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Getting Electricity Deregulation Right: How Other States and Nations Have Avoided California's Mistakes

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Executive Summary

Pennsylvania, which passed deregulation legislation at the same time as California, has fully implemented deregulation for all customers of electricity. Pennsylvania's customers have seen an average price decrease of 30 percent and an increase in service options, including "green," or renewable, power. Of the states that have deregulated wholesale and retail electricity markets, Pennsylvania has had the highest rate of customers switching to alternate generation providers, and Pennsylvania's customers express the highest satisfaction with their electricity services in the United States. Pennsylvania achieved this deregulation success through market-based default (or standard offer) prices, non-mandatory divestiture of generation, accelerated phase-in of all customers, and the use of financial instruments and regional markets. All of which encouraged alternate providers to enter the market and create real competition. Other states with early deregulation, such as Massachusetts and Rhode Island, did not experience Pennsylvania's success, and recently adopted policies that have succeeded in Pennsylvania, such as higher default prices to encourage entry.

Other nations began experimenting with electricity deregulation before the United States, most notably the United Kingdom, Australia, Argentina, Norway, and New Zealand. The United Kingdom's process has led to a 26 percent average price decrease and improved satisfaction with electricity service. Australia's national structure, with states responsible for deregulation decisions, resembles the structure of the United States more than the United Kingdom's centralized government effort. Since 1991, Australia's customers have experienced an average price decrease of 24 percent.

Texas also appears poised to succeed in realizing the benefits of electricity deregulation. While its legislation only went into effect in June 1999 and its pilot program to test the process starts in June 2001, many already

view Texas as a blueprint for deregulation success. It has incorporated the negative lessons from California with the successes of Pennsylvania, the United Kingdom, Australia and elsewhere to craft a process that gives new providers real incentives to enter and provide competitive services at lower prices to Texas consumers. The Texas legislation stipulates a "price to beat," or default price, that is six percent below the January 1999 average price; this price is low enough to generate price decreases for consumers but high enough for market entrants to see profit potential. The "price to beat" then becomes a retail cap that is effective for only five years. Also, Texas has not mandated full generation divestiture, but has followed the Pennsylvania model of restructuring studies, with the incumbent utility retaining no more than 20 percent of the generation capacity in their service area. The full retail market is set to open in January 2002. Finally, but perhaps most importantly, Texas will not establish a centralized electricity market like California's Power Exchange, but will instead allow buyers and sellers to transact how they see fit through for-profit financial markets. This flexibility will enable all market participants to limit their risk (and their consumers' risks) of energy price volatility, and to be creative in devising financial instruments to manage that risk.

California's experience is in no way representative of the consequences of deregulation; in fact, when done well, these success stories of other states show just how much benefit both consumers and innovative sellers can gain from electricity deregulation. Electricity deregulation can deliver consumer choice, consumer savings, and a business climate that encourages entrepreneurship.

Part 1

Introduction

The problems in California's electricity market are generating doubts about the benefits of electricity reform and deregulation. However, California's experience is not representative of the recent deregulation efforts in the United States or abroad. In many jurisdictions that have initiated electricity reform, consumers are finding that deregulation has given them more bang for their buck, while some other jurisdictions straggle along. Comparing their methods of reform shows why**.** Even the deregulation process in states that have not yet fully implemented restructuring reinforces the point that deregulation works when done well. California's chaotic implementation of electricity restructuring should not deter us from bringing the benefits of the market process to the electricity industry, as the following actual and anticipated successes indicate.

Inspired by the United Kingdom's generally successful regulatory reform, California, Pennsylvania, Rhode Island, and Massachusetts were the earliest states to initiate electricity deregulation, and they all did so differently. Pennsylvania stands out as the most successful effort in the United States to date, but there are valuable lessons California can learn from other states and even from deregulation successes in the United Kingdom and Australia.

Successful electricity deregulation efforts offer stark contrast to California. In Pennsylvania (as well as the United Kingdom and Australia):

- Prices fell dramatically—in Pennsylvania rates fell three percent in one year, saving customers $3 billion, and in the United Kingdom prices fell 10-15 percent, in Australia 24 percent;
- Many new companies entered the market to serve consumers—there are now 130 power supply companies operating in Pennsylvania, and nearly 600,000 customers have switched providers (that is nearly three times as many as switched in California in twice as long a period);
- Customers have more options for electricity services—20 percent of Pennsylvania customers who have switched chose a "green" (renewable) power option even though they had to pay more for it; and
- Customers are more satisfied with their electricity service—Pennsylvania customers are nearly 25 percent more likely to report they are satisfied with their electricity service than the national average.

Part 2

The Pennsylvania Story: Getting Deregulation Right at Home

Gov. Tom Ridge signed electricity deregulation legislation in Pennsylvania in December 1996.[1] Under this legislation consumers could choose an electricity generator to provide them with power, but transmission and distribution would still occur through regulated utility companies. Importantly, the legislation did not mandate that incumbent utilities divest their generating capacity: "Electric utilities are permitted to divest themselves of facilities or to reorganize their corporate structures, but unbundling of services [separating services, such as generation from distribution] is required."[2] Pennsylvania also used market models and forecasts to set the standard offer price, instead of setting a low standard offer price that would benefit incumbents. Pennsylvania rolled out deregulation in January 1999; by January 2000 all consumers in Pennsylvania could choose their electricity generator. This two-phase process brought all of the state's consumers competitive choices more quickly than in other states.

A. Market Changes

The legislation provided for retail price caps that vary by utility, depending on Public Utility Commission (PUC) approval. For the total power bill and the non-generation portion of the bill, the rate cap will remain in place for 54 months or until the utility in question has paid off its stranded costs. An additional rate cap stipulation states that for nine years or until stranded-cost recovery, the generation portion of the bill cannot exceed a PUC-approved rate for the generation.[3] The rate caps are embodied in the mandated rate reductions of four to 12 percent in 1999, depending on the utility.[4]

Although the legislation did not mandate that utilities sell their generation capacity, many did so as part of restructuring. For example, in December 2000 Duquesne Energy (DQE) completed its first phase of restructuring by selling its generation plants for $1.7 billion. This sale accelerated its recovery of stranded costs well beyond expectations, and helped DQE cut residential rates 21 percent in by 2002.[5]

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1 Electricity Generation Customer Choice & Competition Act, at puc.paonline.com/electric/elect_comp.asp.

2 DOE Energy Information Administration, "The Changing Structure of the Electric Power Industry 2000: An Update," October 2000, Chapter 8, www.eia.doe.gov/cneaf/electricity/chg_stru_update/chapter8.html.

3 General Assembly of Pennsylvania, Electricity Generation Customer Choice and Competition Act, House Bill 1509, 1995, puc.paonline.com/electric/elect_comp_act.asp.

4 DOE, Energy Information Administration, www.eia.doe.gov/cneaf/electricity/chg_str/retail.html.

5 DOE, Energy Information Administration, www.eia.doe.gov/cneaf/electricity/chg_str/retail.html.

Most of Pennsylvania's utilities also participate in the regional market that the Independent System Operator (ISO) PJM Interconnection operates.[6] PJM's market, in operation since 1927, acts as a clearinghouse for generator supply and wholesale demand. PJM members can enter bilateral contracts, and can purchase or sell power to meet unanticipated changes in demand through a spot market. These transactions enable the participants in electricity markets in the mid-Atlantic to manage price volatility and provide reliable service. By late 2001, all of Pennsylvania's utilities will be members of PJM, once DQE's and Allegheny Energy's memberships become final.

The PUC has continued to refine the deregulation framework, maintaining benefits for consumers but still creating an environment that was sufficiently attractive to potential entrants to generate true competition. For example, in July 2000 the PUC increased the default service rate that incumbents could charge, removing the incentive for customers to switch from entrants to incumbents for the summer months when rates typically rise.[7] Pennsylvania also allows competitive third-party metering service, which fosters competition.[8]

Pennsylvania stands out as the most successful effort in the United States to date, but there are valuable lessons California can learn from other states and even from deregulation successes in the United Kingdom and Australia.

B. Results of Changes

Pennsylvania Public Utility Commission Chairman John Quain told the *Wall Street Journal*, "We're pretty proud of what we've done, and it's worked out terrifically."[9] In the *Retail Electricity Deregulation (RED) Index* released in July 2000, Pennsylvania ranked the highest by far in progress toward customer choice.[10] The report ranks the states' deregulation success based on 18 attributes, and Pennsylvania ranked first in both their February and July 2000 studies. Only New York and Maine, who have recently made great strides in their deregulation, achieved scores close to Pennsylvania's.[11]

A good indicator of how well Pennsylvania has done in providing for electricity customer choice is the number of companies offering to serve state residents. Pennsylvania's deregulation plan was aggressive in allowing all state residents and businesses to choose electricity providers, and now 130 power suppliers compete for customers in the state.[12] In California, few power suppliers entered the market, and most of them soon left after failing to win many customers. Pennsylvania did not have the stringent retail price caps and competitive transition charge that protected incumbents and discouraged entry in California.

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6 www.pjm.com

7 DOE, Energy Information Administration, www.eia.doe.gov/cneaf/electricity/chg_str/tab5rev.html.

8 Malloy and Amer, *Retail Electricity Deregulation Index,* p.40.

9 Vogel, "Deregulation Foes," *Wall Street Journal*, August 15, 2000, p. A3.

10 Center for the Advancement of Energy Markets, July 2000, p. 20; www.caem.org.

11 In the July 2000 Index, Pennsylvania scored, 65 points, New York scored 64 points, and Maine scored 61 points.

12 Chris Kraul, "Charges of Gouging as Power Costs Skyrocket," *Los Angeles Times*, August 28, 2000. In Ohio, where retail competition began just this January 1, 2001, nearly 40 energy suppliers have applied to serve customers in the state. *Marketing Electricity Today*, November/December 2000, p.5.

In April 1999, more Pennsylvania customers were shopping for electricity than in other states, but the percentages were still small. By September 1999, however, 450,000 customers had switched, mostly around Philadelphia (PECO's service territory), and by July 2000 the number of consumers who switched providers had increased to 528,000. PECO, the eastern Pennsylvania incumbent, stated that 45 percent of its industrial load, 44 percent of commercial load, and 18 percent of residential load had switched to non-incumbent providers. Other incumbent utilities in the state reported somewhat smaller numbers, but the magnitude of the change was still substantial.

As of September 1999, Pennsylvania's electricity consumers were already starting to see benefits from generation deregulation:

> *In Hershey, Pennsylvania, total spending on electricity has fallen by more than $18,000 a month. Although Rhode Island was the first state to open its market to electricity competition, Pennsylvania seems to be doing it the best. Roughly 450,000 Pennsylvania customers, more than three times the number in California, have already switched to a different supplies . . . Supporters of competition claim it is not about lowering prices, but rather it provides a number of other benefits, including better service, new technology, and unexpected innovations.*[13]

Pennsylvania's deregulation plan was aggressive in allowing all state residents and businesses to choose electricity providers, and now 130 power suppliers compete for customers in the state.

The proof that customers are reaping benefits beyond cost savings is seen in the popular "green power" option, which has won 20 percent of the customers who have switched suppliers, though they pay a small premium for that option.[14]

> *For example, the largest wind farm in the eastern United States is now in Pennsylvania. GreenMountain.com, which completed the eight-turbine project in April 2000, is betting that customers will pay a slight premium to switch to power that is cleaner than the traditional source of Pennsylvania's electricity—coal . . .*[15]

Only with deregulation did this "green power" option become available to customers.

The Pennsylvania Department of Revenue has suggested benefits from deregulation beyond consumer choice and rate savings, predicting that electricity competition would generate 36,000 new jobs by 2004. [16]

> *Pennsylvania Secretary of Revenue Robert Judge, Sr., said the job creation is a result of a multiplier effect. That is, consumers and businesses have more money; therefore, they can buy more products and create more jobs, respectively. The report also suggests there will be greater sales tax and personal income tax collections as a result of restructuring. Secretary Judge said, "Our research confirms that while consumers of electricity will realize rate reductions, there are many other benefits to Pennsylvania through electric competition."*[17]

The political momentum for electricity deregulation comes from reducing prices, though, and not from the broader benefits of consumer choice, however high in value those might be. As Table 2 shows, Pennsylvania's 1998 deregulation dramatically accelerated the downward trend of prices as measured by revenue per kilowatt-hour.

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[13] DOE Weekly Summary, www.eren.doe.gov/electricity_restructuring/weekly/sep17_99.html.

[14] DOE Energy Information Administration, "The Changing Structure of the Electric Power Industry 2000: An Update," October 2000, Chapter 8, www.eia.doe.gov/cneaf/electricity/chg_stru_update/chapter8.html.

[15] Ibid.

[16] db.state.pa.us/ctc/data/20000804.002.htm.

[17] PR Newswire, August 4, 2000.

Table 1: Revenue Per Kilowatt Hour of Retail Electricity Sales, All Sectors and Suppliers (Cents Per Kilowatt Hour)				
	1999	1998	1993	1988
Pennsylvania	6.5	7.9	8.7	9.0

Source: 1988-1998 data: Energy Information Administration, Annual Electricity Overview 2000 State Profiles, http://www.eia.doe.gov/cneaf/electricity/st_profiles; *1999 data:* Energy Information Administration, Electric Power Annual 1999, http://www.eia.doe.gov/cneaf/electricity/epav1/fig15.html.

In the one year since deregulation for which there are data, prices fell almost 10 times faster than in the five years before deregulation and by far more than the price caps in the deregulation plan required.

Table 2: Average Annual Percent Change, Revenue Per Kilowatt Hour			
	1998-1999	1993-1998	1988-1993
Pennsylvania	-17.7%	-1.8%	-0.7%

Source: Table 1.

In the one year since deregulation for which there are data, prices fell almost ten times faster than in the five years before deregulation and by far more than the price caps in the deregulation plan required. While this large percentage decline is unlikely to persist, it does provide a measure of the immediate benefits that consumers have seen in the form of lower electricity prices.

Two years after reform's initiation, electricity customers in Pennsylvania express satisfaction with electricity competition, according to a poll of 2,068 residential electricity consumers conducted in August 2000 by Power Perceptions, a market research firm specializing in electricity consumer research.

> *"If the name of the game is customer satisfaction, then Pennsylvania is winning," said Stephen K. Carter, Executive Director of Power Perceptions and the principal investigator of the study. "Pennsylvanians expressed high levels of satisfaction in almost every aspect of their electric service," said Carter.*[18]

More Pennsylvanians said they were satisfied or extremely satisfied with their electricity service than the national average (31 vs. 24 percent).

Carter attributes most of Pennsylvania's success to its choice of default price. While California, Rhode Island and Massachusetts stifled competition with low caps on retail rates or low default prices,

> *Pennsylvania has set higher default prices, allowing alternative companies to offer competitive prices, which has resulted in more competition. With the price hurdle cleared, alternative electric suppliers can try to attract*

[18] www.powerperceptions.com.

customers with different pricing packages and billing options, a variety of incentives like frequent flyer miles, and better customer service, all of which affect customer satisfaction.[19]

Thus the combination of market-based default prices, non-mandatory divestiture of generation, accelerated phase-in of all consumers, and the use of regional markets encouraged entry and diversity of service offerings that have benefited Pennsylvania's consumers.

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C. Other Early Adopters in the U.S. Have Had More Limited Success[20]

Other states also initiated electricity deregulation around the same time as Pennsylvania and California, but have had different experiences.

1. Rhode Island

Rhode Island's legislation allowed all consumers to choose electricity providers by January 1998. The Department of Energy reports that "[b]y January 1998, retail access was implemented with 25 registered generation suppliers, but the standard offer interim rates (3.2 cents/KWh) offered by Rhode Island's investor-owned utilities are low enough that no real competition has occurred."[21] By June 1999, only 2,000 of Rhode Island's 456,000 customers (0.4 percent) had chosen alternative generation suppliers. Because of limited competition, Rhode Island's Public Service Commission approved default rate increases to 7.1 cents per kilowatt-hour by 2009.[22] In the *RED Index*, Rhode Island ranked 17th in February 2000, but moved to 8th by July 2000. The dramatic recent improvement of its competitive environment derives from several factors (or attributes, in the terminology of the study). In addition to changing legislation to require divestiture of generation, Rhode Island has recently implemented some functional safeguards to ensure that utilities cannot use the market power associated with their distribution function to enhance any of their other services. Within the past year they have also instituted uniform business practices, including standardized electronic protocols, for all utilities. Other contributors to the large increase in Rhode Island's *RED Index* ranking include using both pools and bilateral contracts for wholesale transactions, and the use of performance-based adjustments to price caps to adjust for productivity and other improvements.[23]

2. Massachusetts

After passing restructuring legislation in late 1997, Massachusetts opened generator choice to consumers in March 1998. Customers that received power from investor-owned utilities were free to choose their supplier, but by March

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[19] Ibid. See also Susan B. Kaplan "Restructuring: The Story Continues," *Forum for Applied Research and Public Policy* 15(2), 2000, pp. 6-11, forum.ra.utk.edu/kaplan.htm.

[20] While this summary focuses on Rhode Island and Massachusetts, Maine (another early adopter) has had a similar deregulation experience.

[21] DOE, Energy Information Administration, www.eia.doe.gov/cneaf/electricity/chg_str/tab5rev.html.

[22] Energy Guide, www.energyguide.com/finder.

[23] *Retail Electricity Deregulation Index*, July 2000, p. 75.

1999, only 1.3 percent of retail sales were by non-incumbent suppliers, almost entirely to large industrial consumers. Even as recently as September 2000, Massachusetts's deregulation had not generated much movement to competitive suppliers:

> *Customer migration statistics show that real retail competition has yet to take hold in Massachusetts. The Massachusetts Division of Energy Resources (DOER) reports that 5,176 customers bought power from competitive generators in July 2000, as compared to 2.5 million customers who received power from their incumbent utility. This low switching rate was expected in the state since competitive generators cannot offer better deals than the incumbent utilities until the standard offer price rises over a seven-year transition period.*[24]

Reform in Massachusetts has proceeded more slowly due to an anti-deregulation ballot initiative to reverse the legislation (this initiative was defeated in November 1998, with 71 percent of voters voting "no" on the proposition). Massachusetts, like other New England states, also faces relatively stringent sulfur dioxide emissions constraints, which increase the cost of generating electricity for all suppliers and could slow entry to the generation market.

To accelerate the benefits of reform, in July 2000 Massachusetts revised its legislation to tie the standard offer price more closely to wholesale prices, which should decrease the incumbency advantage. The utilities can also enter six-month to one-year bilateral contracts with generators, which should shift some market risk to generators and decrease retail price volatility. These changes took effect in January 2001. In the *RED Index* Massachusetts ranked 7th in February 2000 and 4th in July 2000, based largely on its changing default provider price risk to being constant, the introduction of some interconnection of distributed resources, and some reengineering activity by the regulatory commission.[25]

C. Comparing Price Changes—Pennsylvania versus Rhode Island and Massachusetts

Comparing price changes across time yields some indication of the consequences of these deregulation and reform differences among the three states. In both Massachusetts and Rhode Island, rates increased to 1993 and have declined since then, although they remained above the U.S. average in 1999. Table 4 shows the striking declines in prices that accompanied deregulation from 1998 to 1999, particularly in Pennsylvania.

Table 3: Revenue Per Kilowatt Hour of Retail Electricity Sales, All Sectors and Suppliers (Cents Per Kilowatt Hour)

	1999	1998	1993	1988
Pennsylvania	6.5	7.9	8.7	9.0
Rhode Island	8.8	9.6	11.5	10.0
Massachusetts	8.9	9.6	11.0	9.9

Source: 1988-1998 data: Energy Information Administration, Annual Electricity Overview 2000 State Profiles, http://www.eia.doe.gov/cneaf/electricity/st_profiles; *1999 data:* Energy Information Administration, Electric Power Annual 1999, http://www.eia.doe.gov/cneaf/electricity/epav1/fig15.html.

Table 4: Average Annual Percent Change, Revenue Per Kilowatt Hour

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[24] DOE, Energy Information Administration, www.eia.doe.gov/cneaf/electricity/chg_str/tab5rev.html.

[25] *Retail Electricity Deregulation Index*, July 2000, p. 57.

	1998-1999	1993-1998	1988-1993
Pennsylvania	-17.7%	-1.8%	-0.7%
Rhode Island	-8.3%	-3.3%	3.0%
Massachusetts	-7.3%	-2.5%	2.2%

Source: Table 3.

The dramatic difference in the price declines associated with deregulation highlight Pennsylvania's success. Although this is only one measure of benefit, it indicates that electricity reform has decreased prices in all three states, with the largest decline occurring in Pennsylvania. Other measures of benefit, like the increasing innovation and variety of service offerings that Pennsylvania's consumers enjoy (such as green power and real-time monitoring) reinforce the evidence of deregulation's success, particularly in Pennsylvania.

P a r t 3

The Commonwealth Story: Getting Deregulation Right Overseas[26]

A. The United Kingdom

The United Kingdom was one of the first countries to deregulate the electric industry in a widespread manner, initiating the process in 1989 with the passage of the Electricity Act.[27] This Act broke up the vertically-integrated Central Electricity Generating Board and spun off the national grid into a publicly-traded company (National Grid Company, or NGC) that would continue to be regulated because of its monopoly position. Generation was deregulated and opened to potential entrants, and incumbents were required to divest some (but not all) of their generating capacity. Power generators face market-based prices determined by the interplay of supply and wholesale demand. Marketing, another part of the electricity supply chain that does not appear to have economies of scale, was to be deregulated gradually up to April 1998, at which point all British consumers were supposed to be able to choose their supplier. Distribution would continue to be regulated and would occur through the 12 regional electricity companies (RECs).

The NGC also includes the "Pool," one of the elements that some credit with a substantial share of the U.K.'s deregulation success. The "Pool," is the mechanism that coordinates supply and demand across England and Wales, and acts as a clearinghouse between electricity suppliers and wholesale consumers (the RECs).

> *Those electric power generators whose capacity exceeds 100 megawatts are required to submit their generation units to dispatch by the National Grid Company (NGC). The NGC manages and operates the pool with an independent facility that attempts to balance supply and demand with an auction that roughly operates in the following manner. In the power pool, every day is broken up into 48 half-hour segments. The system manager forecasts demand for each half-hour segment. Twenty-four hours in advance, generators submit bids for the various levels of power they are willing to supply at various prices and for various periods, for each half-hour period of the following day. The system manager then ranks these bids from least to most expensive. The system manager also calculates the minimum amount of generating capacity needed to meet demand projections. A*

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[26] Much of the information in this section is from the DOE, Energy Information Administration, "Electricity Reform Abroad and U.S. Investments," October 1997, www.eia.doe.gov/emeu/pgem/electric. Although not covered in this summary, the DOE report includes extensive information on the deregulation and reform experience in Argentina over the past decade. New Zealand has also reformed its electricity regulation with great success; for a summary through 1998, see the Ministry of Economic Development, Chronology of New Zealand Electricity Reform, www.med.govt.nz/ers/electric/chronology.

[27] DOE, Energy Information Administration, "Electricity Reform Abroad and U.S. Investments," October 1997, chapter 2, www.eia.doe.gov/emeu/pgem/electric/ch2.html. The Electricity Act of 1989 followed the Electricity Act of 1983, which allowed entry into the power generation market by private producers for the first time since before World War II.

merit order dispatch schedule is created whereby the cheapest generation units are selected first and supply is capped when enough generation units are selected into the system to cause generation capacity to be sufficient to supply one unit of energy over and above the forecasted demand. The pool purchase price for all suppliers becomes the highest price bid by the last generation facility needed to accommodate the last unit of demand. This balancing activity is an attempt to arrive at the electricity generation industry's marginal cost, or the system marginal price (SMP).[28]

One criticism of the Pool has been its centralized nature—the Pool allowed only supplier bidding and has been "the only forum through which wholesale buyers and sellers of electricity can trade."[29] As the electricity market in the United Kingdom has evolved, mechanisms have been devised to address the potential market power of large incumbent utilities, such as National Power and PowerGen, and to smooth out the consequences of price volatility in the electricity market. For example, one new mechanism is the "contract for differences market," or CFD, a hedging market that allows suppliers and wholesale consumers to enter bilateral contracts.[30] Even more recently, U.K. regulators are shifting the system from a single, centralized pool in which all transactions occur to a system of supply-side and demand-side bidding in multiple markets, separating spot trading from futures trading in long-term contracts.[31]

By February 2000, 14 percent of all British consumers had switched suppliers, with approximately 92,000 making a choice each week.

Although it had been a slow process, by mid-1999 all British consumers could choose their electricity provider. In 1999, Mike Hughes, President of the Electricity Association, said that rates to consumers had decreased by 26 percent in real terms over the previous nine years, a trend he expected to continue. He also argued that deregulation's "success should be measured in the creation of a lasting market which, over the longer term, is more effective in delivering better service, greater choice, and lower prices to the customer than would be achieved by regulation alone."[32] Prices in the futures market are already seen as much as 10 to 15 percent below current prices.[33] Other estimates put the reduction in total costs of electricity for British consumers at 10 percent by early 2000.[34]

By February 2000, 14 percent of all British consumers had switched suppliers, with approximately 92,000 making a choice each week. According to the market analysis firm Datamonitor, about 80 percent of industrial consumers

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[28] DOE, Energy Information Administration, "Electricity Reform Abroad and U.S. Investments," October 1997, chapter 2, www.eia.doe.gov/emeu/pgem/electric/ch2.html. The report provides further detail on the operations of the pool and the full remuneration of the suppliers, including transition payments to allow utilities to recoup stranded costs.

[29] Catherine Wolfram, "Electricity Markets: Should the Rest of the World Adopt the United Kingdom's Reforms?" Regulation 22:4 (Fall 1999), www.cato.org/pubs/regulation/regv22n4/wolfram.pdf. Wolfram contrasts this centralized market with Norway's, where "trading is less structured; buyers and sellers can sign private bilateral contracts, broker deals through various private traders, or trade in one of several organized markets." In the U.S., Texas' trading model most closely approximates Norway's decentralized process.

[30] DOE, Energy Information Administration, "Electricity Reform."

[31] See Office for the Regulation of Electricity and Gas, *Tackling The High Cost Of Generation*, United Kingdom, ofreg.nics.gov.uk/pubs/execsum.htm; Marc Champion, "As Britain Recasts its Power Market, Others Take Note," *Wall Street Journal*, August 21, 2000, p. A13; and Wolfram, "Electricity Markets."

[32] www.poweronline.com/content/news/article.asp?DocID={E36115ED-285E-11D3-B645-00C04F481017}.

[33] Champion, "As Britain Recasts," p. A13.

[34] *Energy Markets*, February 2000, www.energy-markets.com/previous/0200/dereg.htm.

were expected to switch by late 2000, and 90 percent to switch by 2005.[35] While some observers are concerned about the distribution of the benefits from reform (industrial and commercial consumers probably benefited more than residential consumers), few would argue that deregulation in the United Kingdom has been anything but a success. A recent report ranked the European Union countries based on their deregulation and reform efforts and outcomes; this report gave the United Kingdom (and the Netherlands) full marks for their reform.[36]

The European Union, inspired by the United Kingdom's success, has initiated an electricity deregulation initiative. In Germany, 71 percent of its industrial users, 45 percent of commercial users and 32 percent of residential consumers are expected to switch providers by 2005, and in the Netherlands 65 percent of industrial users are expected to switch as well.[37] The European Union has already implemented several regional power markets and is working toward complete deregulation.[38]

In Germany, 71 percent of its industrial users, 45 percent of commercial users and 32 percent of residential consumers are expected to switch providers by 2005, and in the Netherlands 65 percent of industrial users are expected to switch as well.

B. Australia

Australia's national electricity deregulation was inspired by the positive experience in the United Kingdom. Unlike the United Kingdom, Australia's electricity reform has occurred at both national and state levels, so the Australian experience may be more relevant to the United States and its reform efforts.

> *Although the Australian and U.S. electricity industries are in many ways very different, Australia's dual path to electricity reform bears some similarities to current developments in U.S. electricity markets. One result of Australia's dual state/national approach to electricity reform is that each state has pursued different reforms with reform efforts at the national level providing more guidance than direction. Reform at the state level differs from UK reform, which was entirely a central government effort.*[39]

As in the United Kingdom, Australia has divided the vertically integrated industry into functional areas; the state of Victoria, which has been the most aggressive in reform, has adopted the United Kingdom model of four divisions within the electricity supply chain. Australia's national government has overseen the construction of a national pool to act as a market clearinghouse, and they are in the final stages of creating a national power grid linking the pre-existing regional grids. The operation of the pool and the role of the national regulator vary from the U.K. model, reflecting Australian efforts to customize the model to their specific circumstances.

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[35] Ibid. *Energy Markets*, February 2000, www.energy-markets.com/previous/0200/dereg.htm.

[36] "Energy Liberalisation Indicators in Europe," www.oxera.co.uk/oxera/newoxera.nsf/files/oxerareport.pdf/$FILE/oxerareport.pdf; also cited in *Retail Energy Deregulation Index 2000*.

[37] Energy Markets, February 2000.

[38] See, for example, www.commodities-now.com/cnonline/dec98/elecdereg.shtml, which summarizes the EU initiative as of December 1998.

[39] Department of Energy, "Electricity Reform Abroad and U.S. Investments," October 1997, chapter 3, www.eia.doe.gov/emeu/pgem/electric/ch3.html. See this report for more details about the construction of the Australian system.

Although scheduled for a 1995 kickoff, Phase I of the National Electricity Market commenced in May 1997. In this initial phase, New South Wales, Victoria, and the Australian Capital Territory operated a wholesale electricity market, which was the precursor to a national generation pool.

> *When less expensive electricity is available in one state (e.g., Victoria), the pool allows another state (e.g., New South Wales) to import this cheaper electricity. The new power pool is intended to create a national electricity market in Australia.*[40]

By December 1998 the Southern and Eastern states had established an electricity market, and by early 2001 the national electricity grid will be in place.[41]

Australia's Productivity Commission estimates that since 1991, market reforms and deregulation have resulted in average real price declines of 24 percent. The Industry Commission believes that the benefits to the Australian economy are equivalent to an annual GDP increase of 1.25 percent.[42]

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[40] Department of Energy, "Electricity Reform Abroad and U.S. Investments," October 1997, chapter 3, www.eia.doe.gov/emeu/pgem/electric/ch3.html. See this report for more details about the construction of the Australian system.

[41] Ibid; see also the Australian government's Electric Industry Reform site (www.isr.gov.au/resources/electricity_reform/reform/index.html), and specifically, "Reform of the Australian Electric Supply Industry," May 23, 2000, www.isr.gov.au/resources/electricity_reform/reform/Reform_of_Aust_elec_ind__23-5-00_.htm.

[42] www.isr.gov.au/resources/electricity_reform/reform/aus_esi.pdf.

Part 4

The Texas Story: Trying to Get Electricity Deregulation Right

The demonstrable success of electricity deregulation in Pennsylvania, the United Kingdom, and other nations illustrate the price reductions and innovative approaches to supplying retail electricity that can accompany deregulation. A prudent government will use these examples experiences to help frame its deregulation policies. Texas is a prime example of a state government taking just such an approach.

A. Background: Texas's Legislation[43]

Like California, Pennsylvania, Rhode Island, and Massachusetts, Texas began considering wholesale electricity market restructuring legislation in 1995. Although Texas operates its own regional grid and therefore has little federal regulatory oversight from the Federal Energy Regulatory Commission (FERC), Texas passed the Public Utility Regulatory Act in 1995 in response to FERC's national-level encouragement of deregulation. As part of this act Texas established ERCOT, the Electricity Reliability Council of Texas, as the region's Independent System Operator (ISO), with responsibility for security of the bulk power system, market facilitation, and transmission coordination and planning.[44]

Retail competition became law on June 18, 1999, when Governor George W. Bush signed Texas Senate Bill 7. The legislation provides for phased-in transition to full retail choice by January 1, 2002. Utilities can offer pilot programs to five percent of their customers (on a first-come, first-served basis) starting in June 2001,[45] and utilities and the state Public Utility Commission (PUC) will create education programs for consumers.

The legislation requires incumbent utilities to "unbundle," or restructure, the four components of the traditional vertically integrated supply chain: retail marketing, generation, transmission, and distribution.

> *[T]he legislation limits the market power of incumbent suppliers by prohibiting affiliates of regulated transmission and distribution (T&D) companies from owning more than 20 percent of the generation capacity within a power region. SB 7 also requires utilities with generation capacity to sell at least 15 percent of their Texas jurisdictional capacity through auctions to ensure sufficient capacity for competitors to resell.*[46]

Those utilities that have yet to recoup investment costs that are unrecoverable through sale of their generation capacity will be able to impose a fixed transition cost on customers, or recoup these "stranded costs" through

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[43] Much of the information in this section comes from Energy Information Administration, U.S Department Energy, *The Changing Structure of the Electric Power Industry 2000: An Update*, Chapter 8, October 2000, www.eia.doe.gov/cneaf/electricity/chg_stru_update/chapter8.html.

[44] ftp.ercot.com/isoprsn.htm.

[45] www.ees.enron.com/choice.

[46] Xenergy, *Retail Energy Foresight*, June 2000, p. 13; www.xenergy.com.

securitization. In keeping with the established timeline in Texas, all nine incumbent utilities filed their restructuring plans in January 2000. In these plans they explained how they would separate the four components of the supply chain, and which components of their previous businesses they would divest. In September 2001 the PUC will start certifying alternate providers before January 2002, when all customers can choose electricity providers.

In terms of rates, retail prices offered by incumbents will be frozen at a six percent discount off of current rates.

> *Included in SB 7 is the "price to beat" concept, which is intended to reduce the rates paid by small customers during the transition period and to further limit the market power of incumbent suppliers. . . The total average rate charged to those customers not served by a competitive REP [Retail Energy Provider] must be 6 percent lower than the bundled rates in effect as of January 1, 1999.*[47]

This "price to beat" for alternate suppliers will be in place for three years, or until 40 percent of an incumbent's customers have switched, whichever comes first. At that point the "price to beat" rate will then serve as a ceiling or rate cap, which will disappear entirely in 2007. The legislation also provides a mechanism for utilities to pass on increased input costs (such as natural gas) to customers.

Another crucial component of the legislation is the encouragement of using renewable energy sources in generation.

> *With regard to renewables, a new rule mandates the building of two gigawatts of new capacity fueled by renewable sources by 2009. Between now and 2009 the rule requires the following: 400 megawatts by 2003, an additional 450 megawatts by 2005, another 550 megawatts by 2007, and an additional 600 megawatts by 2009.*[48]

Generators will also earn tradable credits for producing renewable energy.

B. Why Consider Texas a Blueprint for Deregulation Legislation?[49]

The mandates described above are controversial and could hamper the movement to an efficient retail market, Texas's treatment of renewable energy and the trading credit system has been referenced in restructuring planning documents in many states.[50] As early as seven months after the legislation was signed, many observers regarded Texas's process as a good reform blueprint.

> *Xenergy, Incorporated, a nationwide consulting firm, looks to Texas as a good model for electricity restructuring. Xenergy senior vice president William Huss stated, "The decision to deal with wholesale issues at the outset by leveling the playing field for equal transmission access promises to create a strong retail market. The state legislature and the Public Utilities Commission learned from the other states that passed restructuring measures before them what wholesale issues were not addressed. Texas also requires investor-owned utilities to separate their businesses into transmission and distribution companies, power generators, and unregulated retail providers. Kathleen Magruder of Enron did note however, that a serious flaw in the restructuring plan is the*

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47 Xenergy, *Retail Energy Foresight*, June 2000, p. 13; www.xenergy.com.

48 Energy Information Administration , *The Changing Structure*.

49 This analysis does not explicitly address the issue of stranded costs, although some analysts have indicated that recent increases in natural gas prices (and associated profit increases at utilities) have generated negative stranded costs for some Texas utilities: "[O]ne result of the natural gas price surge will be a reduction of the amount of stranded costs owed by utilities. . . 'If gas prices are higher, then market prices for power go up, and that means the existing assets of utilities are more valuable'. . . Only five utilities have claimed stranded costs. . . 'It now looks like a number of utilities could have negative stranded costs'." *Electric Utility Restructuring Weekly Update*, August 11, 2000, www.eren.doe.gov/electricity_restructuring/weekly/aug11_00.html.

50 See, for example, Virginia State Corporation Commission, *Restructuring, Energy Efficiency and Renewable Energy*, Presentation to the Legislative Transition Task Force, August 16, 1999, dls.state.va.us/groups/elecutil/08_16_99/ EESCC.HTM.

local control of metering and billing until 2004. Other issues still need to be resolved, including the structure of shopping credits.[51]

In June 2000, Xenergy called Texas's plan "the new restructuring model to watch," observing that "SB 7 appears to be the most pro-competitive restructuring bill on the books today."[52] Texas has pursued electricity deregulation that:

- Creates incentives to build new capacity and increase the supply of electricity in the Texas market;
- Enables wholesale buyers and sellers to enter into contracts of varying lengths and terms, and to use financial instruments to manage risk;
- Manages retail pricing and incumbent price caps in a way that encourages the entry of alternate providers;
- Encourages a variety of service packages and offerings, including renewable resource generation; and
- Takes into account perceived shortcomings of legislation in other states and countries, including California.

Relative to other states, Texas provides a predictable and reasonably efficient regulatory process for the construction of new generation plants.

1. Plant Construction and Electricity Supply in Texas

Relative to other states, Texas provides a predictable and reasonably efficient regulatory process for the construction of new generation plants. Investors incorporate regulatory lags and the predictability of regulatory treatment into their profit expectations, which determine whether or not a generator will build a plant. If regulators take a long time to approve plants, or change their behavior or decisions in unpredictable ways, plant construction would falter. The transparency of Texas's regulatory process removes this uncertainty. According to Pat Wood III, Chairman of the Texas PUC, "a plant can go from proposal to reality in as little as 24 months and up to 36 months at most."[53]
In the past five years, 22 new plants have been constructed in Texas, with generating capacity of 5,700 megawatts; 15 more plants with 10,000 megawatts are scheduled to be up and running by January 2002.[54] For this reason electricity prices have not increased much in Texas (except for some recent increases due to escalating natural gas prices), even in the face of electricity demand growing at a rate similar to California's.

This environment is in striking contrast to California's, in which generating capacity has increased only by 672 megawatts since 1995. California also foresees construction of only 3,000 additional megawatts by January 2002, even though demand in California grew by at least 5,500 megawatts between 1996 and 1999.[55] Texas officials are

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[51] *Electricity Daily*, February 23, 2000, summarized in *Electric Utility Restructuring Weekly Update*, February 25, 2000, www.eren.doe.gov/electricity_restructuring/weekly/feb25_00.html. Note that Pennsylvania opened up metering and billing to alternate providers early in their deregulation process, which encouraged innovation in metering and accelerated the slow movement toward real-time pricing.

[52] Xenergy, *Retail Energy Foresight*, June 2000, p. 13; www.xenergy.com.

[53] Terry Maxon, "Texas Learns from California Utilities' Woes," *Dallas Morning News*, August 23, 2000, www.dallasnews .com/business/152863_power_23bus.AR.html.

[54] Terry Maxon, "Texas Learns from California Utilities' Woes," *Dallas Morning News*, August 23, 2000, www.dallas news.com/business/152863_power_23bus.AR.html.; see also "Texas Won't Face California Electric Restructuring Woes," Texas Senate press release, August 22, 2000, www.senate.state.tx.us/75r/senate/members/dist22/pr00/p082200a.htm.

[55] Maxon, "Texas Learns from California Utilities' Woes."

quick to point out that "although Texas and California have similar size electric grids and similar growth in power demand, Texas has put more than eight times more power on line between 1996 and 1999 than California."[56]

Texas officials are quick to point out that "although Texas and California have similar size electric grids and similar growth in power demand, Texas has put more than eight times more power on line between 1996 and 1999 than California."

2. Use of Financial Markets to Manage Risk

The Texas state government has not created a top-down "electricity market" like "the Pool" in England and Wales or the Power Exchange in California.[57] It has also placed no restrictions on wholesale buyers' and sellers' contractual arrangements, allowing them to trade through pre-existing for-profit markets. The ERCOT ISO serves only to provide information and to coordinate demand and supply in the face of unplanned events, and does not provide a power exchange. Electricity market participants, though, will be able to use financial markets to enter spot contracts and forward contracts, or to use other financial instruments (like puts, calls, swaps, and collars) to manage risk. This flexibility will create a more stable environment for both buyers and sellers, which will encourage alternate supplier entry and further competition. The stable environment is also likely to translate into price stability for retail customers.

Many observers have argued that one reason for the chaotic results of California's restructuring is its restrictions on contracts other than day-ahead spot contracts through the Power Exchange.[58]

> *California requires utilities to buy their power through a state-run pool. While that requirement was designed to give every company the same wholesale price for power, it also guaranteed that they would be unable to negotiate lower-priced power on their own. The California rules essentially barred utilities from buying power on the futures market, meaning they were unable to lock in supplies and prices.*[59]

Spot markets are generally more volatile than forward contracts. In addition, the California Power Exchange (PX) follows discriminatory auction pricing rules in which all suppliers receive the market-clearing price, not necessarily the price that they bid. This is below the market-clearing price for inframarginal suppliers so low-cost generators are likely to receive a price above their marginal production cost. This exacerbates volatility when input prices (like natural gas prices) rise.[60]

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[56] "Why the Grinch Won't Steal Christmas in Texas," Texas Senate press release, December 14, 2000; www.senate.state.tx.us/75r/senate/members/dist22/pr00/p121400a.htm.

[57] Energy Information Administration, *Electricity Reform Abroad and U.S. Investments*, October 1997, Chapter 2; www.eia.doe.gov/emeu/pgem/electric/ch2.html.

[58] See, for example, Federal Energy Regulatory Commission, "Staff Report to the Federal Energy Regulatory Commission on Western Markets and the Causes of the Summer 2000 Price Abnormalities," www.ferc.fed.us/electric /bulkpower.htm. See also the resources at the RPPI California Electricity Crisis Center, www.rppi.org/electricity.

[59] Terry Maxon, "Power Woes Unlikely in Texas, Officials Say," *Dallas Morning News*, January 19, 2001; dallasnews.com/business/266077_texpower_bus19.html. Note that in August 2000, as a result of the volatile prices during the summer, California regulators relaxed some of the restrictions on utilities entering long-run contracts, but the essential spot-market focus was unchanged.

[60] For a clear discussion of the effect of discriminatory auctions in electricity markets, see Catherine Wolfram, "Electricity Markets: Should the Rest of the World Adopt the United Kingdom's Reforms?" in *Regulation* 22:4 (Fall 1999); www.cato.org/pubs/regulation/regv22n4/wolfram.pdf. Discriminatory auctions also give bidders an incentive to "shade" their bids, or bid above the true value they place on that contract, generally resulting in higher prices.

3. Retail Pricing and Price Caps

The "price to beat" system in Texas, with a benchmark price at a six percent decrease from regulated rates, extends lower prices to retail consumers without being low enough to discourage potential generators from considering entering the market.

> *[I]n February 2000, Commissioner Brett Perlman indicated that, based on preliminary data, sufficient headroom existed to allow the generation portion of the "price to beat" to be as high as 5 cents per kilowatt-hour on average. If this becomes reality, it is likely that we will see substantial retail activity in the Lone Star State come January 1, 2002.*[61]

Many observers have argued that one reason for the chaotic results of California's restructuring is its restrictions on contracts other than day-ahead spot contracts through the Power Exchange.

The "price to beat" serves as a target against which potential entrants compete; if it is too low, then potential competitors are less likely to enter. For example, a "price to beat," or default price that is fixed at the wholesale price of electricity, does not give potential entrants a margin upon which to compete against incumbent utilities.

> *If all non-shopping customers receive a mandatory rate decrease, customers have little incentive to shop and there is less "headroom" available for any individual rate component to be charged at its full value. . . [R]educing the generation portion may drive the rate below wholesale average generation prices, which compromises the development of a competitive market.*[62]

Texas is implementing retail default rate determination, which is more conducive to competition than other ways of structuring the rates for a default service provider.

> *Some states, notably Pennsylvania, establish a shopping credit or price target that customers can use to purchase electricity. If the shopping credit or price target is set somewhat higher than the actual cost of the default provider's costs, it provides a jump-start to competition. This position is justified as a mechanism for overcoming the inherent advantages of incumbency and the inertia created by a century of encouraging consumers to be passive about their electric supplier. This is called a "retail" rate.*[63]

In anticipation of cost decreases, the Texas legislation has also deemed this "price to beat" to be the retail price cap that will be in operation from 2004 to 2007, when the price cap expires.

Unlike Texas, California determined its default price by an administrative cost allocation method.[64] California suppliers have also been facing a fixed retail price cap at 6.4 cents per kilowatt-hour, which is low relative to historic rates (9.0 cents per kilowatt hour in California in 1998) and particularly low relative to the increase in input costs

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[61] Xenergy, *Retail Energy Foresight*, June 2000, p. 14; www.xenergy.com. Some uncertainty still exists because the headroom in the "price to beat" is partly a function of stranded costs. If incumbent utilities claim and/or receive higher stranded cost reimbursements, then the headroom in the generation portion of the price decreases, hampering retail competition. As mentioned above, though, only five of the nine incumbent utilities have claimed stranded costs, and recent movements in natural gas prices may decrease stranded costs by raising the market value of generation assets.

[62] Xenergy, *Retail Energy Foresight*, June 2000, p. 7; www.xenergy.com. See also Center for the Advancement of Energy Markets, *RED Index 2000*, July 2000, p. 24; www.caem.org.

[63] Center for the Advancement of Energy Markets, *RED Index 2000*, July 2000, p. 24; www.caem.org.

[64] Center for the Advancement of Energy Markets, *RED Index 2000*, July 2000, p. 40; www.caem.org.

due to high natural gas prices in 2000 and 2001. This lack of profit potential has contributed to weaker (or nonexistent) retail competition in California than is expected in Texas.

4. Variety and Differentiation of Service Offerings

One substantial benefit of deregulation and the use of market processes is the ability of suppliers to cater to different preferences and be innovative in developing new product offerings. For example, "TXU (formerly TU Electric Company) has announced that it will offer a package of services including electricity, natural gas, telephone, cable, and home security to occupants in a new business and residential developments outside Austin."[65]

In additional to providing environmental benefits, the legislation's emphasis on increasing the use of renewable resources may give further encouragement for diversifying service offerings—although customer demand for green power would be a more efficient driver than regulatory mandates. For example, Green Mountain Energy filed with the PUC in December 2000 to become the first green energy retail electric service provider in Texas.[66] Green Mountain hopes to participate in the pilot programs starting in June 2001. Wind power providers also see growth and profit opportunities in deregulation:

> *Historically an oil-rich state, Texas is among the windiest states in the nation. Randall Swisher, executive director of the American Wind Energy Association, believes wind power in Texas could meet 40 percent of the United States' energy needs. Although Texas ranked at the bottom of wind generating states ten years ago, today it is among the top four and by 2010, Texas could have the largest wind power industry in the country. Swisher attributes much of this success to state's action on electric restructuring. Specifically, state law now requires retailers to purchase "renewable energy credits" from wind farms, hydroelectric dams, and turbines fueled by landfill gases. Each retailer must purchase credits in proportion to their overall share of the market.*[67]

In addition to fostering innovation in the use of renewable resources, deregulation should encourage innovation in such market-facing areas as monitoring technology and real-time pricing, although these changes may take place over the longer run.

5. How Texas Has Learned from its Predecessors

Texas officials toured facilities and met with deregulation experts in California and the United Kingdom while in the process of drafting their legislation, and they explicitly tried to correct what they perceived as faults in restructuring in other places. For example, while California forced generators and utilities to trade through the Power Exchange, "Texas' deregulation framework, for example, allows for trading through multiple for-profit markets, rather than directing it to a single, nonprofit agency."[68]

Senator David Sibley and Representative Steve Wolens, the Texas legislators who wrote the deregulation legislation, believe that they have incorporated enough pricing lessons from California and elsewhere to encourage competition:

> *Mr. Wolens and Mr. Sibley said they think the rules for retail competition have been carefully written to avoid California's problems. For example, California's rules wound up discouraging companies to come [sic] in and*

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[65] Jay Zarnikau, "Rewired for Competition: The Restructuring of Electricity Markets in Texas," *Texas Business Review*, August 1999; www.utexas.edu/ftp/depts/bbr/tbr/Aug.99.zar.html.

[66] www.greenmountain.com/about_greenmtn/articles/20001211.htm. Note also that Green Mountain Energy has relocated their corporate headquarters from Vermont to Austin, Texas.

[67] *Electric Utility Restructuring Weekly Update*, October 6, 2000; www.eren.doe.gov/electricity_restructuring/weekly/oct06_00.html

[68] Robin Fields, "Trading Floor Breathing Last Gasps in Failure of Deregulation," Los Angeles Times, January 29, 2001; www.latimes.com/business/reports/power/lat_px010129.htm.

compete against the traditional utilities that had provided electricity service. Texas rules are believed to provide enough potential for profit that Texas retail markets will get sufficient competitors.[69]

In general, Texas officials and analysts believe that

Texas appears to have learned from problems in California and other states. . . . Moreover, state regulators, an interim legislative committee, consumer groups and electric utilities, are closely watching the California situation for signs of problems that can be corrected before electricity deregulation arrives in Texas.[70]

Using flexibility and caution, Texas expects its commitment to competition in the retail electricity market to bring benefits to customers and profit potential for suppliers, particularly for innovative power providers and marketers.

C. Conclusion

Texas's electricity deregulation legislation, and its process to date, suggest that deregulation can and will generate benefits for both customers and suppliers. For those dismayed by the politicized restructuring in California, Texas's plan provides an antidote. While its legislation determines the parameters, the state is allowing competition to evolve naturally. That, and its resolve in standing by those decisions, bode well for retail competition success in Texas.

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[69] Maxon, "Texas Learns from California Utilities' Woes."

[70] "Texas Should Monitor California Problems Closely," *Dallas Morning News*, August 20, 2000; at http://www.dallasnews.com/editorial/145674_electricitysho.html.

Part 5

Policy Recommendations

Experience in Pennsylvania, the United Kingdom and Australia (among others); the evolution of the deregulation process in Massachusetts, Rhode Island and the United Kingdom; and the great potential for success in Texas and other states, demonstrate the real benefits of deregulation. The current political response in California—to increase even further direct state involvement in electricity markets—runs directly counter to the actual market experiences analyzed in this report. The U.S. states described above have learned a great deal from analyzing the politicized restructuring in California, and have incorporated those lessons into their deregulation legislation and processes. California should incorporate lessons from well-done deregulation into the rescue of their failed restructuring effort. States considering deregulation would also do well to take advantage of the two-way street of learning.

Following are some general lessons that we can learn about implementing successful electricity reform.

A. Set high enough default prices to encourage real competition

The standard offer price is the price customers pay if they do not choose an alternate supplier, and the default price (or "price to compare") is the price at which a utility will sell electricity in the absence of competition.[71] For example, a "price to beat" or default price that is fixed at the wholesale price of electricity does not give potential entrants a margin upon which to compete against incumbent utilities.

> *If all non-shopping customers receive a mandatory rate decrease, customers have little incentive to shop and there is less "headroom" available for any individual rate component to be charged at its full value. . . [R]educing the generation portion may drive the rate below wholesale average generation prices, which compromises the development of a competitive market.*[72]

In Rhode Island and Massachusetts (the first two U.S. states to pass reform legislation) the standard offer price and the default price differed, while in Pennsylvania the legislation referred to standard offer price as "the default price" and the default price as the "shopping credit." Setting the standard offer price or the default price too low can discourage potential competitors from entering a market, because it leaves consumers with little incentive to shop for competing service.

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[71] Kaplan "Restructuring: The Story Continues," pp. 6-11.

[72] Xenergy, *Retail Energy Foresight*, June 2000, p. 7; www.xenergy.com. See also Center for the Advancement of Energy Markets, *RED Index 2000*, July 2000, p. 24; www.caem.org.

The striking contrast between real benefits in Pennsylvania and small benefits in California, Rhode Island, and Massachusetts show how important the default price and price caps can be. As Susan Kaplan noted:

> *If the standard offer is set too low, new suppliers entering the market will be unable to compete. This was the case in Massachusetts, where new suppliers have been unable to enter the market and, as a result, residential customers do not yet have real choice. Indeed, new market entrants in several states have pulled out after concluding that the environment was not ripe for competition.*[73]

Pennsylvania's default price, which is higher and more attuned to market prices than either Rhode Island's or Massachusetts's, presented potential competitors with real profit potential. Without that foundation, competitors could not enter the market extensively and offer the variety of services seen in Pennsylvania, such as green power. More important, without vigorous entry, the market may fail to add supply of electricity to keep pace with demand, as has happened in California.

If what happened in California shows what can [go] wrong with deregulation, what's happening in Pennsylvania shows that competition can succeed.

B. Do not mandate divestiture of generating capacity

Much, but not all, reform legislation mandates that incumbent utilities divest their generation capacity. Some see the generation sector as the part of the electricity supply chain with the highest competitive potential, while others argue that mandated divestiture eliminates the benefits that can accompany vertical integration in an industry.

Instead of mandated divestiture, the encouragement of restructuring of utilities created substantial flexibility in Pennsylvania's electricity market. Divestiture is likely to occur to some extent as a part of restructuring, when utilities refine their "core competencies." Allowing retention of at least some generation capacity enables companies and consumers to reap the benefits of vertical integration where they exist.[74]

C. Accelerate the phase-in period for all customers to be allowed choice

Although industrial consumers enjoy much of the benefit of deregulation, opening industrial as well as commercial and residential markets to competition more quickly enables more customers to make their own choices of electricity providers and services, and see more appreciable benefits more quickly.

D. Encourage the use of voluntary regional exchanges and clearinghouses and the development of associated financial instruments.

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[73] Xenergy, *Retail Energy Foresight*, June 2000, p. 7; www.xenergy.com. See also Center for the Advancement of Energy Markets, *RED Index 2000*, July 2000, p. 24; www.caem.org.

[74] Another alternative was used in New York, where the state required utilities sell off their generation plants, but also allowed so-called "vesting contract" under which the utilities could sign long-term power delivery contracts with new owners of the plants as a condition of the sale. Federal Energy Regulatory Commission, *Order Directing Remedies for California*, p.37.

PJM and other ISOs in the United States, as well as the use of NYMEX to trade electricity futures, enable utilities and wholesale generation companies to plan and price their services. Markets and clearinghouses serve a crucial role by allowing utilities and generators to mix, enter bilateral contracts, and make spot purchases to manage price volatility and balance reliability and cost.

Reform and restructuring of the electric industry need not produce crisis. Electricity deregulation and reform can bring substantial benefits to consumers, as several worldwide examples of successful reform demonstrate. Careful consideration of factors such as default price, flexible industry restructuring, phase-in period and membership in regional markets can make the difference between success and failure. As Stephen Carter at Power Perceptions noted, "If what happened in California shows what can [go] wrong with deregulation, what's happening in Pennsylvania shows that competition can succeed."[75]

[75] www.powerperceptions.com.

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