

# ELECTRICITY DEREGULATION LIKELY TO BENEFIT CONSUMERS: LATER, IF NOT SOONER



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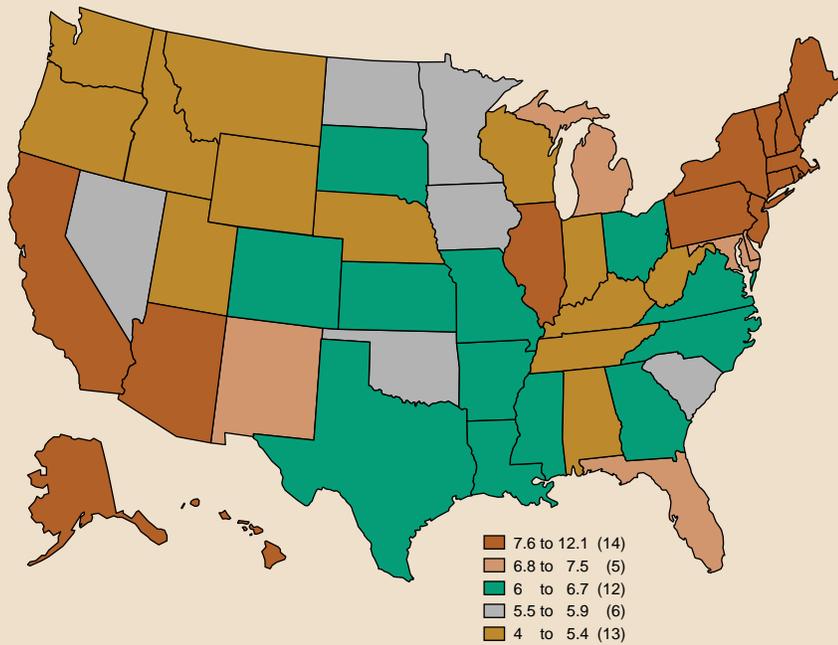
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**E**LECTRICITY MAY BE getting cheaper. Market forces rather than regulators will soon be setting electricity rates in some areas of the United States. A wave of regulatory and legislative change has called for deregulation of electricity markets in 18 states over the next few years, and many more states are considering similar changes. Meanwhile, at the national level, the administration has proposed deregulating electricity markets by 2003.

Although the United States has low electric rates and high reliability by international standards, the rates are quite uneven across the nation (*Chart 1*). Proponents of deregulation argue that competition will lower electric rates, particularly in the regions with high rates, and make them more uniform throughout the nation. The high-rate states seem to be expecting such an outcome, as the states with above-average electricity rates have been more inclined to deregulate (*Chart 2*). Whether such an outcome is realized depends greatly on what is done in the name of deregulation.

**CHART 1**  
**AVERAGE REVENUE PER KILOWATT-HOUR (IN CENTS)**



SOURCE: U.S. Energy Information Administration.

This article provides an overview of how deregulation could change the way electricity is produced and sold, the changes in competition and prices that are likely to result from deregulation, and the effect of deregulation on investors. System reliability, fuel mix and air quality are also briefly addressed.

## The U.S. Electricity Industry Today

Currently, most regions of the country are served by integrated electric utilities, each of which performs all four functions of the electricity industry—generation, transmission, distribution and marketing. Each utility generates most of its own electricity and buys some from other producers. It then ships the electricity from its generators over its high-voltage transmission lines to its substations. At the substations, the utility steps down the voltage and from there distributes the electricity over lower voltage lines to its customers.

Most of the integrated companies are publicly traded firms. Their electric rates are subject to regulation at the

state level, and in the typical process, rates are set to earn what the regulators deem to be a fair rate of return on prudent investments. In a few exceptional cases, state regulators have refused to allow a utility's rate base to reflect the costs of what they have judged to be poor investment decisions made by the utility.

The areas of the country with the highest electric rates typically have the highest cost generation facilities. The utilities owning these generation facilities invested in costly power plants, such as nuclear power plants. The costs of these investments are usually included in the utilities' rate bases, which are approved by state regulators. Many of these facilities were built during an era in which it was generally believed conventional energy prices would rise sharply over the foreseeable future.

In addition, various federal and, in some cases, state regulations compel the electric utilities to buy electricity from a variety of independent, high-cost producers at preferential rates. Most important among the producers receiving preferential rates are those using cogen-

eration or wind power to generate electricity. These regulations were justified on the basis of curbing oil imports, improving energy efficiency and reducing pollution.

It might seem that high-cost regions could reduce their electricity rates by purchasing electricity from low-cost regions, but transportation costs limit interregional electricity trade. Integrated companies buy and sell electricity from each other and exchange it over a nationwide grid of transmission lines, but transmitting electricity over long distances is expensive.

## Proposals for Change

Deregulation consists of opening one or more segments of the current system to competition. Some segments could remain regulated. Although deregulation proposals vary considerably, the most common ones include these elements:

- Electricity generation and marketing would be opened to competition.
- Transmission and distribution would remain regulated monopolies and become contract carriers like natural gas pipelines.
- Electric marketers would buy electricity from generators, sell it to customers and arrange for its transportation from the generator to the customer.
- The integrated utilities would spin off their deregulated activities as separate companies.
- Some independent high-cost generators would lose their preferential rates.

Under some proposals, only large industrial customers would buy their electricity from the electricity marketing firms. Residential customers would continue to buy electricity from their distributor, as has been the case with natural gas deregulation.

As promoted, deregulation would lower electricity prices by introducing competition in generation and marketing. In the short run, deregulation would allow electricity generated in low-cost facilities in adjacent regions to

come into high-cost regions over the national grid of transmission lines and be sold in direct competition with local suppliers. (High transmission costs would prevent much competition from distant facilities.) The resulting competitive pressure would reduce the prices that the owners of the high-cost facilities could charge, immediately lowering rates in the high-rate regions. Over the long run, the free entry of new low-cost competitors and the potential for new entrants should also help promote lower, competitive prices.

## Stranded Assets: An Obstacle to Deregulation

The treatment of high-cost generation facilities has been one of the major issues in deregulation. Under regulation, state regulatory authorities typically have set electricity rates to ensure that a utility's total revenues equal its total costs plus a fair market rate of return on plant investments. With the lower market prices for electricity that are expected after deregulation, owners

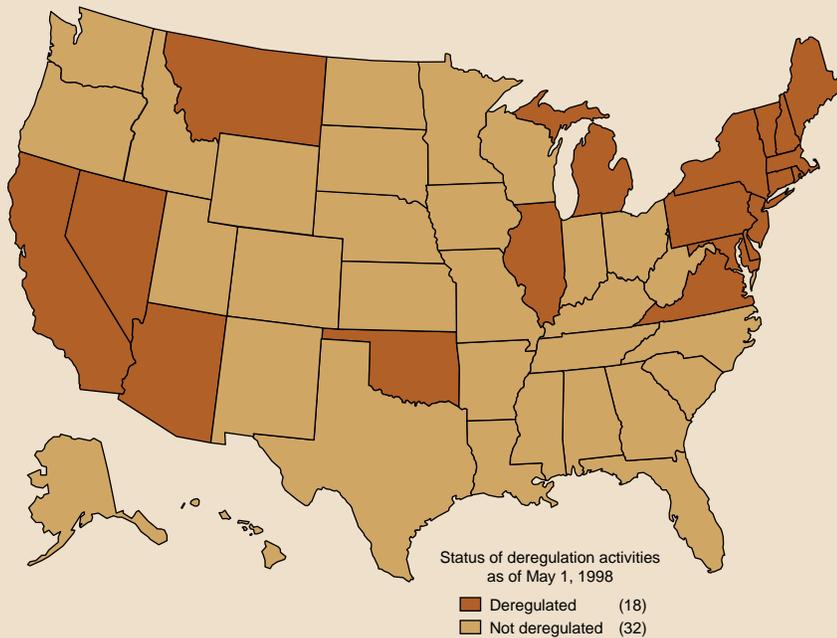
of existing high-cost facilities are likely to find that their fixed investment costs are no longer covered. In discussions of deregulation, these investments are commonly known as stranded assets. Estimates of stranded assets resulting from deregulation range from \$10 billion to \$500 billion.<sup>1</sup> The unknowns that influence these estimates are the degree of competition under deregulation, future natural gas prices and the timing of deregulation.

The issue of who will pay for these stranded assets has been one of the major stumbling blocks to deregulation in the very regions of the country with high electric rates. Seventeen of the 18 states that have deregulated have made some provisions for recovery of stranded assets.<sup>2</sup> These states used a variety of measures to distribute the costs of previous electricity plant investments.

In most states, the legislation permitting deregulation requires the customers benefiting from lower, competitive prices to compensate the owners of stranded assets by paying exit fees or transition charges on top of the newly competitive electric rates. Proponents of

*The treatment of high-cost generation facilities has been one of the major issues in deregulation.*

CHART 2  
STATE DEREGULATION ACTIVITY



SOURCE: U.S. Energy Information Administration.

## Choosing Reliability of Electricity Service

The ability to pay for reliability is not completely new. The U.S. Energy Information Administration (EIA) reports that utilities for a long time have allowed a few customers to tailor the level of reliability to fit their needs and budgets.<sup>1</sup> The customers generally outline a set of conditions under which their electric service may be interrupted in exchange for a lower rate.

New technologies may also play a part in system reliability. Individuals could choose reliability by responding to price schedules announced by the utility. Utilities could then vary prices over time based on supply and demand. In peak periods of electricity use, the price would be higher, and during periods of lower use, the price would fall. No customers would be denied electricity if they were willing to pay the market-clearing price. Such a system would reduce electricity use during peak periods. Telephone companies have used a similar pricing system for many years.

One company that is operating in states with pilot projects for electricity competition gives customers Internet access to reports on their hour-by-hour energy use and charges. The company also sells new refrigerator-sized power plants that businesses such as restaurants or small factories can use to avoid paying peak rates or losing power in outages.

Another possibility is for utilities to selectively interrupt just part of a customer's service, such as the electricity that goes to a major appliance, under circumstances agreed upon in the customer's contract. The EIA reports that some utilities already have the technology to do so.<sup>2</sup>

<sup>1</sup> EIA, "Performance Issues for a Changing Electric Power Industry" (visited May 5, 1998) <<http://www.eia.doe.gov/fuelelectric.html>>.

<sup>2</sup> See note 1.

this approach argue that the compensation scheme would allow society to begin to capture the benefits of competition and prevent future investment in high-cost facilities while compensating the stakeholders in the current system for accepting its abolition. Of course, customer payment of exit fees or transition charges as part of the electric bill would delay the hoped-for decline in effective electricity prices in those regions with the highest electric rates. Such fees were cited by Enron as one reason that its attempt to sell electricity to California households was relatively unsuccessful.

Several other ideas have been offered for the resolution of stranded assets. One proposal is to let taxpayers compensate investors for the capital losses that result from changes in regulation. But taxpayer compensation of shareholders who suffer losses as the result of changes in legislation is rare.

Another approach is to let the shareholders of the electric utilities and independent generators bear the costs if competitive pricing yields less than a normal return on their capital investments. Opponents of this approach

argue that the change in regulation amounts to a taking, which deserves compensation. Legally, they are probably wrong; there is no legal presumption that one may rely on continuing government regulation to earn a profit. Proponents of this approach argue that those who have invested in an industry in which the returns depend on continuing government regulation should have realized that they were taking a risk that government regulations could change and that the price they paid for their shares was lower to compensate for the risk.

Some argue further that electric companies deserve no compensation for their stranded assets *whether or not those companies should have anticipated deregulation*. Advocates of this view believe that stranded assets are the result of bad investment decisions (such as building nuclear power plants) made by electricity companies in the belief that, if the investment failed, pliant state regulatory agencies would permit these companies to recover their losses by raising rates charged to their customers. They argue that since the companies had no guarantee they would have

been reimbursed under the prederegulation regime, companies have no right to insist upon reimbursement in a deregulated environment.

Free market economists have taken positions in favor of shareholders bearing the costs of stranded assets and in favor of customer payment of exit fees or transition charges. Although some would prefer that shareholders bear the cost for the reasons discussed above, they also believe that some payment from customers may be a political necessity to introduce competition and prevent future investment in high-cost facilities. One important complication here is that many state pension funds seem to be heavily invested in electric utility stocks and may take sizable losses if a state proceeds with uncompensated deregulation.

## Concerns About Deregulation

Some analysts remain concerned that deregulation will result in monopolization rather than competition because transmission costs are high and firms will have locational advantages. Under the most common proposals, however, it seems that deregulation will result in a workable amount of competition. The outcome is likely to be one in which most firms have locational advantages resulting from high transmission costs but earn normal rates of return on their prudent investments. Shipment of electricity from neighboring regions and the entry or potential entry of low-cost generators will limit monopolistic pricing. The ability of customers to vote with their feet by moving to lower cost regions will also help foster competitive pricing.

Some individuals worry that the reliability of electricity provision will decline after deregulation. As an industry that has earned a regulated rate of return above the market average, the electric utility industry has had an incentive to overcapitalize. One result of that overcapitalization has been to provide more excess capacity (and reliability) than would exist in a competitive industry. Under deregulation, reliability is likely to be adjusted to levels preferred by the market. Those who want

considerable reliability will have an opportunity to pay for it (see box entitled “Choosing Reliability of Electricity Service”).

Another concern about deregulation is the potential effect on air pollution. Not much will happen initially to the fuel mix used or the air pollution produced in generating electricity. Firms investing in new electricity-generating capacity will have an incentive to use the lowest cost sources. Such investment favors the direct use of carbon-based fuels over wind power, cogeneration and nuclear energy, which could increase air pollution. On a pure cost basis, one might predict that coal (the fuel with the most potential for emissions) could become

more heavily used, but the U.S. Energy Information Administration (EIA) forecasts that most of the new electricity-generating capability added in coming years will be either combined-cycle gas turbine or combustion turbine/diesel technology.<sup>3</sup> Of course, such decisions will be greatly affected by changes in technology and environmental regulations.

## The Bottom Line

Proponents of deregulation argue that introducing competition will lower electric rates. The states with the highest cost electricity seem to be expecting

such an outcome because they have been the most aggressive in pursuing deregulation.

In the short run, deregulation would allow electricity generated in low-cost facilities in adjacent regions to be sent to high-cost regions over the national grid of transmission lines and to be sold in direct competition with local suppliers. The resulting competitive pressure would reduce the prices that the owners of the high-cost facilities could charge, immediately lowering rates in the high-rate regions. The short-run gains could be mitigated to some extent by state-imposed charges to compensate the owners of high-cost generation facilities. Over the long run, however, the high-cost generation facilities will be fully depreciated and the charges will be phased out. In addition, the free entry of new low-cost competitors and the potential for new entrants should also help promote lower, competitive prices.

Some critics have expressed concern about the possible development of unregulated monopolies, but the shipment of electricity from neighboring regions and the entry or potential entry of low-cost generators will limit the likelihood of monopolistic pricing. The ability of customers to vote with their feet by moving to lower cost regions will also help foster competitive pricing. In short, deregulation and the resulting competition should lower prices for customers over the long run even if gains are limited in the short run.

— Stephen P. A. Brown  
Sheila Dolmas

## Electricity Deregulation in the Southwest

Most of the Southwestern states have electricity rates close to the national average. All the states in the region are looking into electricity deregulation. Two states have moved forward with plans that would bring full competition to retail electricity markets by 2003.

With the highest electricity rates among the Southwestern states, Arizona was the quickest to move forward with electricity deregulation. Arizona issued a regulatory order in December 1996 to phase in retail electricity competition beginning in January 1999, with full competition by January 2003. The plan called for recovery of some stranded assets through exit fees.<sup>1</sup>

Despite having below-average electricity rates, Oklahoma passed a law in April 1997 that directs state officials to study and develop a framework to introduce retail electricity competition by July 2002. This law allows collection of transition charges over a three- to seven-year period to recover stranded assets. One limitation imposed by the state on these charges is that they must not cause the total price of electricity to rise above the price charged during the transition period.<sup>2</sup>

A large and diverse state, Texas has a mix of high- and low-cost electricity sources. Texas is still investigating electric utility deregulation.<sup>3</sup> Some areas of the state, such as Dallas/Fort Worth and Houston, could see substantially lower electric rates as a result of deregulation, while shareholders of the firms with stranded assets take sizable losses. Some such firms are trying to delay deregulation to gain time to recoup some of the stranded assets that might not be recovered under the final version of deregulation.

Louisiana, with electricity rates similar to those in Texas, is also investigating the implications of electricity deregulation. A 1997 legislative resolution created a study committee that will report on a variety of deregulation issues this year.<sup>4</sup>

In New Mexico, a pilot program is under way to introduce customer choice through the Texas–New Mexico Power Company’s Community Choice plan. However, no statewide competition has yet been introduced. The New Mexico Public Utility Commission (PUC) is promoting deregulation and in February submitted a proposal to the governor and legislature that would give the PUC authority to resolve deregulation issues. However, legislation on the issue is not expected to be introduced until next year.<sup>5</sup>

<sup>1</sup> EIA, “Performance Issues for a Changing Electric Power Industry” (visited May 5, 1998) <<http://www.eia.doe.gov/fueelectric.html>>.

<sup>2</sup> See note 1.

<sup>3</sup> See note 1.

<sup>4</sup> See note 1.

<sup>5</sup> See note 1.

## Notes

<sup>1</sup> EIA, “Changing Structure of the Electric Power Industry: An Update” (visited May 5, 1998) <<http://www.eia.doe.gov/fueelectric.html>>.

<sup>2</sup> Virginia’s restructuring law allows recovery of some stranded assets, but the details won’t be decided upon until 1999.

<sup>3</sup> See note 1.