

## Should States Restructure Their Electricity Sectors? Lessons from California and Pennsylvania

*By Timothy J. Considine and Andrew N. Kleit\**

Five years ago restructuring efforts in several states promised to unshackle electricity firms from the dead hand of regulation, creating efficiency gains and price reductions similar to those experienced in transportation, telecommunications, and other deregulated industries. Today, with the ongoing problems in California, restructuring is no longer perceived as a panacea. In this brief essay, we discuss the motivation behind restructuring, the course of restructuring in California and Pennsylvania, and the lessons learned from these two states.

### Why Restructure?

Oddly enough, proponents of restructuring have a difficult time articulating why restructuring is a good idea, beyond ideological references to the efficiencies of free markets. There are two basic motivations for the recent wave of restructuring.

First, restructuring frees electricity generators from rate of return regulation. Generators thus have important incentives to cut costs, which will result in lower prices for consumers in the long run. Moreover, in areas with excess capacity, competition will naturally decrease the price of power.

Second, restructuring eliminates the monopoly on retailing held by local distribution companies. In a properly restructured market, any number of providers can compete on both price and quality of service when offering retail electricity to consumers.

We shall argue that policies designed to recover stranded costs actually impede competition at the retail level. Stranded costs are the non-remunerative investments electric utilities made in generation capacity during the regulated era. The compromises that enabled passage of restructuring legislation allowed utilities to recover their stranded costs in return for retail price ceilings during this transition period. These ceilings, however, interfere with the effective operation of a retail market for electricity.

### The California Experience

The details of the California restructuring plan are well known, so only a brief description will be made here. Generators were deregulated and, for market power reasons, incumbent producers were required to sell off half of their generation capacity. The restructuring plan required most power to be bought and sold in a wholesale power exchange called "POOLCO," based on one previously used in Britain. Beginning January 1, 1998, residential customers of the investor owned utilities received a 10 percent reduction in their monthly bills. Consumer rates include a distribution and transmission charge, a generation charge, other miscellaneous charges, and a competitive transition charge (CTC)

\* Timothy J. Considine and Andrew N. Kleit are with the Department of Energy, Environmental, and Mineral Economics, The Pennsylvania State University. This paper is part of a study funded by the Appalachian Regional Commission. Emails: cpw@psu.edu and ank1@psu.edu, respectively.

that was used to pay off stranded costs. For example, a customer of Southern California Edison on average paid 12.7 cents per kilowatt hour in 1999 (see Table 1). More than 4.6 cents of that reflected a still-regulated transmission and distribution charge. The generation charge was approximately 3.2 cents. Other miscellaneous charges amount to a shade over 2.3 cents. The CTC picked up the remainder, 2.5 cents per kilowatt hour. Consumer rates were frozen until stranded costs were paid off.

**Table 1**  
**Average Electricity Rates for Southern California Edison Co., 1998-2001**

Component	Average rate in cents per kilowatt hours			
	1998	1999	01/2000-04/2000	05/2000-02/2001
Generation Charge	3.34	3.22	3.78	17.36
Transmission & Distribution	3.34	4.64	5.66	3.44
CTC	3.28	2.50	1.18	-10.11
Other Charges	2.76	2.31	2.10	2.17
<b>Amount paid per month</b>	<b>12.72</b>	<b>12.67</b>	<b>12.72</b>	<b>12.86</b>

Note that the CTC charge is a residual set equal to the fixed price to consumers minus transmission, distribution, and other charges, and minus the fluctuating generation price. As long as the generation price did not go "too high" the CTC would remain positive, and the system would be financially stable.

In this system, generators have important incentives to cut costs, one of the two objectives of restructuring. But where did this leave retailing? In the California system, retailing was left absolutely nowhere. Any consumer who chose to purchase power from a retailer other than the local distribution company received a rebate equal to the POOLCO price. This meant that a retailer could not show a profit unless it was able to purchase power below the POOLCO price for power, which was close to impossible. For example, if the POOLCO price was 3.5 cents per kilowatt-hour, 3.5 cents was the amount of the rebate. Since no one would sell to retailers at less than 3.5 cents when they could get this amount in the POOLCO market, no electricity retailer could make money in California. Thus, the California system precluded retail competition until stranded costs were paid off.

Unfortunately, by the summer of 2000, the California system unraveled. The chief culprit was the lack of electricity supply. For over a decade, it had been extremely difficult to site new power plants in California. The state had become highly dependent on hydroelectric sources, power from natural gas plants, and imported power. In the summer of 2000 lack of rain and snow from the previous winter greatly reduced the availability of hydroelectric resources. Rising natural gas prices also increased the cost of gas-fired generation, which provides more than forty percent of the total generation capacity in California. Perhaps combined with the exercise of market power by suppliers, the result was a price explosion. The wholesale price of electricity rose over ten fold.

Distribution companies, with their retail prices fixed by law, saw their generation prices not only drive their CTC to zero, but negative, eating up their existing equity base. The

problem was further exacerbated by the requirement that distribution companies buy their power on the spot market through the POOLCO. Distribution companies, unable to shield themselves against price risk though the use of long-term contracts, and unable to raise retail rates because of regulation, had to suffer the full financial exposure of the price increase.

By January 2001, the major distribution companies in California were essentially bankrupt. Power generators refused to sell these companies power for fear of non-payment, and widespread blackout resulted. The state of California stepped in, eliminated the POOLCO, and subsidized electricity markets, at a cost of approximately \$40 million per day. At this writing, the state is only now beginning to raise electricity prices.

Restructuring did not cause the power supply shortage in California. But the form of restructuring – with generators and distributors essentially required to buy on the spot market – exposed them to the risk of using spot markets. The regulated retail prices meant that distribution companies held all the risk. When prices exploded, bankruptcy and blackouts were the natural response. The state of California, by not allowing prices to rise, at least at this point in time, is only exacerbating the problem.

### The Pennsylvania Experience

The Pennsylvania restructuring plan was similar to the California plan in several ways. Generation was freed from rate of return regulation, and power was sold in a largely unregulated market. Generation divestitures were not required, though many took place voluntarily. Prices to consumers were lowered 10 percent, and capped for the period of stranded cost recovery. Again, prices to consumers were set as a total of transmission, distribution, generation, and CTC charges (see Table 2).

Table 2

Average Electricity Rates for Selected Pennsylvania Utilities, 1999

Component	Rate in cents per kilowatt hours		
	PECO	GPU	Allegheny
Generation Charge	5.75	4.00	3.22
Transmission & Distribution	4.57	3.03	3.06
Transition Charge	1.82	0.73	0.64
<b>Amount paid per month</b>	<b>12.14</b>	<b>7.76</b>	<b>6.92</b>

There were, however, two important differences from the California structure. First, power could be sold on a spot or long-term basis, whatever the parties thought was in their best interest. Second, consumers choosing a supplier other than their local distribution company were given “shopping credits” set administratively by the state Public Utility Commission. Shopping credits were set originally above the generation cost component of retail prices, which allowed retailers to enter the market.

Electricity retailers did enter the market, selling at one point up to 10 percent of customers. Of special significance is the success of Green Mountain Power, which has sold environmentally friendly power to customers at a premium price. Unfortunately, as market prices have risen (and shopping credits remained fixed), retailers have been squeezed

out of the market.

Wholesale electricity prices have risen in Pennsylvania in the last two years by approximately 25 percent. Power in Pennsylvania comes largely from coal-fired generators, with natural gas plants representing only the marginal suppliers. New power plants are being allowed into the system, though the required administrative and regulatory procedures slow this process down.

The Pennsylvania price cap, just like its California equivalent, does create the possibility of a market meltdown if wholesale prices rise too high. But that has not happened, and is not likely to. The supply of power in Pennsylvania is very stable, and is not highly dependent on the price of natural gas and on natural factors, such as the amount of rainfall. Summer peaking prices can get very high, but only for relatively short periods of time.

### Can Electricity Restructuring Survive?

The California experience brings clear lessons. If power markets are going to be restructured, retail prices must be allowed to reflect the opportunity cost of power. Further, if restructuring is about allowing contractual freedom, power should be allowed to be sold in any form trading parties choose, not just on the spot market.

The Pennsylvania example shows that electricity restructuring can survive, and survive with some success. But one issue that comes out of both California and Pennsylvania is the failure of retail suppliers to enter the market, and to survive there. We suggest that this is in large part due to price caps required by regulators in both states. Potential retailers must compete against a regulated price that greatly limits their profit opportunities. Only when price caps are eliminated in Pennsylvania do we expect to see a burgeoning retail market for power.

Should other states restructure? We suggest that the answer is a qualified, “yes”. But restructuring efforts should avoid as much as possible any type of price cap. In addition, advocates of restructuring should understand that generation efficiencies and a robust retail market take time to evolve.

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