to purchase its transmission lines, but Pacific Gas and Electric's (PG&E) April bankruptcy filing most likely takes that company's lines off the bargaining table. On February 23, Davis acknowledged that it makes little sense for the state to buy only Edison's share of the transmission lines.⁵⁵ Without PG&E's share of the grid, the state would not be able to make key upgrades to the transmission lines.

For example, the worst energy bottleneck in California is a series of high-voltage lines that move power between Southern and Northern California. Congestion occurs when electricity demand exceeds the transmission capacity of the lines, which lie largely in PG&E's territory.⁵⁶ Not surprisingly, Davis's Democratic allies in the state legislature are voicing increasing skepticism about the whole scheme. Assemblyman Dean Florez says that "It was a tough sell to begin with, and I think if you are going to only buy part, it becomes a tougher sell."⁵⁷

Energy Conservation, Price Caps, and Expanding Supply

Governor Davis also wants consumers to conserve energy. Yet, until recently, he opposed increases in retail prices, which would have provided the major impetus for consumers to reduce their consumption of electricity. Instead, Davis issued Big-Brother edicts such as requiring California businesses to cut their outdoor lighting in half or face fines of up to \$1,000 for every violation. The increased crime that such a requirement may cause did not appear to be a consideration.

Mirroring his long-held belief in retail price controls, Davis has recommended that the Federal Energy Regulatory Commission (FERC) impose controls on wholesale electricity prices. James Hoecker, the former FERC chair, says that Davis repeatedly demanded a federal wholesale cap of \$100 per megawatt hour, even though power generators could not be expected to sell for that price because it would not cover their costs.⁵⁸

As Hoecker noted, price caps only serve to drive companies out of the market, sending their electricity to states where no price cap existed.⁵⁹ Daniel McFadden, the Nobel laureate UC Berkeley economist, says that capping wholesale prices is no answer, causing, among other things, a big disincentive against building new in-state power plants.⁶⁰

This would effectively counter Davis's efforts to make it easier to build more power plants in the state. The governor has directed the California Energy Commission to complete the approval of small peaking plants, that operate during periods of high demand, within 21 days instead of the usual four months. The process for larger plants would also be cut. To help build the peaking plants faster, Davis has directed the state Air Resources Board to create a bank of pollution credits. Since these peaking plants can produce significant air emissions, power companies will need to buy pollution credits from businesses and others that have reduced their emissions, thus keeping overall pollution constant. The air board will be given \$100 million in state funds to create the pollution credit bank. The money will be used to reduce emissions from various sources, thus ensuring a steady supply of credits for the peaking plants.⁶¹

Davis has also asked President Bush to expedite permitting of plants by all appropriate federal agencies. State permits are often affected by federal decisions on water- and air-pollution standards and

endangered-species protection.

Still, Davis's belief that small peaker plants can help save California during the coming summer may be overly optimistic. He estimates that about 2,500 megawatts of new generation capacity will come from these peakers. Yet, as the *San Francisco Chronicle* notes, 1,000 megawatts of those peakers aren't even on the drawing board yet and another 1,300 megawatts are in limbo because it's not clear who will pay for them.⁶²

A recent *Los Angeles Times* investigation found that: "A contracting program the state hopes will bring in about 1,100 megawatts of peaking power has been stalled for weeks. Officials are still negotiating with about 10 developers and are uncertain how much power will be available for summer."⁶³ Also, the *Times* reports that half a dozen peaking plant applications have been withdrawn because of siting problems.⁶⁴

Price Increases

Most of Davis's responses have been based on his steadfast opposition to any relaxation of the government-imposed retail price controls. The governor remained unmoved as the state's leading economists and energy experts called a retail rate increase essential for solving the crisis. In recent months, even Democratic legislators and Davis's own aides talked openly about the inevitable need to raise retail rates to match wholesale costs. Yet, Davis continued to insist otherwise. Then, in late March came the surprising statement from PUC Chair Loretta Lynch that the Commission was going to reverse its opposition to a rate increase. It authorized a rate hike of about 40 percent for customers of the big private utilities.

The governor remained unmoved as the state's leading economists and energy experts called a retail rate increase essential for solving the crisis... Yet, Davis continued to insist otherwise.

Davis's response was completely at odds with this policy. He maintained that no rate hike was needed, and claimed that he didn't know that Lynch, his own Commission chair, was going to propose an increase. Davis's denials defied reality, since the governor is a well-known micromanager who keeps his appointees on a very short leash. As the *Los Angeles Times* noted, to believe that Ms. Lynch would propose a massive rate increase without Davis's knowledge strained credibility. Either Davis decided to remain shockingly ignorant, or he was engaged in equally disturbing political deceit.

On April 5, Davis finally dropped the no-rate-increase charade. In a short televised address, Davis admitted the need for a rate increase and proposed an average 26.5-percent rate increase. Many households would see small increases, while those entities that used the most power could face a 37-percent rise. These increases are based on a baseline of minimum household usage. In his address, Davis finally acknowledged that rising prices are the best conservation tools when he said that: "The more you use, the more you pay. The more you conserve, the more you save." Davis's plan would raise about 15 percent less revenue than the PUC's plan.

While the bulk of the rate increase money would go to finance bonds for long-term power purchases, five percent would be marked for the utilities to pay off their debts. Davis's aides estimated that \$8 billion would be raised to pay off part of the utilities' \$14 billion in debt. In contrast, Lynch's PUC rate hike proposal contained no provision to channel increased revenues to help pay off the utilities' debt, but would have instead put all the added money toward future state purchases of power and offsetting the funds already spent on power purchases.

Analysts, however, have noted that both the governor's and the PUC's rate increases are

insufficient. After the governor's speech, Standard and Poors said that both rate-increase proposals were insufficient to pay all electricity costs.⁶⁵ Indeed, many experts have noted for months that rates may need to double to correct the financial mess.

The ultimate commentary on the governor's proposal came from PG&E, which filed for bankruptcy soon after the governor delivered his speech. Although he had consistently argued that the two things he wouldn't accept were a rate increase and a utility bankruptcy, Davis ended up getting both at the same time. Whether the short-term cause of the bankruptcy stemmed from a breakdown in negotiations between PG&E and the governor's office, as the utility argued, or selfishness, as Davis claimed, the fact is that the bankruptcy was a long time in coming.

PG&E's \$9 billion debt accumulated over a lengthy period, and during that time Gray Davis failed to do the one thing that everyone said was needed to stave off bankruptcy-raise retail rates. When he was eventually forced to propose a rate increase, it was too little, too late. Wall Street bond analyst Dan Scotto, commenting on the effect of PG&E's bankruptcy filing, observed that "If Davis was toast before this, he is burnt toast today."⁶⁶

Policy Avoidance versus Policy Solutions

Davis's lack of leadership was apparent during the early stages of the crisis last year. Instead of getting on top of the problem early, Davis did nothing for months, which allowed the electricity problem to explode into a full-blown crisis. The level of Davis's inaction has been appalling. For example, Stephen Bergstrom, head of the major power company Dynegy Inc., has commented that he tried since May of 2000 to meet with Davis, but didn't get to discuss the crisis with the governor until January 2001.⁶⁷

Other energy executives make similar complaints about Davis's inaccessibility. The *Los Angeles Times* quoted a Wall Street analyst who attended a meeting last December with Davis on the electricity crisis. According to the analyst, instead of offering a plan, Davis spoke at length about how the crisis wasn't his fault. Further, says the analyst, Davis didn't talk about measures he was proposing, or about what steps he could or would take. Davis, observed the analyst, "wouldn't address it, to be perfectly honest."⁶⁸

One way Davis stuck his head in the sand last year was to ignore the early importance of long-term contracts for power. Last July 31, Duke Energy Corporation, one of the major power companies, offered Davis a five-year deal for 2,000 megawatts of electricity at five cents a kilowatt-hour. In August, the spot price of electricity rose to nearly 17 cents a kilowatt-hour. Yet, Duke officials say that they never heard back from Davis and the offer expired.⁷³ Later, of course, Davis would brand companies like Duke as "pirate generators."

The leadership void is underscored by a simple fact. At no point has Davis laid out for the people of California- in a televised address, perhaps, or even a news conference- how the various approaches he's pursuing will result in a stable and reasonably priced power supply. Instead, he's thrown a blanket of secrecy over his multibillion-dollar power purchases and ducked detailed questions on their long-term effects on consumers.⁷⁴ And, indeed, most experts are still predicting that California will not have enough electricity to meet summer demand.

While Davis did recently decide to go on television and tell Californians about what's he's doing to address the crisis, his speech lasted only five minutes, hardly enough time to get into the details about

the crisis and any innovative proposals.

Worse, in those five minutes, he either simply repeated his old themes and proposals, such as blaming the feds and having the state sign long-term contracts, or he reacted to the actions of others, such as proposing a rate hike similar to the PUC's. Indeed, the stories in the newspapers on the day after the speech headlined Davis's acknowledgement that a rate hike was necessary and featured the theme that he was one of the last people in the state to finally admit this basic economic fact.

Resolving the Crisis

There are short-term reforms that California lawmakers could implement immediately in order to restore stable and reasonably priced electricity to the state. These include:

Eliminate government controls on the retail price of electricity, either immediately or gradually over a relatively short time frame.

Enact a surcharge on consumers to recoup some part of the utilities' losses under government price controls.

Emphasize real pricing so that rates increase during peak demand periods.

Allot some transitional/temporary aid for the poor to assist them during the changeover to market-determined prices.

Give utilities full flexibility to enter into short, medium, and long-term contracts for electricity.

Use the governor's emergency powers to suspend government rules and regulations that delay power plant construction.

Without such measures, Californians will continue to experience power shortages, a condition more akin to conditions in the Third World than the most populous state, the home of the high-tech industry, and once an example to the nation. While that is a serious problem, it also provides an opportunity for politicians, policymakers, and the public to learn a valuable lesson.

The current energy debacle makes it impossible to deny the link between ideas and consequences. Politically motivated policies that evade responsibility, ignore economic reality, and demonize suppliers create a power crisis. Only policies based on economic reality and fiscal responsibility can provide the steady flow of power the Golden State needs.

This study is based on a speech given to the Smith Center at California State University, Hayward, on April 18, 2001.

Notes

1 "Bad decisions, booming demand a costly mix for natural gas bills," San Jose Mercury News, 8 March 2001.

2 Jerry Taylor and Peter VanDoren, "Power Economics," CATO Institute, 29 March 2001.

3 "Regulators, utilities sought fixed contracts 6 months ago," San Francisco Chronicle, 4 February 2001.

4 *Ibid.*

5 *Ibid.*

6 Michael Zenker and Daniel Yergin, "Want More Power? Build We Must," Los Angeles Times, 23 January 2001.

7 William P. Kucewicz, "California Dreaming," GeoInvestor.com, 12 February 2001.

8 Michael Zenker and Daniel Yergin, *op. cit.*

9 *Ibid.*

10 *Ibid.*

11 "Power Grab," The Wall Street Journal, 15 February 2001.

12 *Ibid.*

13 *Ibid.*

14 *Ibid.*

15 Michael Kahn and Loretta Lynch, "California's Electricity Options and Challenges: Report to Governor Gray Davis," Electricity Oversight Board and Public Utilities Commission, 2 August 2000: p. 40.

16 *Ibid.*
17 Jerry Taylor and Peter VanDoren, "California's Electricity Plan Falls Short," CATO Institute, 7 February 2001.
18 "Manifesto on the California Electricity Crisis," Institute of Management, Innovation, and Organization, University of California at Berkeley, 26 January 2001.
19 "Brown and Out in Beverly Hills," *Wall Street Journal*, 23 January 2001: p. A21.
20 Daniel McFadden, "California Needs Deregulation Done Right," *Wall Street Journal*, 13 February 2001.
21 George Reisman, "California Screaming, Under Government Blows," Ludwig von Mises Institute, 22 December 2000.
22 "Manifesto on the California Electricity Crisis," *op. cit.*
23 William P. Kucewicz, "California Dreaming: Energy Policymakers Can't Defy Economics Forever," *GeoInvestor.com*, 12 February 2001.
24 "Manifesto on the California Electricity Crisis," *op. cit.*
25 Daniel McFadden, *op. cit.*
26 James Bushnell and Erin Mansur, "The Impact of Retail Rate Deregulation on Electricity Consumption in San Diego," University of California Energy Institute, PWP-082, April 2001: p. 1.
27 *Ibid.*, p. 22.
28 *Ibid.*
29 Adrian Moore and Lynne Kiesling, "Powering Up California," Reason Public Policy Institute, E-Brief 109, January 2001: p. 16.
30 *Ibid.*, pp. 16-17.
31 *Ibid.*, p. 16.
32 *Ibid.*, p. 17.
33 *Ibid.*
34 Benjamin Zycher and Gary B. Ackerman, "Davis Ducks Reality on Electricity 'Overcharges,'" *Los Angeles Times*, 27 March 2001.
35 *Ibid.*
36 *Ibid.*
37 Severin Borenstein, "The Trouble with Electricity Markets (and some solutions)," University of California Energy Institute, PWP-081, January 2001: pp. 21-22.
38 Jerry Taylor and Peter VanDoren, "Power Economics," *op. cit.*
39 "Governor, Utility In War Of Words," *San Francisco Chronicle*, 9 April 2001.
40 *Ibid.*
41 *Ibid.*
42 "California energy crisis: Who missed the warning signs?," *San Jose Mercury News*, 17 February 2001.
43 Michael Lynch, "Dim Bulbs in the Golden State," *Reason Online*, 22 February 2001.
44 "Energy spiral shows results of indecision," *Oakland Tribune*, 13 April 2001.
45 "Manifesto on the Electricity Crisis," *op. cit.*
46 "Treasurer Urges Disclosure of Power Cost," *Los Angeles Times*, 5 April 2001.
47 *Ibid.*
48 "\$10-Billion Power Bond May Be Gone by September, Officials Say," *Los Angeles Times*, 9 March 2001. Available at
49 "Treasurer Urges Disclosure of Power Cost," *op. cit.*
50 "State gets \$4.1 billion infusion," *San Diego Union-Tribune*, 5 April 2001.
51 Peter Navarro, "Locking in a \$9-Billion Energy Mistake," *Los Angeles Times*, 6 March 2001.
52 Dan Walters, "Image aside, crisis worsens," *Sacramento Bee*, 20 March 2001.
53 "Contracts Won't Meet Summer Demands," *San Francisco Chronicle*, 22 March 2001.
54 "Davis's solutions may be in trouble: Skepticism is now growing among Democrats over a plan to purchase transmission lines," *Sacramento Bee*, 4 April 2001.
55 "Davis Arranges to Buy Edison's Share of Grid," *Los Angeles Times*, 10 April 2001.
56 "Failure to Buy Entire Network May Doom Davis's Power Deal," *Los Angeles Times*, 12 April 2001.
57 *Ibid.*
58 "Regulators, utilities sought fixed contracts 6 months ago," *op. cit.*
59 *Ibid.*
60 Daniel McFadden, *op. cit.*
61 "State Takeover of Grid Gains Favor," *Los Angeles Times*, 9 February 2001.
62 "Davis's Plan for Summer Power," *San Francisco Chronicle*, 21 February 2001.
63 "Experts Doubtful About Rush to Build Small Power Plants," *Los Angeles Times*, 15 April 2001.
64 *Ibid.*
65 "Davis Acknowledges Need for Rate Hike," *Los Angeles Times*, 6 April 2001.
66 "Davis Takes One Jolt After Another as Crisis Intensifies," *Los Angeles Times*, 7 April 2001.
67 "Widely Criticized in Crisis, Davis Defends His Caution," *Los Angeles Times*, 22 January 2001.
68 *Ibid.*
69 "California's energy crisis: Who missed the warning signs?," *San Jose MercuryNews*, 17 February 2001.
70 Dan Walters, "Crisis also one of leadership," *op. cit.*