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## “The Making of” California’s Energy Crisis

Jan Whittington

### **Abstract**

This article examines the origins of the California Energy Crisis through the lens of economic and political theory. The key turning points leading up to deregulation of the State’s energy markets are reviewed. The origins of the crisis are then framed in free market ideology and the garbage can model of political decision-making. Specifically, it is argued that California’s case exemplifies a process of *deregulatory capture*. A few interest groups used a window of political opportunity to shape the rules governing the process and create new economic opportunities, while shielding themselves from economic risk. These insights regarding the origins of the crisis highlight the need to enrich planning discourse with positive theories of market and polity interaction, and to adopt a more entrepreneurial role for planners during periods of dramatic reform of public infrastructure and services.

### **Introduction**

It is often debatable whether a particular event or situation can be accurately described as a crisis. Interest groups proclaim the existence of crises that demand public policy responses, but rarely do all interested parties agree to their characterization. As John Kingdon suggests, crises must often be accompanied by a number of supporting conditions before they become part of the public policy agenda [Kingdon, 1995:98].

Limits and bottlenecks built into democratic institutions compound this problem. Procedures for budgeting and legislation often narrow the attention span of government. Although designed to restrain ill-conceived or inappropriate short-term responses, such limits create a threshold over which issues must pass to receive serious consideration. Therefore, within complex governance institutions a significant number of participants must recognize a crisis as worthy of scarce attention and resources.

Even if this recognition is achieved, it may be too late to effectively address underlying problems or the polity may become bogged down in attempts

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to design solutions. In spite of a consensus that a particular crisis is worthy of a policy response, political discourse can quickly devolve into disagreements over its origins and its relative impact on various groups. Without resolution of such uncertainties, responses are difficult to design, much less implement.

California's energy crisis exemplifies this state of affairs. There has been disagreement over the cause and extent of the crisis and responses have been partial and tentative. This article presents a viewpoint on the origins of this crisis. Unlike natural disasters, the state's energy problems were the result of a series of decisions made over a long period of time, rooted in economic discourse and political action. Therefore, this article presents the case through the lens of both political and economic theory.

As a case study analyzed by a planner for planners, the story told here could leave readers puzzled. Where were the state's "planners" in the making of this crisis? Governors, legislators, public utility commissioners, lobbyists, and private industry advocates played decisive roles. Are these "planning" positions? Would the contributions of planners - professionally or academically - have made a difference?

This case offers impetus to re-evaluate the role of the planner and planning theory in policy formation. Since planning is uniquely endowed with an orientation toward the future, one would think that planners would strive to avert crises. Based on this presumption, an examination of the origins of California's energy crisis can be undertaken with two fundamental questions in mind: *What can this case tell planners about how to avert crises? What positive and normative theories would support planners in this role?* This article examines the state's energy crisis, and in doing so, reveals the pitfalls of the predominant definition of planning.

### **The Deregulation Movement**

In the 1950s and 60s, a growing number of economists reached the conclusion that regulation of price and entry in many markets was inefficient and should be eliminated. The concept of "natural monopoly" that drove the US government to regulate various markets was being fundamentally challenged. Critiques, punctuated by Stigler's influential article, "The Theory of Economic Regulation" [1971], carried the regulatory reform message from foundations and research institutes into the U.S. Congress and state legislatures.

From the opposite end of the political spectrum, Ralph Nader and other consumer advocates added impetus to deregulation. Government agencies, they argued, had been captured by the very business interests they were supposed to regulate. Rather than protecting consumers, they portrayed regulation as implemented at the expense of consumers. President Ford, influenced by these movements and at a loss for a solution to severe inflation, picked up deregulation and carried it to the forefront of the domestic agenda, where it stayed for decades.

Beginning with the airlines, hearings were held and administrative rules were lifted for one industry after another. From trucking, telecommunications, and railroads, to securities, banking, and the postal service, economic sectors were evaluated and deregulated. In particular, reformers sought to remove restrictions on price and market entry, especially where such restrictions were thought to raise consumer prices. The economic rationale behind these political decisions was the presumed ability of competitive forces to lower consumer prices.

However, it didn't take long for the term "deregulation" to take on deeper political symbolism, affirming the values of free enterprise and limited government. Deregulation tapped into a vast and growing cynicism about government institutions and became a fashionable policy tool, with increasingly drastic measures implemented from administration to administration (Derthick and Quirk 1985; Kingdon 1995).

### **National Deregulation of Electricity**

The electric utility industry had been recognized as a natural monopoly since the beginning of the 20<sup>th</sup> Century. Most economists agreed that the industry was characterized by significant economies of scale and large fixed capital costs that limited the entry of new participants. Territorial expansion and vertical integration early in the century set a stage for the abuse of market power by utilities and their holding companies. With the Public Utility Holding Company Act of 1935 [Public Law 74-333], electricity became a regulated market, buttressed by state and federal laws controlling price and market entry.

The market for electricity remained a regulated monopoly for over 40 years. Large investor-owned utilities<sup>1</sup> were responsible for power generation, bulk transmission on high-voltage lines, and local distribution

through stepped-down voltage lines, substations, and transformers. They operated in exclusive franchise areas, and were obliged to serve all consumers within that territory.

Through the Federal Power Commission, utilities set up selective bulk transmission lines to facilitate the wholesale delivery of power between states and regions on a case-by-case basis. However, utilities were primarily regulated by state public utility commissions, which set out to ensure customers reliable service while allowing utilities to earn a fair rate of return on their investments. Under this system the utilities were shielded from competition. Economies of scale brought declining costs through capacity additions and technological advances. Utilities were able to earn steady returns in the face of decreasing prices and surging demand.

However, these steady returns proved unsustainable. In the 1970s capacity began to exceed demand, and inflation, fossil fuel prices, and problems with nuclear safety drove up unit costs. Consumers saw their utility bills rise sharply for the first time in history. These conditions emerged just as the deregulation movement was gaining traction.

Congress responded with The Public Utility Regulatory Policies Act of 1978 (PURPA) [Public Law 95-617]. PURPA had the effect of opening the wholesale market to just enough competition to throw public confidence in utilities. Utilities had predominantly invested in coal and nuclear fuels, at high cost financially and environmentally. New suppliers<sup>2</sup> - mostly industrial manufacturers - brought in new, cleaner technology, such as gas-fired plants, and were generally free from federal and state regulation. And with PURPA, the Federal Energy Regulatory Commission (FERC), which was authorized to facilitate competition by requiring utilities to open their transmission lines to the new suppliers, replaced the Federal Power Commission.

The new suppliers seemed competitively superior to the utilities. They used more cost efficient technology, and did so free from the regulatory restrictions of the 1935 Public Utility Holding Company Act. That being said, the term "competition" hardly describes market conditions. The utilities and new suppliers did not compete on price. Utilities were forced to purchase power from the new suppliers based on the avoided costs of constructing their own additional capacity. Guaranteed markets built into the utilities' territorial monopolies sheltered all parties. Accordingly, new

suppliers grew like hotcakes. By 1991, they were producing 9 percent of all the electricity in the United States.

In the meantime, the symbolic power of deregulation among policymakers had expanded from the transportation and telecommunications industries into energy. By the time President George Bush signed the 1992 Energy Policy Act [Public Law 102-486], the market for natural gas had already been deregulated and judged successful. The Energy Policy Act took the next step by opening the market for electricity to any wholesale generator or trader willing to participate. The new generators and traders could charge as much as the market would bear for electricity, and the utilities were not required to purchase their power.

### **1990 to 1993 - California Takes the Lead in Electricity Deregulation**

A century-long swing from regulation to open markets had been undertaken on a national scale. This swing picked up California and took it for a ride, as the state became one of the first to take advantage of federal energy deregulation. Deregulation appealed to the California's new Governor, a new cohort of wholesale electricity generators and traders, and a hard-lobbying group of heavy manufacturers.

In 1990, Pete Wilson, a pro-business Republican with presidential aspirations, was elected Governor. At the same time, California was entering the throes of a deep recession. The state was experiencing the economic side effects of massive cutbacks in military spending. Over the next three years the state lost 750,000 jobs and Wilson's approval ratings plummeted.

For previous administrations, deregulation had achieved a big splash politically by reducing consumer prices without increasing government spending. Additionally, deregulation was likely to garner public support in the state that produced Proposition 13. In this context, energy deregulation for California caught the Governor's attention. [SJMN November 30, 2000; LAT December 9, 2000; SB May 6, 2001]

The conditions established under PURPA had made California a hot spot for new generating facilities. However, advances in gas fired cogeneration plants<sup>3</sup> on the part of some manufacturers drew the envy of others. The cement and steel industries, which did not enter the market as electricity

cogeneration facilities, were advocating deregulation as a solution to high costs. For example, Hanson Permanente Cement was devoting roughly 25 percent of production costs to electricity payments, while facing competition from lower cost overseas producers. Their primary representation was the California Large Energy Consumers Association. Convinced that they could buy cheaper electricity if allowed to purchase directly from wholesale generators, they lobbied the Governor in support of deregulation. [SJMN November 30, 2000]

Under traditional, rate-based regulation, California's utilities - Pacific Gas & Electric (PG&E), Southern California Edison (SCE) and San Diego Gas & Electric (SDG&E) - were able to recover their costs plus reasonable profit regardless of the scale or type of investment they pursued. Nuclear power plants were popular developments in California, but their unexpectedly high construction costs sent rates soaring. For example, PG&E's Diablo Canyon plant was estimated to cost \$400 million [1965], but ended up costing \$5.8 billion. SCE and SDG&E's jointly owned San Onofre plant, budgeted at \$1.3 billion, cost \$4.3 billion. Even if consumers did not realize it, they bore the risk of these investment decisions. The utilities had no direct financial incentive to change their investment habits. By 1996, the price of electricity in California was the tenth highest in the nation. [WP August 21(a), 2001; LAT December 9, 2000; DOE 2000]

Rather than wait for deregulation of their markets, the parent companies of California's utilities - PG&E Corporation, Edison International and Sempra Energy, respectively - had been using PURPA to position themselves in the wholesale generation market. In exchange for opening their transmission lines to competition, FERC allowed the utilities to buy or build unregulated power plants outside their service areas. For example, PG&E and Bechtel Corporation won joint contracts to build cogeneration plants in SCE and SDG&E territory. In fact, PG&E's National Energy Group eventually became one of the nation's leading wholesale power generating and trading companies, with more than 30 plants in 10 states. [WP August 23, 2001; SFC January 22, 2001; SJMN February 3, 2001]

The utilities and their parent companies didn't have to push to make deregulation possible. Energy firms such as Enron, already wealthy from trading in deregulated natural gas markets, were eager to expand into electricity. They aggressively lobbied from state to state, urging deregulation and offering campaign contributions. They argued that Californians could receive substantial gains by requiring the state's three

investor-owned utilities to sell off their power plants and compete. [SB May 6, 2001]

These arguments set Governor Wilson down the path toward deregulation. He began with the California Public Utilities Commission (CPUC). In September of 1992, the CPUC began to explore alternatives to their regulatory approach [Decision No. 92-09-088]. Six months later a 200-page staff report was submitted. Known as the “Yellow Book”, this report described deregulation as a logical response to both national trends and increasing pressure from manufacturing groups. [DOE, 2000; SJMN November 30, 2000]

By 1993, four of the five commissioners in the CPUC were Wilson appointees. The four were outspoken in their support for the Governor’s free market objectives. As former CPUC member Greg Conlon noted, “If I didn’t believe that, I probably wouldn’t have been appointed.” [SJMN November 30, 2000]

### **1994 and 1995 - Deregulation Takes Shape**

In 1994, the CPUC launched investigative proceedings to consider restructuring the industry. In a 100-page policy statement known as the “Blue Book,” the Commission declared their intent to dissolve the monopolies held by utilities and create an open market within two years. Enron’s executive Jeffrey Skilling was just one of many voices urging the state to move forward quickly, promising the State’s \$23 billion annual energy bills could be reduced by as much as \$9 billion. [DOE 2000; SJMN November 30, 2000; SB May 6, 2001]

Following the CPUC proceedings, the State’s utilities began to play a larger role in shaping legislation. The parent companies, along with energy firms such as Enron and Southern Energy, funded the non-profit California Foundation on the Environment and Economy (CFEE). CFEE organized trips for legislators and lobbyists. Their goal was to stir debate around topics of economic importance and give CFEE members and scholars an opportunity to suggest directions for state policy.

In March of 1994, CFEE took CPUC members, legislators, and lobbyists to view England’s model for energy deregulation. They toured power plants, utility offices, and the National Grid - a kind of stock exchange for England’s power transactions. Influenced by the trip, Edison advocated a system similar to the British model, ending utility monopolies and channeling



wholesale electricity purchases through an exchange pool. [OCR October 15, 2000; SJMN November 30, 2000; SB May 6, 2001]

However, support for the British model was not unanimous. Some voiced concern that existing utilities would be given too much control under such a system. Manufacturers, PG&E, out-of-state suppliers and energy marketers preferred the idea of industrial and residential consumers purchasing directly from generators.

By 1995, this rift threatened to stall deregulation. Governor Wilson's chief of staff, George Dunn, and chief economist, Philip Romero, convened a series of meetings to resolve the dispute. The California Large Energy Consumers Association, the California Manufacturer's Association, and the Independent Energy Producers Association were prominent players. On the utility side, SCE was also a vocal participant, while PG&E primarily watched from the sidelines.

In August, Governor Wilson announced a breakthrough agreement. Under the compromise, utilities would buy and sell power through a pool, but other consumers would be free to buy from suppliers outside the pool. This deal between the utilities and industry became part of a plan adopted by the CPUC on December 20, 1995. By then, all five members were Wilson appointees. [SJMN November 30, 2000; SB May 6, 2001]

The compromise brokered by Wilson's staff led to the creation of two new organizations: the California Power Exchange, and the California Independent System Operator (Cal ISO). The Power Exchange would be a wholesale pool, acting as a continuous computerized auction, accepting bids to balance demand with supply. It would also be the only source of power available to the utilities. Cal ISO would be a non-profit organization responsible for operating the utilities' transmission systems across the state. [SJMN November 30, 2000]

In April of 1996, FERC issued Orders 888 and 889 creating Cal ISO. Order 888 required utilities to provide universal access to the transmission system for all qualified users. Order 889 compelled them to participate in OASIS [Open Access Same-Time Information System], an interactive, Internet-based system providing day-to-day information about transmission capacity and prices. [DOE 2000]

Meanwhile, further logistics were hammered out. The utilities, the CPUC, and a number of energy suppliers and customers, including the California Large Energy Consumers Association, held a series of meetings up and down the state under the auspices of the Western Power Exchange Steering Committee. During these forums, detractors - the California Energy Commission, SDG&E and select industry analysts - warned that the system being considered could be prone to secrecy, gaming, or market manipulation. However, dissent from Wilson's plan was ignored. [SB May 6, 2001]

One of the key points worked out in these meetings was the recovery of stranded costs. Enron and others were still concerned that utilities would continue to exercise undue control over the market. Therefore, PG&E, SCE, and SDG&E were ordered to divest at least half of their electricity generation assets. However, it was widely believed that the new generating companies, such as Duke Energy, Reliant, and Southern Energy, would not be willing to buy large, technologically outdated plants. The costs associated with these plants became known as *stranded costs*. To sweeten the deal, the utilities were guaranteed the ability to charge their customers to recoup these costs. [WP August 21(a), 2001; SJMN November 30, 2000] With these agreements in place, the Wilson Administration drafted a bill.

### **Summer 1996 - The Legislature's "Death March"**

In the summer of 1996, Wilson's draft was passed on to a six-member legislative conference committee led by Senator Steve Peace (D - El Cajon). At the time, Senator Peace had 13 years of experience in the California Legislature, where he had built a reputation as a master of complex issues and high stakes deals. Since he chaired the Senate Energy Committee, he and his staff were already familiar with the industry.<sup>4</sup>

Senator Peace felt pressure to act quickly. Governor Wilson did not want the bill to stray from the agreement brokered by his staff or the plan adopted by the CPUC. The utilities and manufacturers also wanted legislative action to secure in law the agreements already reached by the Administration. Senator Brulte (R - Rancho Cucamonga) drafted the Governor's bill. Republicans had control over the Assembly and Democrats had a narrow majority in the Senate, leaving no room for bargaining on votes. If the legislature failed to pass a bill, the CPUC was poised to act.

Peace also felt pressure from FERC, since interstate transmission had already been opened to competing energy suppliers.

Thus the legislative conference committee began 18 days of hearings commonly referred to as the “Steve Peace Death March.” Consensus was reached through exhaustion, as well as minor concessions to groups representing residential customers, municipal utilities, environmentalists, labor unions, BART (Bay Area Rapid Transit), the University of California, and San Joaquin Valley agricultural interests. Residential and small business customers were appeased with the promise of a ten percent rate reduction. Municipalities content with their publicly provided power services were made exempt from the process. Environmentalists were promised \$540 million in subsidies for renewable energy. At the end of August, Senator Peace’s committee sent the 67-page bill directly to the floors of both the Assembly and Senate. [OCR, August 9, 2000; SJMN November 30, 2000; DOE 2000]

There was, however, one legislator that found the promises of deregulation incredulous. Assemblywoman Diane Martinez, chair of the utilities committee, was concerned about consumer protection. She watched her fellow legislators give inordinate amounts of time and attention to utilities that had donated to their campaigns. She papered committee room walls with 1,500 blue postcards from citizens urging legislators to vote for her consumer bills. [LAT August 24, 2000]

Her fellow legislators regarded her as “loony.” Utility lobbyists and committee members steered clear of her hearings. The bill from Senator Peace was also packed with special provisions. This meant that consumer interest groups were not taking to the airwaves in protest. All told, California’s utilities had spent \$4.3 million lobbying and donated more than \$1 million to political campaigns. The bill had originated with Governor Wilson, but legislative leaders of both parties supported it. On August 30, 1996, it passed both houses of the legislature without a single dissenting vote. Even Assemblywoman Martinez voted for it. She, like many other legislators, reasoned that their legislation was better than the plan proposed by the CPUC. [SJMN November 30, 2000; LAT December 9, 2000; SB May 6, 2001; LAT August 24, 2000]

Governor Pete Wilson signed the bill into law on September 23, 1996, saying “We’ve pulled the plug on another outdated monopoly, and replaced it with the promise of a new era of competition.” Entitled, “The Electric Utility Industry Restructuring Act” (AB 1890), this new law established a

4-year transition period for implementing a competitive electric power market. [LAT December 9, 2000; DOE 2000]

PG&E, SCE, and SDG&E immediately began selling off their generating plants to independent generators, such as Duke Energy and Reliant.<sup>5</sup> Retail customers began footing the bill for their own 10 percent rate cut, in the form of a charge to repay bonds associated with the process. Additionally, retail customers began to pay a “competition transition charge” to cover stranded costs.<sup>6</sup> [DOE 2000; WP August 21(a), 2001]

### **March 1998 - The Market Opens for Business**

The California Power Exchange became operational on March 31, 1998. The state’s investor-owned utilities were required to purchase power from the Exchange for the next four years. Municipalities, independent power producers, irrigation districts, and out-of-state producers were permitted to sell power on the Exchange, but free to purchase power on the open market.

The Power Exchange was a type of auction-based spot market. Companies wanting to buy power submitted the amount needed for the next day and the price they were willing to pay. Bids for supply were solicited from generators on quantity and price. Bids were ranked and the lowest were selected until enough supply was secured to meet demand. Prices were set at the point where demand and supply met on an hourly basis. All of these transactions occurred via computer, and staff simply collected on orders after they were completed. In an effort to foster competition, the Power Exchange’s hourly prices were to be made public, while the names of bidders, quantities bid, and buyers were to remain undisclosed for at least six months. [DOE 2000; LAT December 9, 2000]

The Cal ISO received approval from FERC in October 1997, and became operational on the same day as the California Power Exchange. Its major responsibilities were to maintain reliability and ensure fair access to the high-voltage transmission system for all generators. Cal ISO was also given the authority to make sudden purchases of electricity - at whatever price necessary – in the event that a lack of supply offers through the Power Exchange threatened blackouts. However, it was assumed that Cal ISO would handle only about 5 percent of the electricity consumed in the state. [DOE 2000; LAT December 9, 2000]

Retail competition also began on March 31, 1998. This element of deregulation was intended to allow customers to choose their electricity provider. The transition was rolled out with tremendous fanfare and an \$87 million ad campaign. The "Knowledge is Power" ads urged customers to review their choices and select an electricity supplier.

At this point in the process, all seemed to be going as planned. Deregulation was projected to cut the average cost of generating electricity from \$60 to \$30 per megawatt-hour. Over the next year and a half, dozens of competitors entered the market. The wholesale price of power fell dramatically and the utilities were able to recover their "stranded" costs. Californians were demonstrating an unquestioned faith in the power of the free market. Many other states began working toward adopting California's model for deregulation. [WP August 21(a), 2001; SJMN November 30, 2000]

### 1999 - The Crisis Appears

"To sell the power plants was stupid. To sell the power plants without contracting for the electricity borders on criminal... The price of rent is going to be whatever the new guy paid for your power plant plus the price of electricity." Assemblyman Roderick Wright (Democrat, Los Angeles) referring to the notion that having sold its electricity assets, California is now in the position of renting. As quoted in the Los Angeles Times, December 9, 2000.

"It's not that I can't afford the bills; it's the principle. I just don't think this is right. A lot of us were for deregulation, but we never thought this would happen."

Micae Martinet, residential customer of San Diego Gas & Electric, referring to skyrocketing electricity rates and her request to be disconnected from San Diego Gas & Electric service. As quoted in the Los Angeles Times, July 17, 2000.

SDG&E was the first of the three investor-owned utilities in California to fully divest itself of generating plants, pay off major debts, and recover stranded costs. Assets were sold quickly and at rates above book value, regardless of age or condition. For example, a 46-year-old gas fired Carlsbad plant neighboring one of San Diego's most popular beaches was purchased by Dynegy and NRG Energy for nearly four times its book value.

On July 1, 1999, residents of San Diego became the first customers in the nation to pay true market prices for their electricity. Wholesale prices at the California Power Exchange had been creeping up for months. However, retail prices remained steady in spite of this trend. SDG&E had been purchasing power at elevated prices, but was prevented from passing on these costs. Their rates were capped until their assets were divested and stranded costs recovered. Although the projected savings from deregulation did not appear, complaints were muted during the initial phase of deregulation.

This abruptly changed in the summer of 2000. Once SDG&E was released from rate caps, retail prices for its 1.2 million customers quickly adjusted to account for the climbing wholesale prices. [LAT July 17, 2000; LAT December 9, 2000; SFC, July 27, 2000] In July, the average monthly bill for residential, business and public agency customers doubled. During periods of peak demand, price hikes were even more dramatic. In April and May the peak period cost had been \$27 to \$57 per megawatt-hour, by June prices reached \$520 per megawatt-hour. [LAT July 17, 2000; LAT December 9, 2000]

Senator Peace was quick to accuse generators of gouging customers. He called for a rate freeze, and suggested that customers engage in “economic disobedience” by paying only half of their bill. A local television station poll found that more than half of the region’s customers planned to follow this suggestion. SDG&E officials blamed power generators for charging high rates on the open market and hot summer weather. The company announced that they would allow customers to defer payment on as much as 50 percent of their bills. The CPUC began to hold hearings in August, but they were not armed with alternatives to deregulation. [LAT July 17, 2000; SFC, July 27, 2000]

As San Diego’s prices climbed, so did profits for generating companies. Arizona Public Service Company - the second largest power generator in the west - reported a 40 percent increase in second quarter earnings. Enron Corporation reported a 30 percent jump. Similarly, PG&E’s parent company reported quarterly profits up by 38 percent. In the words of Dan Richard, PG&E’s senior vice president of government and regulatory relations, “If you’ve got the only Beanie Babies in town, you can charge whatever you want. Is that gouging? I don’t know.” [SFC, July 27, 2000]

Senator Peace also began appealing to Governor Gray Davis. He asked the Governor to use his emergency powers to hasten construction of new plants, and to ask federal regulators to investigate California's market. Industry observers likened the unfolding crisis in San Diego's to watching a train wreck, clearly aware that once SCE and PG&E's service areas were released from rate caps the entire state would quickly replicate the pattern. [SFC, July 27, 2000]

In 1999, the early signs of a statewide crisis were appearing. Cal ISO declared a Stage 1 emergency four times. In a Stage 1 alert, reserves are below seven percent and the public is asked to conserve. The state also experienced a Stage 2 emergency in which reserves fell below five percent, and select customers had their service interrupted.

By 2000, the severity of the crisis mounted. The Cal ISO documented 55 Stage 1 alerts, 36 Stage 2 alerts, and one Stage 3 alert. Stage 3 alerts are triggered when reserves fall below 1.5 percent. During Stage 3 alerts, rolling blackouts are put in place to preserve the integrity of the electricity grid, which depends upon maintaining a balance between the flow of power into and out of the system.

By the end of the summer of 2001, the energy crisis had reached its apex. During the peak demand season, the state had seen 38 Stage 3 alerts and over 130 Stage 1 and 2 alerts. PG&E urged customers to check the outage block number printed in small type on each monthly bill, and to watch the local news for listings of blocks subject to rotating outages for that day. [Cal ISO 2001; SJMN January 18, 2001]

### **Searching for the Origins of the Crisis**

Many post-mortem accounts of California's energy crisis blamed a "perfect storm" of weather conditions, natural gas price hikes, stagnant supply, and skyrocketing demand. However, the story involves much more than these three underlying forces. Although few could have imagined the extent to which electricity generators and traders would go to fix prices, such collusion was not unprecedented in energy markets. A cursory examination of the market conditions in the early 20<sup>th</sup> Century would have provided a cautionary short-list of market failures that demanded regulators careful attention.

Unusual weather conditions were cause for concern. The crisis emerged in San Diego during a summer warmer than average. The Pacific Northwest was also experiencing an unusually dry year, which meant that its hydroelectric power reserves provided much less surplus summer power to California than normal. During the winter of 2000, cold snaps in the Northeast also lured natural gas supplies away from California. This had the dual impact of raising residential heating bills and increasing the cost of producing electricity in the natural gas powered plants that provided most of the state's electricity. However, these factors alone could not account for the numerous supply emergencies occurring that year. [NYT December 17, 2000; SFC December 5, 2000]

Another explanation receiving attention was the failure to expand generating capacity in the state. In the midst of this crisis it was often noted that no new power plants had been constructed in California over the past decade. In 1994, the California Energy Commission had forecasted that, by the year 2000, demand would rise from 48 thousand to 56 thousand megawatts. The CPUC subsequently took bids to construct renewable and cogeneration plants amounting to 1,400 megawatts of additional supply - enough to cover one-quarter of the anticipated growth. The state's utilities could have invested in these new plants, but chose not to. PG&E, through a joint venture, placed some bids. However, SCE and SDG&E did not want to enter into any new contracts. SCE officials believed that the additional supply was unnecessary. [SJMN February 3, 2001]

Industry representatives and legislators discussed rampant growth in demand from Silicon Valley, with its "server farms" and consumer electronics. However, Cal ISO data on consumption patterns clearly indicate that rising demand could not have caused the crisis. California's summer demand hovered around 45,000 megawatts – roughly equal to the capacity of the State's power plants. During the blackouts in January of 2001 total demand was only about 30,000 megawatts. [SFC March 11, 2001]

Cal ISO had a different explanation for the source of the problem. On July 9, 1998, ISO employees were stunned to see the short-term price of power reserves shoot from \$1 per megawatt-hour to \$5000, where it remained for three hours. Then, in an equally mysterious fashion, the price dropped back to \$1. Four days later the price leaped to nearly \$10,000 per megawatt-hour for four hours, then dropped to a penny. In the words of chief executive



Jeffrey Tranen, "All of us saw those numbers and realized ... there was nothing to stop someone from bidding infinity." [SB May 6, 2001]

Some of this behavior can be explained by the rules governing the California Power Exchange. Generators were allowed to submit up to ten selling prices for each hourly auction. Each price pertained to a different batch of electricity. The Power Exchange ranked supplies from the least to most expensive, and purchased bates until they were able to satisfy demand. However, the highest selling price accepted for that period was then used as the baseline to calculate the compensation for all generators who sold power. [WP August 21(b), 2001]

Generators, anticipating tight supplies, placed the majority of their bids at competitive prices. However, their final increments of power were offered to the Exchange at levels three to ten times higher than their competitive bids. In past rounds, their competitors had done the same. As long as they continued their strategy en-masse, all would be guaranteed a lucrative outcome. Whether generators directly colluded or not, they were able to signal their intentions in the structure of the bids at each hourly auction. [WP August 21(b), 2001]

Internet-based communication seems to have enhanced generators ability to fix prices without direct collusion. Generating companies and marketers used a web site set up by the Western Systems Coordinating Council. The site provided live feeds of data on generation and transmission. Additional live data on energy up for auction, bidding prices, and when prices were accepted was available on the web site of the California Power Exchange. Further, the Federally mandated OASIS system showed transmission bottlenecks that could affect prices. With real time data at their fingertips, generators and marketers had all the information they needed to manipulate the system.

Generators could create scarcity by pulling facilities offline. When enough capacity was taken offline, the scarcity would force a transfer of the bidding process out of the California Power Exchange and into Cal ISO, where bidding devolved into nothing more than Cal ISO staff phoning generators and asking for power at almost any price. Instead of handling the anticipated 5 percent of the state's electricity, Cal ISO was handling up to 30 percent.

Generators and traders also anticipated congestion through key bottlenecks and priced their bids to take advantage of access to alternative transmission lines. Kellan Fluckiger, the ISO's grid operations vice president explains, "We saw generators on the right side of the congestion change their bids from \$50 a megawatt-hour to \$150 immediately after there was a clog in the line." [LAT December 9, 2000; OCR March 25, 2001]

For example, on January 17, 2001, Duke Energy announced a "malfunction" at its 1,000-megawatt facility at Morro Bay, California. At the same time a cold snap in the Pacific Northwest was reducing imports across the Oregon border. Cal ISO began desperately calling generators, asking them to bring plants online. Duke Energy had an idle gas fired plant in Chula Vista that could be quickly brought on-line. As blackouts began to roll across the state, Duke officials offered to fire up the unit for the extraordinary price of \$3,880 per megawatt-hour. State officials were forced to make the purchase. During investigative hearings later that year, five Chula Vista plant operators stepped forward to claim that their plant sat idle during blackouts for no apparent reason. [WP August 21(a), 2001; SB July 6, 2001]

In March of 2001, Cal ISO submitted two reports to FERC documenting these problems. They contended that generators not only routinely withheld supply, but also collectively gamed the bidding system. The ISO estimated that strategic behavior on the part of generators accounted for as much as half of the increase in wholesale prices. For the year 2000, they concluded that this exercise of market power cost the state and its consumers as much as \$6 billion. Independent studies from Paul Joskow of MIT and others have since supported the assertion that generators closed plants to force up the price of power on the short-term market. Specifically, they point to a four-fold increase in scheduled and unscheduled plant shutdowns during the winter of 2000-2001 compared to the previous year. [WP August 21(b), 2001]

The New York Times compiled profit estimates for generating and marketing companies according to year 2000 3<sup>rd</sup> and 4<sup>th</sup> quarter earnings per share. Prominent players in California's market, such as Duke Energy, Enron, Reliant, Calpine, and Dynegy, were among the companies. For every firm earnings per share in the 3<sup>rd</sup> quarter of 2000 were well above 1999 earnings. For some, the increase was quite dramatic. Dynegy saw

earnings per share rise from 15 cents to 55 cents, while Calpine's earnings rose from 19 to 48 cents per share. [NYT January 12, 2001]

The revenues generated from old plants - the plants sold off as "stranded" costs - were equally dramatic. In August of 2000, "Energy Insight Today" compared how much individual California power plants increased earnings over the previous year. The Pittsburg power plant, sold by PG&E to Southern Energy, generated \$106.6 million in revenue compared to \$21.6 million in revenue in 1999. PG&E's Moss Landing plant revenues jumped from \$49 million to \$238 million after its sale to Duke Energy. SCE's Ormond Beach plant, now owned by Reliant, increased revenues from \$17.3 million to \$90.5 million. [LAT December 9, 2000]

### **Making Matters Worse: The Failed Response to the Crisis**

Rather than attacking this problem of market manipulation, regulators imposed a solution that further exacerbated the energy crisis. As wholesale prices increased, California's utilities were forced to purchase power on the spot market. However, with the exception of SDG&E's experiment in 1999, rate caps had prevented the utilities from transferring such costs to consumers. PG&E and SCE, were never permitted to pass along cost increases to consumers and quickly went from earning billions toward "stranded" costs to incurring enormous debt. [WP August 21(a), 2001]

That being said, both PG&E and SCE were criticized for squandering the billions they had collected prior to the summer of 2000. During the first nine months of the year, PG&E turned over nearly one-third of its cash flow to its parent company, PG&E Corporation, while Edison allegedly transferred as much as \$4.8 billion to its parent company. Executives cashed in stock options as they warned the public about the possibility of bankruptcy. When the utilities began to hemorrhage funds, no money was transferred back from the parent companies to cover debts. On April 6, 2001, PG&E filed for Chapter 11 bankruptcy protection, stating it had incurred \$8.9 billion in debt. SCE negotiated with the state for a financial bailout. Eventually, the utilities found it difficult to secure the credit necessary to purchase and provide power. [SDUT January 31, 2001; SFC January 31, 2001; SFC February 1, 2001; LAT January 2, 2001; WP August 21(a), 2001]

If consumers had switched in large numbers to generating companies as power providers, the utilities might not have been in such a bind. However,

since consumers were promised that their bills would be reduced regardless of which electric company they selected, there was little incentive to switch. By December of 2000, less than 2 percent of homeowners, 5 percent of small businesses, and 13 percent of industrial customers had switched providers.

Even if consumers had been willing to switch, most generating companies pulled out of the residential service market in the earliest months of deregulation. Direct access for residents and small business was cancelled, and the California's Large Energy Consumers Association, one of the initial lobbyists for deregulation, found that only their largest consumers were saving money - even among this group savings were only 2 to 5 percent. [SJMN November 30, 2000; DOE 2002; LAT December 9, 2000]

California's politicians and bureaucrats were placed in an awkward position. The CPUC allowed the utilities to increase retail rates several times. Governor Gray Davis initiated a series of attempts to bail out the utilities and fix the electricity market. For the utilities, he offered a "rescue plan" hinging on the state's purchase of their transmission systems. He also signed a series of legislation to: accelerate power plant approval, halt utility sales of power plants, require output of utility-owned plants to be supplied first to California consumers, authorize the Department of Water Resources to purchase electricity on behalf of the utilities, create a new authority to take over these responsibilities, and initiate a widespread conservation program. [DOE 2000]

The State was limited in what it could accomplish. Market manipulation stretched beyond the state's borders. Addressing such interstate spillovers falls within FERC's mandate to ensure "just and reasonable" wholesale electricity rates across the nation. The agency has considerable authority under the Federal Power Act of 1935 to regulate power companies. It can re-impose price regulation of just about any kind and force companies to return excess profits. Yet FERC seemed slow to respond.

California regulators estimated that generators had charged \$6.2 billion above competitive levels between May of 2000, and February of 2001. FERC, however, only required generators to refund a paltry \$124 million. The tentative and partial response led to questions regarding the agency's capacity and ideology. In an internal memorandum, a senior agency economist described the staff as "impotent in our ability to monitor, foster,

and ensure competitive electric power markets.” FERCs own commissioner, William Massey, stated that, “The problem with my agency is that we’re so carried away with the rhetoric of markets that we’ve gotten sloppy.” [WP August 21(a), 2001; LAT December 19, 2000; NYT March 23, 2001; NYT March 23, 2001; SFC March 11, 2001; NYT March 23, 2001]

A full investigation of price manipulation had been stymied by FERC’s inaction. Proving allegations would have required detailed analysis thousands of transactions to assess whether the prices offered for power were reasonable given the actual cost of generation. While most state utility commissions lack the ability to collect such data, FERC does have such authority. CPUC attempted to investigate the root cause of high prices, but came up against energy companies’ assertion of their right to protect “trade secrets.” CPUC chairwoman Loretta Lynch remarked, “We sent a ton of subpoenas. We are experiencing significant resistance from some energy companies.” [SJMN October 26, 2000]

FERC was criticized for failing to require power companies to file detailed sales reports. Such data would have been critical to the investigation of market manipulation. In the fall of 2000, FERC belatedly required generators and marketers to submit detailed data on transactions above \$150 per megawatt-hour. The commission warned it would force companies to refund profits associated with excess prices. It also stated its intent to examine pricing practices and strategies for withholding generating capacity.

However, FERC limited itself to a 60-day window of investigation. Staff members said the agency wanted to avoid a drawn out commitment of staff resources. Limiting its investigation to an analysis of maintenance schedules, FERC issued a February 2001 report, finding no evidence that power companies manipulated supply. FERC then ordered California to eliminate its requirement that the utilities to purchase electricity through the California Power Exchange. Instead, utilities were directed to purchase the vast majority of their power through long-term contracts. [NYT March 23, 2001; SFC March 11, 2001]

The California Power Exchange ceased operations on January 31, 2001 and FERC ordered a restructuring of Cal ISO. All the while, wholesale prices continued to be volatile. Finally, in June 2001, FERC unanimously

voted to impose caps on generator prices throughout the western grid. [WP August 21(a), 2001]

### **Unpacking the Crisis - A Question for Economic Theory**

“I sometimes think people involved during the last four years haven’t gotten the message that this isn’t a piece of cake. There were good economic reasons why you had regulation in the first place. You have to respect those realities. It’s not something you can snap your fingers and say you have a competitive market.”

Paul Joskow, Massachusetts Institute of Technology, as quoted in the Washington Post, August 21(a), 2001.

Joskow’s comment implies that economists are not uniformly supportive of deregulation. More importantly, it implies that economists may not even possess the empirically supported theory necessary for successful implementation of deregulation. On its face, this seems quite surprising. After all, faith in the benefits of free markets finds its justification in rigorously developed economic theory. Therefore it is necessary to look back at the theories of those, such as Milton Friedman and George Stigler, who sparked the deregulation movement. Such an examination can allow us to better understand how California’s energy crisis can be explained relative to their positive and normative theories.

The origin of “free market” ideology is generally traced back to the writings of Adam Smith [1937 (1775)]. The optimism of Adam Smith’s “invisible hand” fed an ideological literature extolling the virtues of the free market and competition. Modern arguments most closely associated with the deregulation movement include Friedrich Von Hayek’s *The Road to Serfdom* [1944], Milton Friedman’s *Capitalism and Freedom* [1962], and George Stigler’s “Theory of Economic Regulation” [1971]. The three were colleagues at the University of Chicago, and their influence on each other is clear in their writings.

Writing at the dawn of World War II, Hayek was convinced that central economic planning led to communism, fascism, or similarly devastating political ends. Hayek believed that collusion and political policy were responsible for monopolies. He argued that firms would always look to government to protect them from competitors. Therefore, government should be concerned only with the creation of the “rules of the game” necessary for competition to flourish and should only intervene for goods

that competition is clearly unable to provide [1994:81]. Significantly, he also argued that creating “rules” for competition was a complex task and not well understood.

Friedman simply extended Hayek's arguments of the collectivist threat into the post-war period. He downplayed the hazards of monopoly, convinced that such collusion could not be sustained. He was an outspoken advocate of deregulation, calling for the privatization of a broad range of activities from parks to the postal service.

Stigler, on the other hand, set out to prove Hayek's contention that firms use regulation to insulate themselves from competition. In his view, the process of “regulatory capture” was common. Therefore regulation can be seen as acquired by industry and designed primarily for its benefit. Industries exchange direct subsidies, control over market entry, and price controls with politicians seeking votes. The benefits received by industry inevitably fall short of the damage to the rest of the community, because political benefits are costly.

Hayek, Friedman, and Stigler helped build the intellectual underpinnings of the movement to deregulate a broad range of industries including energy. However, Stigler's work specifically detailed the quantitative impacts of trucking regulation and occupational licensing. He also drew attention to political protections in the petroleum, domestic airlines, education, banking, and savings and loan industries. The illustrations of Stigler and Friedman read like a hit list of agencies that have undergone reform over the past 30 years.

Unfortunately, the case of electricity deregulation in California suggests that proponents did not take Hayek's cautions to heart. His assertion that we know little about the “rules of the game” required to foster competition did not seem to be on the minds of those pushing for change. Even if national leaders, the Wilson Administration, the CPUC, and their advisors, such as CFEE, were looking to the works of Friedman or Stigler for guidance, they were clearly proceeding with an oversimplified theory of markets.

Friedman was almost blindly optimistic about the power of the “free market.” Although he accepts the notion of natural monopolies in theory, Friedman believes that unregulated monopolies are preferable to either a

regulated or public monopoly. His disregard for the impacts of collusion would imply that the state's energy crisis was not a crisis at all. Collusion, if it did indeed occur, was a brief discomfort on the road to freedom.

Stigler is more balanced on this point. His portrayal of the politician suggests that influential players such as Governor Wilson sought votes and resources. Traditional manufacturers, utilities, and generating companies were able to provide such political capital through campaign contributions. Stigler argues, the political system is expensive, noisy, and only loosely representative of the public's interest. Therefore, the market must have something better to offer.

Place Stigler's theory on the process of deregulation. Any regulated industry requires a set of rules that define its transition to a less regulated market. The same companies trying to "capture" regulators, to stave off competitors by creating favorable regulation, could just as easily use their influence to deregulate. "Deregulatory capture" is just as real a possibility as "regulatory capture".

Consistent with neoclassical economic theory, Stigler assumes that political actors behave rationally. Stigler's theory is replete with self-interested behavior on the part of industry attempting to co-opt politicians through the regulatory process. What is absent from Stigler's theory is an assumption of industry behavior in the absence of regulation.

Economists have also written extensively on the subject of market failure, in which rational competitive behavior by industry leads to inefficient markets, as with natural monopolies and oligopolies, or cartels. This raises the question, what rules or systems were the framers of deregulation encouraged to bypass or ignore that could have prevented price hikes and blackouts?

Loretta Lynch, Chairwoman of the California Public Utilities Commission recently likened California's deregulation of energy as the "wild, wild West." The moniker signifies the lawless behavior on the part of generating and marketing companies reaping windfall profits at the expense of consumers. The situation brings into question the institutional memory on the part of the State government and FERC. One only has to go back 60 years to recall the problems associated with unregulated energy markets. It is as if the architects of California's energy deregulation could not recall



the abuses of market power that led to the 1935 Public Utility Holding Company Act and the Federal Power Act.

Deregulation straddles the fence between the complex institutions of the market and the political system. At best, Stigler's theories are incomplete conceptions of the interplay between the political and economic order. At worst, they fuel an ideological movement toward the elusive, or perhaps unattainable goal of free markets. In fact, the field of "new institutional economics" has only recently taken up thoughtful study of these dynamics.<sup>7</sup>

### **Political Theory: "Policy Windows" open to crisis**

If the roots of California's energy crisis lie in the inability to fashion adequate "rules of the game", then we must look to political scientists to augment economic theory. John Kingdon's [1995] model of the US political system delivers a descriptive account of how political decision-making occurs. For Kingdon, a combination of factors is generally responsible for moving an item - such as the energy crisis - to prominence on the political agenda. He argues that the American political system is too fragmented to allow one actor to make major decisions. Indeed, the U.S. system was designed as a fragmented system with this in mind.

Studying any particular case of public policy requires evaluation of the key factors that came together to motivate change. There are processes constantly at work, but they do not flow according to a regular pattern. The confluence of supportive conditions is often accidental. Additionally, participants may possess only rudimentary knowledge of their goals and how to accomplish them. The process of change is more fluid than the rational-comprehensive or incremental models of political decision-making supported by some theorists.

Kingdon's model is consistent with the notion of a complex adaptive system. His basic structure is tied to Cohen, March, and Olsen's "Garbage Can Model of Organizational Choice" [1972]. Kingdon views the structure of this system as three separate streams: 1) problem recognition, 2) the "primeval soup" of policy, and 3) the political stream.

These three streams were visible in the making of California's energy crisis. The high price of energy was brought to Governor Wilson's attention. Staffers, lobbyists, utility executives, CFEA members, and regulators in the policy community came with their own pet ideas or axes to grind. In a

“primeval soup”, the British model for deregulation was taken seriously and others were dropped. The outcome depended largely on who was invited to various meetings or who bothered to show up. The political stream reflected shifting public opinion, a change of administration, and interest group campaigns. Governor Wilson had a desire to make a political splash and was looking to traditional manufacturers for ideas. At the same time, the state was in a recession, which limited the potential for new public investment. Combined with the political culture that brought about Proposition 13, these conditions defined a political stream conducive to deregulation.

The potential for a fundamental policy shift is created when these streams merge. To paraphrase Kingdon, the problem must be recognized, a solution must be seen as available, the political climate must be right for change, and constraints must not be sufficient to prohibit action [1995, 88]. Viewed more cynically, policy advocates wait for a problem to come along and provide an excuse to push their proposals. A change of administration often gives new proposals a chance. This provides what Kingdon refers to as the “policy window.” The window is open for only a short time. Once an item such as energy deregulation rises to the policy agenda, something must be done before attention turns to something else.

In this light, California’s energy crisis seems to have been predictable. The change of administration that brought Governor Wilson to office also solidified Republican control of the Senate. The Governor had a higher office in mind, but was faced with a recession, and known to listen to the concerns of manufacturers. Metrics easy to collect and understand, such as the price of electricity, demonstrated rising costs for this segment of industry. Recent legislation also suggested that the federal government would support deregulation. Finally, Wilson stated his preferences to the CPUC and the policy window was opened.

Based on the eventual outcome, one would think that the utilities would have objected to deregulation. However, the utilities were commanded by their parent companies. The parent companies took advantage of two promising options in their response to deregulation. The first option was to dispose of the utility in exchange for a lucrative national market in energy generation and trading, as in the case of PG&E. The second option was to hold on to the utility as a bargaining chip to reap more public funds from the state, as in the case of SCE. To say the utilities were victims of

deregulation is to miss the point. The parent companies' incentives were no different than those of Enron, Duke Energy, or Reliant.

Wilson's staff and regulators involved in setting up the key elements of deregulation were aware of the problem of high prices. They had settled on deregulation as their goal, but they did not have alternative proposals of their own ready to launch. Therefore, they were particularly beholden to generating companies, manufacturing interests, utilities and their parent companies. Deregulation was set up in a manner that satisfied these parties at the expense of the residential or small business consumer.

Kingdon argues that lower levels of partisanship, ideology and campaign visibility increase the power of interest groups. When the public is less engaged, vested interests become the key players [1995:47]. This characterization fits energy deregulation. If consumer representatives were invited to meetings early in the process, they did not have had much to say. Energy prices are important, but the topic can be both complex and boring. The easiest way to appease the consumer was to promise rate cuts.

Few grasped the significance of this legislation, and even fewer had a voice in the forums in which it was debated. Kingdon suggests that legislators are constantly striving to build a reputation, yet their job doesn't give them enough time to develop sufficient depth in any one subject to be anything other than a generalist. Senator Peace was already respected, ironically, as a generalist who could master complex issues, but his awareness of the problems that would ensue with implementation seems to have been minimal. In the words of one senior Assembly staffer, "The only one who got it right was crazy Diane Martinez. But she was crazy, so nobody paid any attention to her. Steve Peace was the smartest guy in the Legislature. Everybody knew that. So people paid attention to him. 'Peace says it's a good bill! Okay.'" [LAT, August 24, 2000]

### **Conclusion: Where were the Planners?**

California's energy crisis seems to have been devised and solved without the participation of planners. The pivotal moment in this drama took place when Governor Wilson began deregulation negotiations. At this time, one of Kingdon's *policy windows* was opened, and it stayed open until the bill was drafted. Additional bargaining took place as legislation was carried through the "Death March," but no alternatives were offered. The central roles in this drama belonged to the Governor, legislature, CPUC,

government staff, lobbyists, the utilities and their parent companies, CFEE, out-of-state energy companies and traditional manufacturers.

This raises a central question: Where were the planners? In simple terms, planners could be defined by their title. Thus, the Governor's Office of Planning and Research might have engaged planners in the process. During the deregulation of California's energy markets, industry leaders, politicians, and one remarkably influential advisory group – CFEE, held political power. It seems that no representatives from the Office of Planning and Research were invited to the bargaining table.

Responsibility for this lack of involvement could be placed on the shoulders of the planners themselves. Planners across the state missed an opportunity to avert crisis. Since we are inclined to think about the impact of current actions on future economic, social and spatial relationships, we should be in the forefront in terms of developing policies with lasting significance. Taken to a logical conclusion, the crisis that followed energy deregulation is an example of planning gone wrong, or to be exact, planning in absentia.

If planners are to avert crises, they must be in the right place, at the right time, with the right thing to say. Perhaps too much reliance upon technocratic or insular theories has done a disservice to planning. We have been looking internally to define ourselves through a discourse dominated by normative theory. This focus within the profession may have led us to lose sight of our place in the political world. Perhaps planners should reread Paul Davidoff's [1965] influential call for advocacy planning. This implies a broader definition of planners as servants to the public interest - wherever the public interest will take us. If our agencies are becoming irrelevant and our plans are gathering dust, we should move to new departments and don new titles to gain seats at the bargaining table.

Timing is also critical. The case of California's energy crisis suggests the need for positive theories aimed at the intersection of political and economic institutions. For example, Kingdon's depiction of political decision-making is informative and provides some guideposts for professional action. It can be used to interpret the political environment, identify when a situation is ripening for regulatory change, and to realize when to jump toward the "policy window".

Kingdon visualized a combination of abrupt changes separated by periods of incremental change. In this sense, his theories share much in common with those of Thomas Kuhn's *paradigm shifts* [1970] and Charles Lindblom's *science of muddling through* [1959]. In the biological sciences the model is referred to as *punctuated equilibrium* [Eldredge and Gould 1972]. However, Kingdon questions whether or not we are ever collectively striving for equilibrium in either evolution or politics. In Kingdon's theory, the policy "primeval soup" is shaken into abrupt change by a handful of policy entrepreneurs. Such people are both respected for their expertise and close to high-ranking officials. This access and knowledge of when to employ it is what makes them unique. Perhaps change could be best described as "punctuated incrementalism," and planners could visualize themselves as policy entrepreneurs.

However, even with good access and timing, having a clear and convincing message is important. Planners arguing for the public interest will likely be outnumbered by vested interests as they compete for the limited attention spans of political actors. If implementation raises concerns over a public crisis, then planners must be able to perceive the future implications of legislation while it is being crafted. This implies greater understanding of the regulatory management of infrastructure.

Looking back 100 years to the emergence of planning as a professional discipline provides insights. At the turn of the century urban planners were concerned about the role of infrastructure relative to society's ills. Consider the City Beautiful movement and its precursor, the movement to develop urban sanitation systems. There was a time when infrastructure occupied the core of our discipline.

Electricity remains a basic service, one of sectors of infrastructure forming the economic and spatial backbone of urban development. Yet the planning profession's current attention to infrastructure is focused almost entirely on transportation, with other sectors largely forgotten. Graduate level planning programs often provide a single course that leaps through vital infrastructure sectors such as power, telecommunications, water, and waste management. Such topics are inherently boring to politicians and hardly arouse public participation, yet they are vital to our communities and economic system. A single course could not possibly prepare planners to address regulatory reform in these fields, let alone grasp the latest technological advancements transforming infrastructure.

California's energy crisis left many Californians in the dark. It also left planners on the sidelines regarding this vital public good. Moving forward, planning must broaden its self-image to encompass more pro-active and powerful political roles. Positive planning theory would have to embrace studies of the market and polity, and normative theory would have to delve deeper into infrastructure regulation and such age-old economic topics as natural monopoly and oligopoly. Such involvement has the potential to shape deregulation for the betterment of all.

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### Endnotes

<sup>1</sup> Numerous facilities are owned and operated by the federal government, municipalities, cooperatives, and other entities, such as irrigation districts. However, private or investor-owned utilities generate and distribute about three quarters of the total electricity in the United States, and are the focus of this article.

<sup>2</sup> Qualifying facilities under PURPA were cogenerators or used renewable fuel sources, specializing in generation (without transmission or distribution). Cogenerators, also known as combined heat and power generators, are facilities that utilize heat for electricity generation and for another form of useful thermal energy (steam or hot water), for manufacturing processes or central heating [DOE 2000].

<sup>3</sup> Cogeneration refers to facilities that produce electricity on site for consumption in industrial processes and/or generate electricity from the by-products of industrial processes.

<sup>4</sup> Peace received more than \$300,000 in campaign contributions from utilities and others in the electricity industry between 1993 and 2000. Top contributors included Edison International, SDG&E, Sempra and PG&E. [SJM November 30, 2000; LAT December 9, 2000] Peace's former chief of staff, David Takashima had gone to work for Edison. He returned to help draft the deregulation bill, leaving again to become PG&E's director of governmental affairs. [SJM November 30, 2000; LAT December 9, 2000; OCR, August 9, 2000]

<sup>5</sup> Notably, hydroelectric facilities were not named for divestiture in AB 1890. At the time of this writing the issue of whether or not PG&E will be selling its many hydroelectric dams throughout the state remains a serious topic of debate. See the Sacramento Bee, "Fighting over the hydros: Should PG&E's liquid assets remain under PUC control?" published December 18, 2000.

<sup>6</sup> The total amount paid for these “stranded costs” amounted to \$16.2 billion [SJMN November 30, 2000]. However, the sale of generating plants turned out to be entirely profitable. PG&E sold its plants for \$1.5 billion (book value was \$981 million), and SCE sold its plants for \$1.2 billion (book value was \$677 million) [SB May 6, 2001]

<sup>7</sup> See the works of Douglass North (1991) and Oliver Williamson (1985, 1999).