California Electricity Crisis

Subjects: Others

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The California electricity crisis, also known as the Western U.S. energy crisis of 2000 and 2001, was a situation in which the United States state of California had a shortage of electricity supply caused by market manipulations and capped retail electricity prices. The state suffered from multiple large-scale blackouts, one of the state's largest energy companies collapsed, and the economic fall-out greatly harmed Governor Gray Davis's standing. Drought, delays in approval of new power plants,:109 and market manipulation decreased supply. This caused an 800% increase in wholesale prices from April 2000 to December 2000.:1 In addition, rolling blackouts adversely affected many businesses dependent upon a reliable supply of electricity, and inconvenienced many retail consumers. California had an installed generating capacity of 45 GW. At the time of the blackouts, demand was 28 GW. A demand-supply gap was created by energy companies, mainly Enron, to create an artificial shortage. Energy traders took power plants offline for maintenance in days of peak demand to increase the price. Traders were thus able to sell power at premium prices, sometimes up to a factor of 20 times its normal value. Because the state government had a cap on retail electricity charges, this market manipulation squeezed the industry's revenue margins, causing the bankruptcy of Pacific Gas and Electric Company (PG&E) and near bankruptcy of Southern California Edison in early 2001.:2–3 The financial crisis was possible because of partial deregulation legislation instituted in 1996 by the California Legislature (AB 1890) and Governor Pete Wilson. Enron took advantage of this deregulation and was involved in economic withholding and inflated price bidding in California's spot markets. The crisis cost between United States dollar 40 and $45 billion.:3–4

financial crisis deregulation energy crisis

1. Causes

1.1. Market Manipulation

As the FERC report concluded, market manipulation was only possible as a result of the complex market design produced by the process of partial deregulation. Manipulation strategies were known to energy traders under names such as "Fat Boy", "Death Star", "Forney Perpetual Loop", "Ricochet", "Ping Pong", "Black Widow", "Big Foot", "Red Congo", "Cong Catcher" and "Get Shorty".[1] Some of these have been extensively investigated and described in reports.

Megawatt laundering is the term, analogous to money laundering, coined to describe the process of obscuring the true origins of specific quantities of electricity being sold on the energy market. The California energy market allowed for energy companies to charge higher prices for electricity produced out-of-state. It was therefore advantageous to make it appear that electricity was being generated somewhere other than California.

Overscheduling is a term used in describing the manipulation of capacity available for the transportation of electricity along power lines. Power lines have a defined maximum load. Lines must be booked (or *scheduled*) in advance for transporting bought-and-sold quantities of electricity. "Overscheduling" means a deliberate reservation of more line usage than is actually required and can create the appearance that the power lines are congested. Overscheduling was one of the building blocks of a number of scams. For example, the *Death Star* group of scams played on the market rules which required the state to pay "congestion fees" to alleviate congestion on major power lines. "Congestion fees" were a variety of financial incentives aimed at ensuring power providers solved the congestion problem. But in the Death Star scenario, the congestion was entirely illusory and the congestion fees would therefore simply increase profits.

In a letter sent from David Fabian to Senator Boxer in 2002, it was alleged that:

> "There is a single connection between northern and southern California's power grids. I heard that Enron traders purposely overbooked that line, then caused others to need it. Next, by California's free-market rules, Enron was allowed to price-gouge at will."[2]

1.2. Effects of Partial Deregulation

On a federal level, the Energy Policy Act of 1992, for which Enron had lobbied, opened electrical transmission grids to competition, unbundling generation and transmission of electricity.[3]

On the state level, part of California's deregulation process, which was promoted as a means of increasing competition, was also influenced by lobbying from Enron, and began in 1996 when California became the first state to deregulate its electricity market.[4][5] Eventually a total of 40% of installed capacity – 20 gigawatts – was sold to what were called "independent power producers." These included Mirant, Reliant, Williams, Dynegy, and AES. The utilities were then required to buy their electricity from the newly created day-ahead only market, the California Power Exchange (PX). Utilities were precluded from entering into longer-term agreements that would have allowed them to hedge their energy purchases and mitigate day-to-day swings in prices due to transient supply disruptions and demand spikes from hot weather.

PG&E yard in *San Francisco.* https://handwiki.org/wiki/index.php?curid=1412205

Then, in 2000, wholesale prices were deregulated, but retail prices were regulated for the incumbents as part of a deal with the regulator, allowing the incumbent utilities to recover the cost of assets that would be stranded as a result of greater competition, based on the expectation that "frozen" rates would remain higher than wholesale prices. This assumption remained true from April 1998 through May 2000.

Energy deregulation put the three companies that distribute electricity into a tough situation. Energy deregulation policy froze or capped the existing price of energy that the three energy distributors could charge.[6] Deregulating the producers of energy did not lower the cost of energy. Deregulation did not encourage new producers to create more power and drive down prices. Instead, with increasing demand for electricity, the producers of energy charged more for electricity.[7] The producers used moments of spike energy production to inflate the price of energy.[7] In January 2001, energy producers began shutting down plants to increase prices.[7]

When electricity wholesale prices exceeded retail prices, end user demand was unaffected, but the incumbent utility companies still had to purchase power, albeit at a loss. This allowed independent producers to manipulate prices in the electricity market by withholding electricity generation, arbitraging the price between internal generation and imported (interstate) power, and causing artificial transmission constraints. This was a procedure referred to as "gaming the market." In economic terms, the incumbents who were still subject to retail price caps were faced with inelastic demand (see also: Demand response). They were unable to pass the higher prices on to consumers without approval from the public utilities commission. The affected incumbents were Southern California Edison (SCE) and Pacific Gas & Electric (PG&E). Pro-privatization advocates[*attribution needed*] insist the cause of the problem was that the regulator still held too much control over the market, and true market processes were stymied, whereas opponents of deregulation assert that the fully regulated system had worked for 40 years without blackouts.

1.3. Government Price Caps

By keeping the consumer price of electricity artificially low, the California government discouraged citizens from practicing conservation. In February 2001, California governor Gray Davis stated, "Believe me, if I wanted to raise rates I could have solved this problem in 20 minutes."[8]

Energy price regulation incentivized suppliers to ration their electricity supply rather than expand production. The resulting scarcity created opportunities for market manipulation by energy speculators.

State lawmakers expected the price of electricity to decrease due to the resulting competition; hence they capped the price of electricity at the pre-deregulation level. Since they also saw it as imperative that the supply of electricity remain uninterrupted, utility companies were required by law to buy electricity from spot markets at uncapped prices when faced with imminent power shortages.

When the electricity demand in California rose, utilities had no financial incentive to expand production, as long term prices were capped. Instead, wholesalers such as Enron manipulated the market to force utility companies into daily spot markets for short term gain. For example, in a market technique known as megawatt laundering, wholesalers bought up electricity in California at below cap price to sell out of state, creating shortages. In some instances, wholesalers scheduled power transmission to create congestion and drive up prices.

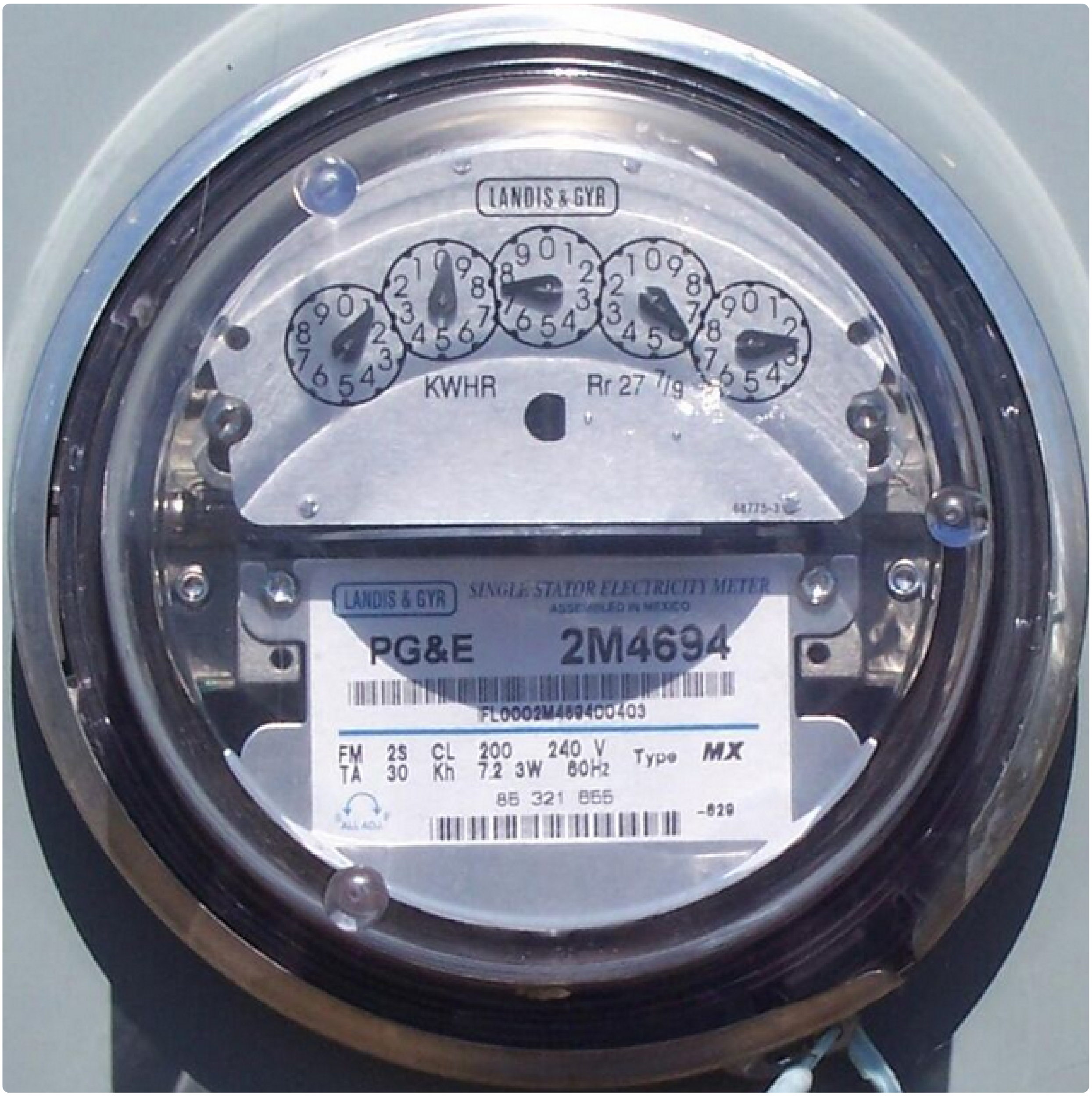
After extensive investigation, the Federal Energy Regulatory Commission (FERC) substantially agreed in 2003:[9]

> "...supply-demand imbalance, flawed market design and inconsistent rules made possible significant market manipulation as delineated in final investigation report. Without underlying market dysfunction, attempts to manipulate the market would not be successful."
> "...many trading strategies employed by Enron and other companies violated the anti-gaming provisions..."
> "Electricity prices in California’s spot markets were affected by economic withholding and inflated price bidding, in violation of tariff anti-gaming provisions."

The major flaw of the deregulation scheme was that it was an incomplete deregulation – that is, "middleman" utility distributors continued to be regulated and forced to charge fixed prices, and continued to have limited choice in terms of electricity providers. Other, less catastrophic energy deregulation schemes, such as Pennsylvania's, have generally deregulated utilities but kept the providers regulated, or deregulated both.

1.4. New Regulations

In the mid-1990s, under Republican Governor Pete Wilson, California began changing the electricity industry. Democratic State Senator Steve Peace was the Chairman of the Senate Committee on Energy at the time and is often credited as "the father of deregulation".[10] The author of the bill was Senator Jim Brulte, a Republican from Rancho Cucamonga.[11] Wilson admitted publicly that defects in the deregulation system would need fixing by "the next governor".



PG&E electric meter on Angel Island. https://handwiki.org/wiki/index.php?curid=1590700

The new rules called for the Investor Owned Utilities, or IOUs, (primarily Pacific Gas and Electric, Southern California Edison, and San Diego Gas and Electric) to sell off a significant part of their electricity generation to wholly private, unregulated companies such as AES, Reliant, and Enron. The buyers of those power plants then became the wholesalers from which the IOUs needed to buy the electricity that they used to own themselves.

While the selling of power plants to private companies was labeled "deregulation", in fact Steve Peace and the California legislature expected that there would be regulation by FERC which would prevent manipulation. FERC's job, in theory, is to regulate and enforce federal law, preventing market manipulation and price manipulation of energy markets. When called upon to regulate the out-of-state privateers which were clearly manipulating the California energy market, FERC hardly reacted at all and did not take serious action against Enron, Reliant, or any other privateers. FERC's resources are in fact quite sparse in comparison to their entrusted task of policing the energy market. Lobbying by private companies may also have slowed down regulation and enforcement.

1.5. Supply and Demand

California's population increased by 13% during the 1990s. The state did not build any new major power plants during that time, although existing in-state power plants were expanded and power output was increased nearly 30% from 1990 to 2001.

California's utilities came to depend in part on the import of excess hydroelectricity from the Pacific Northwest states of Oregon and *Washington (state)* . California's clean air standards favored in-state electricity generation which burned natural gas because of its lower emissions, as opposed to coal whose emissions are more toxic and contain more pollutants.

In the summer of 2001 a drought in the northwest states reduced the amount of hydroelectric power available to California. Though at no point during the crisis was California's sum of actual electric-generating capacity plus out-of-state supply less than demand, California's energy reserves were low enough that during peak hours the private industry which owned power-generating plants could effectively hold the State hostage by shutting down their plants for "maintenance" in order to manipulate supply and demand. These critical shutdowns often occurred for no other reason than to force California's electricity grid managers into a position where they would be forced to purchase electricity on the "spot market", where private generators could charge astronomical rates. Even though these rates were semi-regulated and tied to the price of natural gas, the companies (which included Enron and Reliant Energy) controlled the supply of natural gas as well. Manipulation by the industry of natural gas prices resulted in higher electricity rates that could be charged under the semi-regulations.

In addition, the energy companies took advantage of California's electrical infrastructure weakness. The main line which allowed electricity to travel from the north to the south, Path 15, had not been improved for many years and became a major bottleneck point which limited the amount of power that could be sent south to 3,900 MW. Without the manipulation by energy companies, this bottleneck was not problematic, but the effects of the bottleneck compounded the price manipulation by hamstringing energy grid managers in their ability to transport electricity from one area to another. With a smaller pool of generators available to draw from in each area, managers were forced to work in two markets to buy energy, both of which were being manipulated by the energy companies.

The International Energy Agency estimates[12] that a 5% lowering of demand would result in a 50% price reduction during the peak hours of the California electricity crisis in 2000/2001. With better demand response the market also becomes more resilient to intentional withdrawal of offers from the supply side.

2. Some Key Events

Rolling blackouts affecting 97,000 customers hit the San Francisco Bay area on June 14, 2000, and San Diego Gas & Electric Company filed a complaint alleging market manipulation by some energy producers in August 2000. On December 7, 2000, suffering from low supply and idled power plants, the California Independent System Operator (ISO), which manages the California power grid, declared the first statewide Stage 3 power alert, meaning power reserves were below 3 percent. Rolling blackouts were avoided when the state halted two large state and federal water pumps to conserve electricity.[13]

Most notably, the city of Los Angeles was unaffected by the crisis because government-owned public utilities in California (including the Los Angeles Department of Water & Power) were exempt from the deregulation legislation and sold their excess power to private utilities in the state (mostly to Southern California Edison) during the crises. That enabled much of the greater Los Angeles area to suffer only rolling brown-outs rather than long term black outs suffered in other parts of the state.[14]

On December 15, 2000, the Federal Energy Regulatory Commission (FERC) rejected California's request for a wholesale rate cap for California, instead approving a "flexible cap" plan of $150 per megawatt-hour. That day, California was paying wholesale prices of over $1400 per megawatt-hour, compared to $45 per megawatt-hour average one year earlier.

On January 17, 2001, the electricity crisis caused Governor Gray Davis to declare a state of emergency. Speculators, led by Enron Corporation, were collectively making large profits while the state teetered on the edge for weeks, and finally suffered rolling blackouts on January 17 & 18. Davis was forced to step in to buy power at highly unfavorable terms on the open market, since the California power companies were technically bankrupt and had no buying power. The resulting massive long term debt obligations added to the state budget crisis and led to widespread grumbling about Davis's administration.

3. Consequences of Wholesale Price Rises on the Retail Market

As a result of the actions of electricity wholesalers, Southern California Edison (SCE) and Pacific Gas & Electric (PG&E) were buying from a spot market at very high prices but were unable to raise retail rates. A product that the IOU's used to produce for about three cents per kilowatt hour of electricity, they were paying eleven cents, twenty cents, fifty cents or more; and, yet, they were capped at 6.7 cents per kilowatt hour when charging their retail customers. As a result, PG&E filed bankruptcy, and Southern California Edison worked diligently on a workout plan with the State of California to save their company from the same fate.[15]

PG&E and SCE had racked up $20 billion in debt by Spring of 2001 and their credit ratings were reduced to junk status. The financial crisis meant that PG&E and SCE were unable to purchase power on behalf of their customers. The state stepped in on January 17, 2001, having the California Department of Water Resources buy power. By

February 1, 2001 this stop-gap measure had been extended and would also include SDG&E. It would not be until January 1, 2003 that the utilities would resume procuring power for their customers.

Between 2000 and 2001, the combined California utilities laid off 1,300 workers, from 56,000 to 54,700, in an effort to remain solvent. SDG&E had worked through the stranded asset provision and was in a position to increase prices to reflect the spot market. Small businesses were badly affected.

According to a 2007 study of Department of Energy data by Power in the Public Interest, retail electricity prices rose much more from 1999 to 2007 in states that adopted deregulation than in those that did not.[16]

4. Involvement of Enron

One of the energy wholesalers that became notorious for "gaming the market" and reaping huge speculative profits was Enron Corporation. Enron CEO Kenneth Lay mocked the efforts by the California state government to thwart the practices of the energy wholesalers, saying, "In the final analysis, it doesn't matter what you crazy people in California do, because I got smart guys who can always figure out how to make money." The original statement was made in a phone conversation between S. David Freeman (Chairman of the California Power Authority) and Kenneth Lay in 2000, according to the statements made by Freeman to the Senate Subcommittee on Consumer Affairs, Foreign Commerce and Tourism in April[17] and May 2002.[18]

S. David Freeman, who was appointed Chair of the California Power Authority in the midst of the crisis, made the following statements about Enron's involvement in testimony[18] submitted before the Subcommittee on Consumer Affairs, Foreign Commerce and Tourism of the Senate Committee on Commerce, Science and Transportation on May 15, 2002:

> "There is one fundamental lesson we must learn from this experience: electricity is really different from everything else. It cannot be stored, it cannot be seen, and we cannot do without it, which makes opportunities to take advantage of a deregulated market endless. It is a public good that must be protected from private abuse. If Murphy's Law were written for a market approach to electricity, then the law would state 'any system that can be gamed, will be gamed, and at the worst possible time.' And a market approach for electricity is inherently gameable. Never again can we allow private interests to create artificial or even real shortages and to be in control.
>
> "Enron stood for secrecy and a lack of responsibility. In electric power, we must have openness and companies that are responsible for keeping the lights on. We need to go back to companies that own power plants with clear responsibilities for selling real power under long-term contracts. There is no place for companies like Enron that own the equivalent of an electronic telephone book and game the system to extract an unnecessary middleman’s profits. Companies with power plants can compete for contracts to provide the bulk of our power at reasonable prices that reflect costs. People say that Governor Davis has been vindicated by the Enron confession."

Enron eventually went bankrupt, and signed a US$1.52 billion settlement with a group of California agencies and private utilities on July 16, 2005. However, due to its other bankruptcy obligations, only US$202 million of this was expected to be paid. Ken Lay was convicted of multiple criminal charges related to the California energy crisis on May

25, 2006, but he died on July 5 of that year before he could be sentenced. Because Lay died while his case was on federal appeal, his conviction was vacated and his family was allowed to retain all his property.

Enron traded in energy derivatives specifically exempted from regulation by the Commodity Futures Trading Commission. At a Senate hearing in January 2002, Vincent Viola, chairman of the New York Mercantile Exchange – the largest forum for energy contract trading and clearing – urged that Enron-like companies, which don't operate in trading "pits" and don't have the same government regulations, be given the same requirements for "compliance, disclosure, and oversight." He asked the committee to enforce "greater transparency" for the records of companies like Enron. In any case, the U.S. Supreme Court had ruled "that FERC has had the authority to negate bilateral contracts if it finds that the prices, terms or conditions of those contracts are unjust or unreasonable." Nevada was the first state to attempt recovery of such contract losses.

5. Handling of the Crisis

5.1. Governor Gray Davis

Perhaps the heaviest point of controversy is the question of blame for the California electricity crisis. Former Governor Gray Davis's critics often charge that he did not respond properly to the crisis, while his defenders attribute the crisis to the power trading fraud and corporate accounting scandals and say that Davis did all he could considering the fact that the federal government, not states, regulate interstate power commerce.

In a speech at UCLA on August 19, 2003, Davis apologized for being slow to act during the energy crisis, but then forcefully attacked the Houston-based energy suppliers: "I inherited the energy deregulation scheme which put us all at the mercy of the big energy producers. We got no help from the Federal government. In fact, when I was fighting Enron and the other energy companies, these same companies were sitting down with Vice President Cheney to draft a national energy strategy."

Signs of trouble first cropped up in the spring of 2000 when electricity bills skyrocketed for customers in San Diego, the first area of the state to deregulate. Experts warned of an impending energy crisis, but Governor Davis did little to respond until the crisis became statewide that summer. Davis began asking the federal regulator FERC to probe possible price manipulation by power suppliers as early as August 2000. Davis would issue a state of emergency on January 17, 2001, when wholesale electricity prices hit new highs and the state began issuing rolling blackouts.

Some critics, such as Arianna Huffington, alleged that Davis was lulled to inaction by campaign contributions from energy producers.[19] In addition, the California State Legislature would sometimes push Davis to act decisively by taking over power plants which were known to have been gamed and place them back under control of the utilities, ensuring a more steady supply and slapping the nose of the worst manipulators . Meanwhile, conservatives argued that Davis signed overpriced energy contracts, employed incompetent negotiators, and refused to allow prices to rise for residences statewide much like they did in San Diego, which they argue could have given Davis more leverage against the energy traders and encouraged more conservation.[20] More criticism is given in the book *Conspiracy of Fools*, which gives the details of a meeting between the governor and his officials; Clinton Administration Treasury officials; and energy executives, including market manipulators such as Enron, where Gray Davis disagreed with the treasury officials and energy executives. They advised suspending environmental studies to build power plants and a small rate hike to prepare for long-term power contracts (Davis eventually signed overpriced ones, as noted above), while Davis supported price caps, denounced the other solutions as too politically risky, and allegedly acted rudely.[21] The contracts Davis signed locked Californians into high electric costs for the next decade.[22] As of October 2011 electric rates in California had yet to return to pre-contract levels.

The crisis, and the subsequent government intervention, have had political ramifications, and is regarded as one of the major contributing factors to the 2003 recall election of Governor Davis.

On November 13, 2003, shortly before leaving office, Davis officially brought the energy crisis to an end by issuing a proclamation ending the state of emergency he declared on January 17, 2001. The state of emergency allowed the state to buy electricity for the financially strapped utility companies. The emergency authority allowed Davis to order the California Energy Commission to streamline the application process for new power plants. During that time, California issued licenses to 38 new power plants, amounting to 14 gigawatts of electricity production when completed.

5.2. Arnold Schwarzenegger

On May 17, 2001, future Republican governor Arnold Schwarzenegger and former *Los Angeles* Mayor Republican Richard Riordan met with Enron CEO Kenneth Lay at the Peninsula Beverly Hills Hotel in Beverly Hills. The meeting was convened for Enron to present its "Comprehensive Solution for California," which called for an end to federal and state investigations into Enron's role in the California energy crisis.[23][24][25]

On October 7, 2003, Schwarzenegger was elected Governor of California to replace Davis.

Over a year later, he attended the commissioning ceremony[26] of a new Western Area Power Administration (WAPA) 500 kV line remedying the aforementioned power bottleneck on Path 15.

5.3. National Energy Development Task Force

Vice President Dick Cheney was appointed in January 2001 to head the National Energy Development Task Force. In the spring of that year, officials of the Los Angeles Department of Water and Power met with the Task Force, asking for price controls to protect consumers. The Task Force refused, and insisted that deregulation must remain in place.

5.4. Federal Energy Regulatory Commission

The Federal Energy Regulatory Commission (FERC) was intimately involved with the handling of the crisis from the summer of 2000. There were in fact at least four separate FERC investigations.[27]

- The Gaming Case, investigating general allegations of manipulation of the Western energy markets.
- The Enron Western Markets Investigation, FERC Docket Number PA02-2, specifically investigating the involvement of Enron and other companies in manipulating the energy markets.[27]

- The Refund Case, involving wide-ranging recovery of illegal profits made by some companies during the crisis.
- The Economic Withholding and Anomalous Bidding Case.[28]

On August 17, 2013, the British Columbia company Powerex agreed to a $750 million refund as a settlement over charges of manipulating electricity prices during 2000.[29]

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