Brakey Consulting, Inc.
your key to energy

Residential Electric Rates

Lessons for Ohio from Other Deregulated States

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1

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Table of Contents

Executive Summary

Highlights

Beginning in 1999, Ohio began transitioning from traditional cost-based regulation of electric generation service to a "market-based" one. States which have finished this process and proceeded to markets have seen rates skyrocket. Rate Stabilization Plans have allowed Ohio to continue in the market-based direction, while temporarily avoiding rate shock. These plans begin expiring at the end of 2008 for most Ohio electric utilities. If no action is taken by the PUCO and Ohio legislature, Ohio will be completely subjected to market prices.

We have collected data on residential electric rates for utilities in major cities of every state. In order to estimate what will happen to Ohio residential electric rates on January 1, 2009, we took a look at the experiences of 13 other deregulated states: what has happened to provider of last resort (POLR) prices, what alternative market offers are available to customers, and the rate of customer switching to these alternative market rates.

Key Conclusions

Based on our analysis, we conclude that the market-based approach has repeatedly produced unfavorable price outcomes relative to prices under regulation. We have found no data to support that even a single state has benefited from the effort to enable competition in the electric generation market.

Wherever rate caps have expired, high increases in incumbent utility POLR residential electric rates follow. This has also been true for commercial[1] and industrial[2] customers throughout the United States. With no sustainable or robust market for the retail sale of electricity, there is an almost complete lack of residential customer migration to alternative generation suppliers.

In 2007, Ohio stakeholders must complete efforts to address the impending rate shock crisis. The underlying problems of the electric "markets" are problems that states alone can not fix. Until root causes are addressed at the federal level, entry into competitive markets by any state will be disastrous for residential energy consumers. Ohio stakeholders (e.g., the Ohio legislature and PUCO) need to coordinate with policymakers on the federal level to produce outcomes that are in the best interest of our state.

- At the state level, the Ohio Legislature should give the Public Utility Commission more power to protect Ohio's economy and consumers.
- At the federal level, Ohio stakeholders need to actively pressure the Federal Energy Regulatory Commission (FERC) to complement Ohio's efforts to ensure that its citizens have access to reliable and reasonably priced electricity.

[1] See Commercial Report on Deregulation, at www.brakeyconsulting.com, under "Reports".
[2] See Industrial Report on Deregulation, at www.brakeyconsulting.com, under "Reports".

Electric Deregulation

Background on Electric Deregulation

Traditionally, in a state regulated environment, vertically integrated electric utilities provided the generation, transmission and distribution of electric power to the customers in one package. Under deregulation[3], these services are separated or "unbundled" into individually priced functions. While distribution (or delivery) continues to be regulated by the state, transmission authority and control resides in the federal government as does authority regarding wholesale sales of electricity. Where states enacted electric restructuring legislation, customers gained the choice of purchasing generation from alternative suppliers or remaining with the distribution utility designated as the generation supply provider of last resort (POLR). When generation is no longer owned by the distribution utility, it may need to secure its POLR supply from the wholesale electric market subject to FERC's ratemaking authority. The Federal Power Act requires FERC to ensure that wholesale prices are "just and reasonable".

In a recent *New York Times* article, the reporter began by stating, "A decade after competition was introduced in their industries, long-distance phone rates had fallen by half, air fares by more than a fourth and trucking rates by a fourth. But a decade after the federal government opened the business of generating electricity to competition; the market has produced no such decline."[4]

Electric Deregulation in Ohio

When Governor Taft signed Ohio's electric restructuring legislation ("SB 3") in 1999, he initiated a process which was expected to eventually lower electric costs within Ohio. Through SB 3, a timeline was created to transition Ohio into a competitive marketplace by January 1, 2006. The timeline was based on what proved to be a faulty assumption that a robust wholesale and retail market would be in place and fully functional.

As we entered 2003, based upon the results of both electric restructuring inside and outside of Ohio, it was apparent to the Public Utilities Commission of Ohio (PUCO) and other Ohio stakeholders that SB 3's timeline assumption was overly optimistic. Federal policymakers had not yet created a "market" that was producing the price efficiencies that one would expect to see. Rather than lower prices and better service, customers in open market states were contending with rate shock and electric supply problems. Ohio's answer was Rate Stabilization Plans (RSPs).

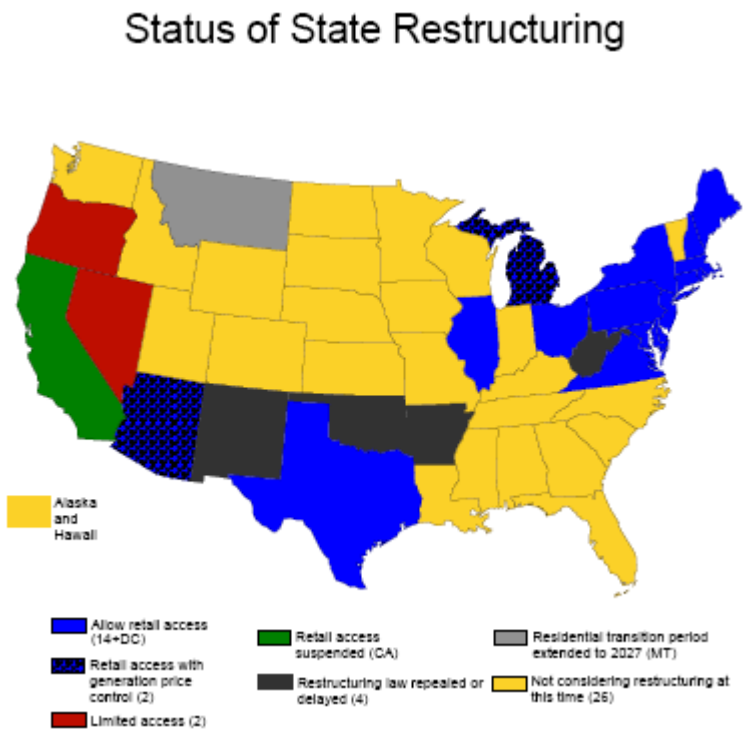
RSPs are structured arrangements with each of the Ohio investor-owned electric utilities that were proposed by the utilities and approved by the PUCO.[5] These plans have allowed Ohio to continue to move to competitive markets without subjecting itself to rate shock. While the RSPs are providing Ohio an additional incubation period to allow the FERC and its regional transmission organizations (RTOs) more time to develop competitive markets, the RSPs will begin expiring at the end of 2008 for nearly all Ohio electric utilities. Unfortunately, the intrinsic problems of the wholesale markets have not been adequately addressed by FERC despite this allowance of more time and competition in the retail market depends on good

[3] Deregulation is also referred to as restructuring, open markets, retail access or competition.
[4] David Cay Johnston, "Competition Era Fails to Shrink Electric Bills", New York Times, October 15, 2006.
[5] The PUCO has held that it does not have authority to impose a rate stabilization plan on a utility.

competition in wholesale market. Unless action is taken very soon to once again put in place a plan to protect Ohio from the dysfunctional electric market, we can expect electric rates to increase significantly on January 1, 2009.

Electric Deregulation in Other States

In the past decade, 23 states have moved towards pursuing deregulated electric markets. The map below, prepared by Dr. Kenneth Rose[6], shows that Ohio is currently one of only 14 states (in blue) that allow consumers to purchase electric generation from alternative suppliers. Four others (in red and dark blue) allow limited access. Four states (in black) have repealed or delayed restructuring. California has suspended its transition to open markets. There are 26 states (in gold) that are not considering restructuring at this time.



The Electric Energy Market Competition Task Force[7] has examined whether competition in wholesale electric markets has resulted in the kind of choice that is generally associated with competitive markets. In their 2006 draft report to Congress, they state:

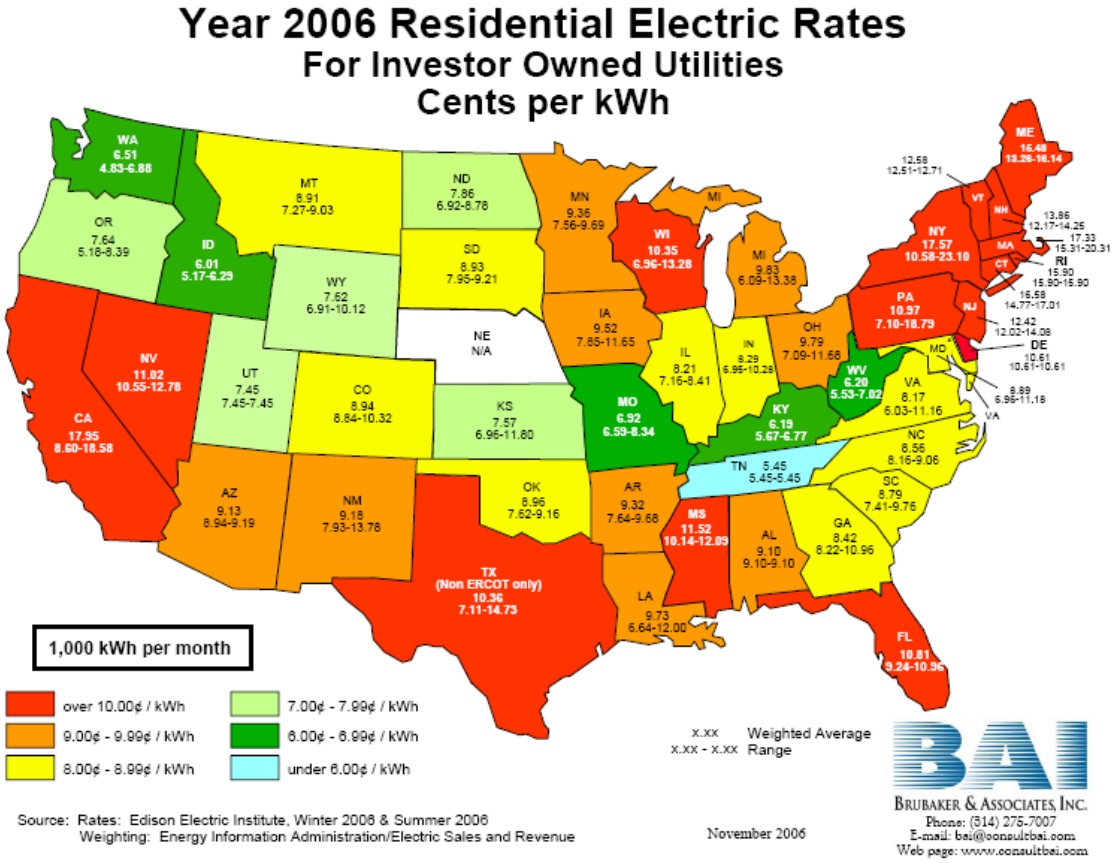
> One of the main impediments to retail competition has been the lack of entry by alternative suppliers and marketers to serve retail customers. Most states required the distribution utility to offer customers electricity at a regulated price as a backstop or default if the customer did not choose an alternative electricity supplier of the chosen supplier went out of business – that is called 'provider of last resort (POLR) service.' Many of these states capped the POLR service price to 'transitional' multi-year periods that are now just ending. These caps have had the unintended effect of discouraging entry by competitive suppliers.[8]

[6] Kenneth Rose, Ph.D., *Perspective on the National Electricity Marketplace*, 11th Annual Ohio Energy Management & Restructuring Conference, Columbus, Ohio, February 28, 2007

[7] The Electric Energy Market Competition Task Force was established by the Energy Policy Act of 2005 to conduct a study of competition within the wholesale and retail electric market and to submit a report to Congress.

[8] The Electric Energy Market Competition Task Force, *Report to Congress on Competition in the Wholesale and Retail Markets for Electric Energy - Draft*, June 5, 2006, page 5.

When we compare this map to the one below, we see that the highest residential[9] electric rates in 2006 were generally in the states that allow retail access.



[9] These residential charges were for customers with monthly consumption of 1,000 kilowatt-hours (KWH).

Survey of Residential Rates

Open Market Rates in Other States

California was an early participant in electric choice. Southern California was rocked with a then record-breaking 55% increase in electric rates in 2001 by Pacific Gas & Electric Co. (PG&E). California eventually suspended transition but not before further increases shook the state. In 2006, residential customers in San Francisco:

- Who consume up to 1,430 kWh per month pay an average of 18¢ per kWh.
- Who consume more that 1,430 kWh, saw PG&E rate increases of 8.1% on September 1, 2006. The price climbed from 35¢ to 38¢ for every kilowatt-hour (kWh) consumed over 1,431 kWh in a 30-day period.[10]

As market-based pricing emerged on the east coast, those states did not fare any better.

- New York City saw a 2006 rate increase of 35.4%. New Yorkers presently pay close to 24¢ per kWh.
- Boston was hit with a 70.9% increase in its 2006 rates over 2005. Bostonians pay almost 21 cents per kWh.
- Springfield, Massachusetts saw a 94.6% increase in 2006. Its residents pay 17.1 cents per kWh.[11]
- An expected 72% increase in electricity prices aroused so much protest in Baltimore that the state legislature met in special session and arranged to phase in the higher costs over several years.
- Under Connecticut Light & Power, residential electric rates rose 28 percent last year and are scheduled to go up another 50 percent in 2007. Residential customers are paying more than 20¢ per kWh.

Compare these to the Ohio FirstEnergy companies who have had their residential rates at approximately 11¢ per kWh over the last decade. (See Table 1 in the Appendix for a ranking of 2007 residential electric rates in open market states and Ohio.)

In a nationwide study of electric costs, Dr. Kenneth Rose concluded that wherever rate caps are expiring, high increases in electric rates follow. [12] Even more alarming is the fact that no sustainable or robust market for the retail sale of electricity for residential customers has developed.

10 The Sacramento Bee, "Hikes in PG&E Rates Looming: Biggest Power Users Can Expect Increase Sept. 1 – and Maybe Another Soon After", August 22, 2006.

11 Lincoln Electric Service Rate Survey, Jan 1, 2006 @ www.csu.org/customer/rates/11923.pdf

12 Barbara R. Alexander, Consumer Affairs Consultant, " Summary of Recent State Default Service Developments", Virginia, November 2006

Open Market Rates in Ohio's Neighboring States

Ohio's neighboring states that have recently opened their doors to electric choice have not fared any better.

- Illinois, under standard electric rate schedules, have seen 45% increases in 2007. Those previously under "special" contracts have seen their rates climb more than 100%. Some customers are given the option of amortizing the increases over three years.
- Pennsylvania customers continue to see a series of devastating rate increases which began in 2006.
    - Due to an auction that was held immediately after Hurricane Katrina in the summer of 2005, Pike County Light & Power customers saw their generation price jump 125%, which resulted in an overall electric rate increase of 75% by February, 2006. [13]
    - On January 1, 2007, industrial customers in Penn Power territory (a FirstEnergy company) were hit with a 60.7% increase. In a one-two punch, the employees of these businesses saw their residential rates leap 32.4%, climbing from 12.3¢ to 16.3¢ per kWh. With the exception of Duquesne Light, all other Pennsylvania utilities have negligible switching.

What can we learn from Pennsylvania which now has experienced "choice" up close since 2006?

> Testimony from the PUC hearing shows that local companies and organizations such as Duquesne Light Holdings, U.S. Steel Corp., AK Steel Corp., Allegheny County and the Allegheny Conference are all concerned that rising electricity prices -- which can account for as much as 30 percent of some manufacturer's production costs -- will dissuade new business from locating here, drive away existing businesses or prevent companies from investing in local facilities.
>
> Instead of promoting competition, the current plan has simply created artificially high prices and jeopardized economic development in Duquesne's service territory," Downtown-based Duquesne Light said in a written statement submitted to the PUC.[14]

The Citizens Utility Board of Illinois has concluded that electric rate increases in that state will have a significant impact on the state's economy. "…the ComEd and Ameren rate hikes that took effect January 2 will result in the loss of some 20,341 Illinois jobs. In addition to causing hardship for individual employees out of work, those job losses have a ripple effect throughout the state."[15]

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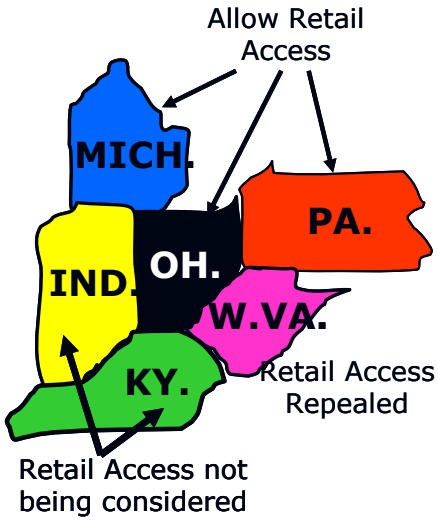
13 Barbara R. Alexander, Consumer Affairs Consultant, "Summary of Recent State Default Service Developments", Virginia, November 2006.

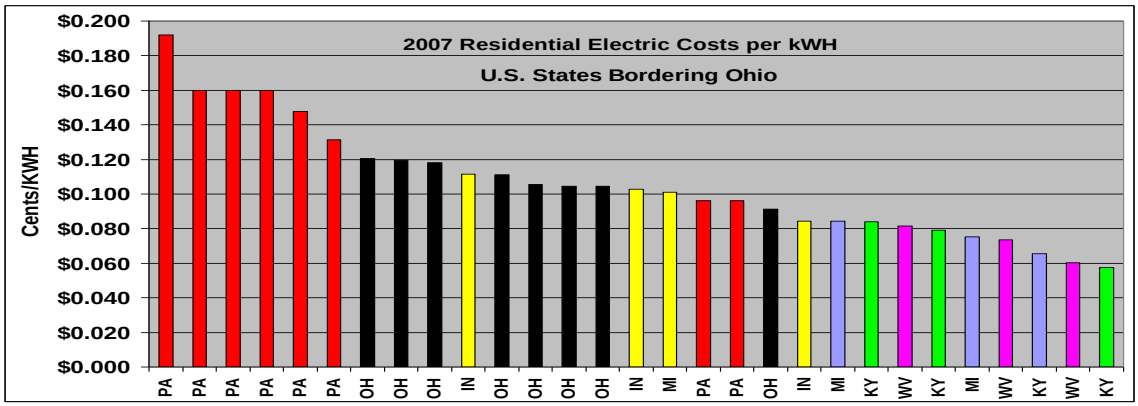
14 Jennifer Curry, "Local Electric Rates on the Rise…Large industrial, commercial users say cost makes Pa. less competitive", Pittsburgh Business Times, June 30, 2006

15 Citizens Utility Board, "Fewer Jobs for Illinois: The economic Impact of the ComEd and Ameren Rate Hikes", February 2007, page 6

If Ohio's rates increase, there would be greater pressure for businesses and employees to move to four of the five states bordering Ohio. While Michigan, Pennsylvania and Ohio are deregulating, Indiana, Kentucky and West Virginia are not; they have some of the lowest electric costs in the United States.

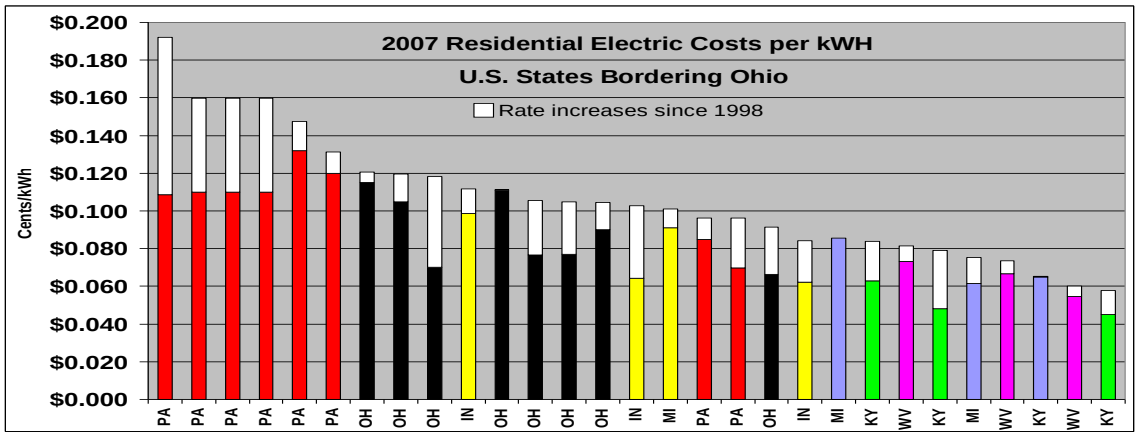
The graph below shows a comparison of Ohio's 2007 residential electric rates (in black) for its 8 largest utilities to those in the five states bordering Ohio. Our data base includes 21 utilities from Michigan, Indiana, Kentucky, West Virginia and Pennsylvania. (See Table 2 in the Appendix for the supporting data.)





In the five bordering states, only Pennsylvania (in red) has electric rates surpassing Ohio (in black). Indiana's rates (in yellow) are comparable to Ohio's while Michigan (in blue), Kentucky (in green) and West Virginia (in purple) continue to have an advantage over Ohio.

The graph below shows the rate increases seen in these states since 1998. Since transitioning to market-based pricing for POLR service in 2006, most Pennsylvania electric rates have climbed even above Ohio's highest electric rates found under FirstEnergy.



The Reality for Residential Customers

With no sustainable or robust market for the retail sale of electricity, there is an almost complete lack of residential customer migration to alternative generation suppliers in deregulated states. (See the Switching Activity Tables in the Appendix for data on the migration in Illinois, Massachusetts, Pennsylvania and Texas as of January 1, 2006.)

The Electric Energy Market Competition Task Force examined the implementation of retail electric competition in seven states. In 2006, they reported to Congress that, "Few alternative suppliers currently serve residential customers, although industrial customers have additional choices. To the extent that multiple suppliers serve retail customers, prices have not decreased as expected, and the range of new options and services is limited."

The task force went on to speculate about the reasons for the lack of residential customer migration to alternative suppliers. "One reason why retail competition for small customers may be slow to develop is that it is difficult [to] for the consumer to find competitive supplier offers in the first place and to understand the terms and conditions of those offers. It also is unclear whether the effort to find this information is justified by the potential cost savings that can be realized. As and when there are more alternative suppliers, it may result in greater potential savings."[16]

Dr. Kenneth Rose documents the almost complete lack of customer migration or "shopping", and the lack of retail choice options for residential customers.

- When Boston Edison Company began restructuring in 1998, residential customers paid 2.8¢ per kWh.[17] Nine years later, residential rates are almost 21¢ per kWh. Over this same period of time, less than 1% of Boston Edison's residential customers migrated to another supplier[18]. Overall shopping throughout Massachusetts through 2006 is less than 10%.
- Maine's retail electric market has been in operation since March 1, 2000. The Maine PUC continues to report that there is little retail market activity in the residential and small commercial sectors of the state.[19]
- The overall state migration rate for residential customers is about 10%, but this average masks significant differences among the electric utilities.[20]

Mayor Bill White of Houston, Texas recently commented that deregulation has failed to lower electric bills in Texas. He wrote, "…consumers – particularly lower-income families and seniors struggling to get by – have stuck with their old suppliers even at higher prices, partly because of fear of change. So, many who can least afford it now pay the most."[21]

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[16] The Electric Energy Market Competition Task Force, Report to Congress on Competition in the Wholesale and Retail Markets for Electric Energy – Draft, June 5, 2006, pages 4 and 6.
[17] Barbara R. Alexander, Summary of Recent State Default Service Developments, November 2006
[18] Massachusetts electric migration statistics are published monthly by the Massachusetts Division of Energy Resources: http://www.mass.gov/Eoca/docs/doer/2006migrate.pdf.
[19] Maine Public Utilities Commission, Annual Report on Electric Restructuring, December 31, 2006, page 9.
[20] New York PSC, Electric Retail Access Migration Reports, available at: www.dps.state.ny.us/Electric_RA_Migration.html. The most recent report was issued in June 2006.
[21] Houston Chronicle, Mayor Bill WhiteElectricity debacle bearing down on Texas unless … Legislature must empower PUC to protect consumers", March 6, 2007.

Consumer affairs consultant Barbara R. Alexander studied the development of POLR service for residential customers. She writes, "Any approach that seeks to pass through market-based prices to residential customers will increase price volatility due to the 'abnormalities' that have occurred and that are likely to continue to occur in the infancy of the wholesale market and the development of regional transmission organizations."[22]

Thus, we have no reason to expect that a move to market-based pricing for POLR supply in Ohio in 2009 will result in real customer choice and reduced costs for residential customers.

[22] Barbara R. Alexander, Default Service: Can Residential and Low Income Customers be Protected when the Experiment Goes Awry?, April 2001

Lessons Learned

Political Action Required

Under deregulation, local utilities are required to separate themselves from responsibility over the operation of generation and transmission assets. Based on FERC's policies and decisions, much of the responsibility for the wholesale electric market and transmission has been delegated to regional transmission organizations ("RTOs"). Ohio is one of the states that is actually split between two RTOs. Due to the fact that RTOs cross multiple state borders[23], jurisdiction over transmission (see FERC map below) coordination between FERC/RTO regulation and state regulation becomes more necessary and important. To date this coordination has been missing and perhaps, as an unintended consequence, leaves states with less ability to shape outcomes.

(Map courtesy of the Federal Energy Regulatory Commission)

Ohio is subject to the same "markets" and the same laws of physics as other states. There is no reason to believe that our experience would be any different beginning January 1, 2009.

The protections of Ohio's rate stabilization plans are temporary. It is not a question of whether they will expire it is a question of when. Court actions initiated by certain stakeholders such as the Office of Consumers Counsel ("OCC") could accelerate the end of the RSPs. The Ohio legislature and the PUCO have yet to address the vacuum that currently looms at the beginning of 2009 as described above. Unless decisive action is taken in 2007 to put in place a longer-term plan to protect Ohio from the existing dysfunctional electric market, we can expect electric rates to increase significantly on January 1, 2009 as they have in other states.

Ohio Stakeholders must take action in 2007 to effectively manage the risk of electric "rate shock" that has already hit many states. The policies, plans and actions of federal and state agencies have to be complementary (rather than working at cross

[23] Texas' RTO is self contained and therefore not subject to FERC authority.

purposes) to facilitate the coordination and cooperation we must have given the division of governmental authority.

The Industrial Energy Users – Ohio (IEU-Ohio) has developed an approach that addresses present electric generation issues at the local, state and federal level. (See www.ieu-ohio.org/information/education/.) IEU-Ohio has carefully reviewed the dynamics of the marketplace and has mapped out general strategies we need to implement before it will be possible to determine what role a competitive market can play to ensure a reliable supply at reasonable prices.

The OCC continues to press for Ohio to embrace "competition" as soon as possible. The OCC even goes as far as to continue its claim that it was a mistake not to go to open market at the end of 2005. On the second page of the OCC's "Biennial Report on the State of Electric Restructuring" under the section titled, "Summary of Conclusions", the OCC states the following:

> *The bottom line is that in the six years subsequent to the passage of Senate Bill 3, competition has never had the chance it was entitled to under the law. As a result, due to lost opportunities in the competitive market, customers in some parts of the state are possibly paying higher electric rates than they otherwise should have, had the plans for competition been properly structured in accordance with the law.*[24]

Consumer affairs consultant Barbara Alexander has concluded that competitive markets have not yielded the expected results. She writes, "Clearly, there is a growing disconnection between the promises that state legislators and regulators have presented as the basis for the move to retail competition and the actual prices that the wholesale market is pressing to send through to retail customers. Furthermore, the move to competition has transferred the power to set rates for retail customers from the state regulators to FERC because of the growing importance of the operation of the wholesale market in the establishment of retail prices…The transfer of authority from the states to FERC in the development of a competitive electricity market will have significant impacts on residential and low income customers who are captives of the Default Service provider."[25]

The Industrial Energy Users – Ohio (IEU-Ohio) has developed an approach that addresses present electric generation issues at the local, state and federal level. (See www.ieu-ohio.org/information/education.) IEU-Ohio has carefully reviewed the dynamics of the marketplace and has mapped out general strategies we need to implement before it will be possible to determine what role a competitive market can play to ensure a reliable supply at reasonable prices.

[24] Janine L. Migden-Ostrander, The Ohio Consumers' Counsel, *Biennial Report to the Ohio General Assembly on the State of Electric Service Restructuring*, February 2007

[25] Barbara R. Alexander, *Default Service: Can Residential and Low Income Customers Be Protected when the Experiment Goes Awry?"*, April 2001

Conclusions

Based upon the results of electric restructuring in other states, it appears that SB 3's timeline continues to be overly optimistic, even for a January 1, 2009 start date. Federal policymakers have not yet created a wholesale "market" that will produce the price efficiencies that one would expect to see arising from a truly competitive market. We conclude that competition has repeatedly been given a chance in one state after another over the last decade with disastrous results for customers. Many of the deficiencies in deregulated open markets are beyond the control of individual states. States cannot control FERC and the RTOs under FERC's watch.

Ohio is one of the most energy-intensive states in the nation, and as a result, it has more at stake as a result of its energy choices. It is critical for the economic health and competitiveness of Ohio to examine the long-range consequences of the decisions and actions taken today. In order to encourage businesses to stay and locate in Ohio, we need to create energy price and service outcomes that provide a strategic energy advantage in an increasingly global economy.

The realities of today's economy mean that we must have fair electricity pricing that allows to us to be competitive domestically and internationally. We understand that the pricing result we must have involves a balancing of interests that ensures competitive prices while providing sustainability for our electric suppliers.

If no action is taken and Ohio proceeds to open market on January 1, 2009, as the OCC suggests, we expect that residential, commercial and industrial customers would see rate jumps of 30% to 70% in 2009. We endorse an IEU-Ohio plan that requires urgent action on several fronts to effectively manage the risk of electric rate shock that has already arrived in many states.

- At the state level, the Ohio Legislature should give the Public Utility Commission more power to protect Ohio's economy and consumers. Without improved regulatory authority, Ohioans risk the type of instability that is devastating states through out the U.S.

- At the federal level Ohio stakeholders need to actively pressure the FERC to compliment Ohio's efforts to ensure that its citizens have access to reliable and reasonably priced electricity.

The choice between regulation and competition is a choice between the means to better serve consumers and the public interest with reliable service and reasonable prices. If the aforementioned action is not taken, the consequences for Ohio will be disastrous. All Ohioans will experience a jolt every time they open their electric bills beginning in 2009!

Data Sources

Lincoln Electric System, National Electric Rate Survey, Ranking of Typical Residential, Commercial and Industrial Electric Bills, January 1, 2006.

Lincoln Electric System (LES) collected data on electric rates in 106 U.S. cities (served by Municipals or Investor-owned Utilities) based on monthly electric bills by various categories of usage for residential, commercial and industrial rates in effect on January 1, 2006.

LES originally selected cities in 1984 to be included in the rankings based on the following criteria:

- Cities with a population greater than 100,000
- A minimum of one city from every state
- A maximum of three cities from any state

LES obtained the majority of the data for investor-owned utilities from the Rate Regulation Department of the Edison Electric Institute (EEI) publication, *Typical Bills and Average Rates Report, winter 2006*. The data for municipal utilities and investor-owned utilities not included in the EEI publication was obtained through a survey conducted by LES. No attempt was made to verify either the data obtained from the survey or the EEI publication.

Brakey Consulting supplemented the data from the LES survey to add more Ohio utilities. The LES survey included the Ohio cities of Cleveland (the Illuminating Company), Columbus (AEP) and Cincinnati (Cincinnati Gas & Electric). Based upon our knowledge of Ohio electric rates, we expanded the data to include the following cities and utilities:

- Akron (Ohio Edison)
- Canton (Ohio Power)
- Cleveland (Cleveland Public Power)
- Dayton (Dayton Power and Light)
- Toledo (Toledo Edison)

We also reviewed and corrected some data for Columbus (AEP).

Brakey Consulting did research on-line to supplement data with:

- Electric rates in more than 70 additional cities outside Ohio
- Information on demand windows, power factor charges, seasonal variations and ratchet clauses for more than 150 utilities.
- Rate increases since January 1, 2006

Glossary of Terms

Distribution (or Delivery) Charges: The charges for delivering electricity from the transmission system to a customer's home or business.

Generation Charges: The charges for generation supplied to retail customers. This excludes charges for transmission or other charges related to electric service.

Federal Energy Regulatory Commission (FERC): A quasi-independent regulatory agency within the Department of Energy having jurisdiction over interstate electricity sales, wholesale electric rates, hydroelectric licensing, natural gas pricing, oil pipeline rates, and gas pipeline certification.

Kilowatt hour: A kilowatt hour is a measure of electricity equal to 1,000 watts in one hour.

Open Market Electric Rates: Rates for electric generation that are established in an unregulated, competitive market through competitive bidding or through negotiations between the buyer and seller.

Provider of Last Resort (POLR): The local distributing company (LDC) or utility. The POLR provides a market-based Standard Offer Service for customers whose price freeze service has ended and who have not selected an alternative generation supplier.

Rate Schedule: A series of calculations to determine the monthly electric bill. Utilities have different rate schedules for different customer types. For example, there are rate schedules that are only available to residential customers. Other rate schedules might have requirements related to the amount of electricity used, or the type of operation.

Residential: A rate schedule applicable to residential installations in a single family house, a single suite in a multiple family house, or a single suite in an apartment building.

Transmission Charges: The charges for the cost of transporting electricity over high-voltage wires from the generator to the distribution system of the public utility.

About Brakey Consulting

Brakey Consulting, Inc. is an Ohio-based company providing energy consulting services to about 40 industrial and commercial businesses with facilities in over 100 locations in the greater Cleveland, Akron, Toledo and Youngstown areas. Brakey Consulting fills a void for companies who do not have an energy manager on staff. Our services include:

- Helping companies identify electric cost saving opportunities, such as improving power factor or scheduling efficiency, or switching rate schedules
- Using gas marketers to implement hedging strategies for the purchase of natural gas
- Sponsoring an association, known as MICA, for whom Brakey Consulting proactively keeps up to date on energy suppliers and energy prices
- Representing MICA members at meetings of the Industrial Energy Users – Ohio (IEU), an energy lobbying group based in Columbus, Ohio
- Working closely with our sister company, EnergyManager.com, to provide on-line electric bill audits and analysis

Michael Brakey, President and founder of Brakey Consulting, has energy-related experience in the manufacturing setting. Immediately before starting Brakey Consulting in 1999, Mike held various posts over a 22-year career at Johnson Rubber Company in Middlefield, Ohio. His accomplishments there included the implementation of manufacturing strategies that led to energy cost reductions in excess of $20 million. Mike has a B.S. in engineering physics from the University of Maine and an E.M.B.A. from Baldwin-Wallace College.

Lucinda Brakey, Vice President, joined the firm in January 2005. Prior to that, Cindy had a 20-year career as a consulting actuary for Towers Perrin in Cleveland, Ohio. Cindy also serves as vice president of EnergyManager.com. She has a B.A. in mathematics from the University of Maine and an M.A. in actuarial mathematics from the University of Michigan.

Matthew Brakey, Vice President, joined the firm in June 2004. Matt is also president of EnergyManger.com. He has a B.A. in political science from Miami University.

Appendix

Table 1: Ranking of POLR Residential Rates in Open Market States

Highest 28 residential electric rates[26] for 2007 for utilities found in states active in open markets (based on consumption of 500 kWh).

	State	City	Increase 2006 over 2005	Increase 2007 over 2006	2007 Cost/kWh for 500 kWh	2007 Cost/kWh for 1,000 kWh	Name of Utility (M) - Municipal (I) - Investor-Owned
1	New York	New York City (I,W)	35.4%	0.0%	$0.251	$0.238	Consolidated Edison Company of New York (I)
2	Connecticut	Bridgeport (I,W)	3.3%	50.0%	$0.234	$0.230	United Illuminating Company (I)
3	Connecticut	New Haven (I,W)	3.3%	50.0%	$0.234	$0.230	United Illuminating Company (I)
4	Massachusetts	Boston (I,W)	70.9%	0.0%	$0.214	$0.207	Boston Edison Company (I)
5	Massachusetts	Cambridge (I,W)	85.5%	0.0%	$0.210	$0.204	Cambridge Electric Company (I)
6	Maryland	Washionton D.C. (I)		39.0%	$0.208	$0.189	Potomac Electric Power Company (I)
7	Connecticut	Waterbury (I,A)	28.9%	16.0%	$0.206	$0.195	Northeast Utility-Connecticut Light & Power Company (I)
8	New York	Hempstead (I,W)	42.3%	0.0%	$0.202	$0.200	Long Island Public Authority (I)
9	Massachusetts	Brockton (I)		0.0%	$0.200	$0.198	Massachuttetts Electric Company (I)
10	Maryland	Georgetown (I)		35.0%	$0.196	$0.178	Delmarva Power & Light (DPL-Maryland) (I)
11	Maryland	Knoxville (I)		35.0%	$0.196	$0.178	Allegheny Power
12	Maryland	Unlisted (I)		35.0%	$0.196	$0.178	PEPCO
13	Pennsylvania	Milford (I)	3.2%	73.0%	$0.194	$0.190	Pike County Light & Power Company
14	Massachusetts	Springfield (I,A)	94.6%	0.0%	$0.171	$0.162	Western Massachusetts Electric Company (I)
15	Texas	Dallas (I,W)	10.4%	0.0%	$0.169	$0.154	TXU Energy (I)
16	Pennsylvania	Erie (I,W)	3.2%	32.4%	$0.162	$0.158	Pennsylvania Electric Company F(I)
17	Pennsylvania	Johntown (I)		32.4%	$0.162	$0.158	Penelec (I)
18	Pennsylvania	New Castle (I)	6.2%	32.4%	$0.162	$0.158	Penn & Pennsylvania Power Company (Penelec) (I)
19	Rhode Island	Pawtucket (I,A)	8.4%	0.0%	$0.162	$0.159	Narragansett Electric Company (I)
20	New Hampshire	Manchester (I,A)	12.9%	0.0%	$0.154	$0.145	Public Service Company of New Hampshire (I)
21	Pennsylvania	Philadelphia (I,W)	0.0%	0.0%	$0.150	$0.145	PECO Energy (I)
22	New Jersey	Newark (I,W)	8.2%	0.0%	$0.135	$0.123	Public Service Electric & Gas Company (I)
23	New Jersey	Paterson (I,W)	8.2%	0.0%	$0.132	$0.120	Public Service Electric & Gas Company (I)
24	Pennsylvania	Pittsburgh (I,A)		9.0%	$0.132	$0.131	Duquesne Light Company (I)
25	Delaware	Dover (M)		0.0%	$0.132	$0.120	City of Dover (McKee Run G.S.)
26	New York	Buffalo (I,W)	16.9%	0.0%	$0.130	$0.115	Niagara Mohawk Power Corporation (I)
27	Illinois	Chicago (I,W)	-0.1%	40.0%	$0.129	$0.118	Commonwealth Edison Company (I)
28	Illinois	Rockford (I,W)	-0.1%	40.0%	$0.123	$0.112	Commonwealth Edison Company (I)

M – Municipally-owned utility
I – Investor-owned utility
W – Winter rates are in effect
A – Annual rates are in effect

26 These rates include the generation costs charged by the Provider of Last Resort (POLR), which is the local distributing company (LDC) or utility. The generation costs available from alternative suppliers may be less. POLR provides a market-based Standard Offer Service for customers whose price freeze service has ended and no supplier has been selected.

Table 1 (Continued): Ranking of POLR Residential Rates in Open Market States

Second 28 highest residential electric rates for 2007 for utilities found in states active in open markets and Ohio (based on consumption of 500 kWh)

	State	City	Increase 2006 over 2005	Increase 2007 over 2006	2007 Cost/kWh for 500 kWh	2007 Cost/kWh for 1,000 kWh	Name of Utility (M) - Municipal (I) - Investor-Owned
29	Ohio	Akron (I,W)	1.0%	0.0%	$0.121	$0.118	Ohio Edison (I)
30	Texas	El Paso (I,W)		0.0%	$0.121	$0.116	El Paso Electric Company (I)
31	Ohio	Toledo (I,W)	1.0%	0.0%	$0.121	$0.121	Toledo Edison (I)
32	Maine	Portland (I,A)		0.0%	$0.120	$0.126	Central Maine Power Company (I)
33	Arizona	Phoenix (I,W)	2.5%	4.4%	$0.115	$0.115	Arizona Public Service Company (I)
34	Illinois	Decatur (I)		0.0%	$0.114	$0.111	Ameren- (IP)
35	Illinois	Pawnee (I)		0.0%	$0.114	$0.111	Ameren- (CIPS)
36	Illinois	Peoria (I)		0.0%	$0.114	$0.111	Ameren- (CILCO)
37	Ohio	Cleveland (I,W)	1.0%	0.0%	$0.113	$0.110	Cleveland Electric Illuminating Company (I)
38	Ohio	Dayton (I,W)	11.0%	5.4%	$0.111	$0.098	Dayton Power & Light (I)
39	Ohio	Columbus (I,W)	9.0%	5.0%	$0.108	$0.103	Columbus Southern Power Rate Area (I)
40	Ohio	Cincinnati (I,W)	24.2%	9.1%	$0.107	$0.102	Cincinnati Gas & Electric Company (I)
41	Pennsylvania	Reading (I)		18.0%	$0.104	$0.088	Metropolitan Edison Company (I)
42	Pennsylvania	Unlisted (I)	33.4%	18.0%	$0.104	$0.088	West Penn Power (I)
43	Delaware	Wilmington (I,W)	2.1%	0.0%	$0.099	$0.090	Delmarva Power & Light (i)
44	Michigan	Detroit (I,W)	3.2%	0.0%	$0.098	$0.104	Detroit Edison Company (DTE Energy) (I)
45	Arizona	Mesa (M,W)	-12.3%	4.4%	$0.096	$0.077	Salt River Project (M)
46	Oregon	Portland (I,A)	9.8%	9.0%	$0.096	$0.091	Portland General Electric Company (I)
47	Maryland	Baltimore (I,W)	-4.4%	15.0%	$0.096	$0.087	Baltimore Gas & Electric Company (I)
48	Arizona	Tucson (I,W)	4.5%	4.4%	$0.095	$0.090	Tucson Electric Power Company (I)
49	Illinois	Springfield (M,W)	11.7%	40.0%	$0.095	$0.090	City of Springfield, IL City Water Light & Power Dept. (M)
50	Ohio	Canton (I,W)	19.0%	10.0%	$0.095	$0.088	Ohio Power Rate Area (I)
51	District of Columbia	Washington, DC (I,W)	40.4%	0.0%	$0.090	$0.093	Potomac Electric Power Company (I)
52	Michigan	Grand Rapids (I,W)	-2.6%	0.0%	$0.084	$0.084	Consumers Energy (I)
53	Texas	Austin (M,W)	39.1%	0.0%	$0.084	$0.090	Austin Energy (M)
54	Oregon	Albany (I)		0.0%	$0.077	$0.070	Pacific Power Corp. (I)
55	Michigan	Lansing (M,W)	9.7%	0.0%	$0.077	$0.074	Lansing Board of Water & Light (M)
56	Oregon	Eugene (M,W)	-4.0%	0.0%	$0.077	$0.074	Eugene Water & Electric Board (M)

M – Municipally-owned utility
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Table 2: Residential Electric Rates in Ohio and Bordering States

Residential electric rates for utilities found in Ohio and the five bordering states (based on consumption of 750 kWh). The 2007 rates are ranked from highest to lowest. Also shown are the 1998 rates, the 2006 increase percentage and the 2007 increase percentage.

		1998 Electric Costs	Increase 2006 over 2005	Increase 2007 over 2006	750 kWh average	Name of Utility (M) - Municipal (I) - Investor-Owned
Pennsylvania	Milford (I)	$0.109	3.2%	73.0%	$0.192	Pike County Light & Power Company
Pennsylvania	Erie (I,W)	$0.110	3.2%	32.4%	$0.160	Pennsylvania Electric Company F(I)
Pennsylvania	Johntown (I)	$0.110		32.4%	$0.160	Penelec (I)
Pennsylvania	New Castle (I)	$0.110	6.2%	32.4%	$0.160	Penn & Pennsylvania Power Company (Penelec) (I)
Pennsylvania	Philadelphia (I,W)	$0.132	0.0%	0.0%	$0.148	PECO Energy (I)
Pennsylvania	Pittsburgh (I,A)	$0.120		9.0%	$0.131	Duquesne Light Company (I)
Ohio	Toledo (I,W)	$0.115	1.0%	0.0%	$0.121	Toledo Edison (I)
Ohio	Akron (I,W)	$0.105	1.0%	0.0%	$0.120	Ohio Edison (I)
Ohio	Cleveland (M,A)	$0.070	3.0%	0.0%	$0.118	Cleveland Public Power (M)
Indiana	Gary (I,A)	$0.099	5.1%	0.0%	$0.112	Northern Indiana Public Service Company (I)
Ohio	Cleveland (I,W)	$0.111	1.0%	0.0%	$0.111	Cleveland Electric Illuminating Company (I)
Ohio	Columbus (I,W)	$0.077	9.0%	5.0%	$0.106	Columbus Southern Power Rate Area (I)
Ohio	Cincinnati (I,W)	$0.077	24.2%	9.1%	$0.105	Cincinnati Gas & Electric Company (I)
Ohio	Dayton (I,W)	$0.090	11.0%	5.4%	$0.104	Dayton Power & Light (I)
Indiana	Evansville (I,W)	$0.064	10.0%	0.0%	$0.103	Southern Indiana Gas & Electric Company (I)
Michigan	Detroit (I,W)	$0.091	3.2%	0.0%	$0.101	Detroit Edison Company (DTE Energy) (I)
Pennsylvania	Reading (I)	$0.085		18.0%	$0.096	Metropolitan Edison Company (I)
Pennsylvania	Unlisted (I)	$0.070	33.4%	18.0%	$0.096	West Penn Power (I)
Ohio	Canton (I,W)	$0.066	19.0%	10.0%	$0.091	Ohio Power Rate Area (I)
Indiana	Indianapolis (I,A)	$0.062	7.9%	0.0%	$0.084	Indianapolis Power & Light Company (I)
Michigan	Grand Rapids (I,W)	$0.086	-2.6%	0.0%	$0.084	Consumers Energy (I)
Kentucky	Paducah (M)	$0.063		0.0%	$0.084	Paducah Power System (M)
West Virginia	Northern Parts (I)	$0.073	-1.9%	10.3%	$0.082	Monongahela Power (I)
Kentucky	Walton (I)	$0.048	0.0%	20.0%	$0.079	Duke Energy Kenucky
Michigan	Lansing (M,W)	$0.062	9.7%	0.0%	$0.075	Lansing Board of Water & Light (M)
West Virginia	Johnsontown (I)	$0.067		10.3%	$0.074	Potomac Edison Company (I)
Kentucky	Louisville (I,W)	$0.065	-1.9%	0.0%	$0.065	Louisville Gas & Electric Company (I)
West Virginia	Wheeling (I,A)	$0.055		0.0%	$0.060	Wheeling Power Rate Area (I)
Kentucky	Lexington (I,A)	$0.045	4.8%	0.0%	$0.058	Kentucky Utilities Company (I)

Switching Activity Tables

These swtiching activity tables are from the Electric Energy Market Competition Task Force's *Report to Congress on Competition in the Wholesale and Retail Markets for Electric Energy - Draft*, June 5, 2006

Illinois

Switching Activity: The degree to which customers have switched to delivery service from bundled service varies greatly between distribution franchise territories and classes of customers. Table 2 provides the switching statistics for the largest utilities franchise areas separated by customer type as of November 2005. As Table 3 indicates, the vast majority of switching activity is centered on the Commonwealth Edison distribution territory (which also has the largest load in the state). Lower levels of switching have taken place in the AmerenCILCO and AmerenIP areas and very little outside of these three.

Table 3: Illinois Switching to Alternative Suppliers as of November 30, 2005
% of Customers and (% of Load)

Firm and Usage In million kWh	Residential	Small C&I	Large C&I	Total
AmerenCILCO 461	0.0% (0.0%)	0.0% (0.1%)	2.2% (33.3%)	0.0% (15.4%)
AmerenCIPS 952	0.0% (0.0%)	0.2% (0.8%)	7.1% (4.1%)	0.0% (2.2%)
AmerenIP 1,496	0.0% (0.0%)	0.8% (8.9%)	29.8% (41.7%)	0.1% (23.2%)
AmerenUE 265	0.0% (0.0%)	0.0% (0.0%)	2.5% (0.2%)	0.0% (0.1%)
ComEd 91,508	0.0% (0.0%)	6.0% (36.6%)	73.9% (58.3%)	0.6% (32.8%)
MidAmerican	0.0%	0.0%	0.0%	0.0%

Massachusetts

Switching Activity: Table 12 shows the proportion of customers and load taking service from alternative suppliers in each utility distribution territory. In the Commonwealth territory, switching by residential customers is much higher than any other area of the state.

Table 12: Retail Customers and Load Supplied by Alternative Providers in January 2006
% of Customers and (% of Load)

Firm and load in MWh	Residential	Small C&I	Medium C&I	Large C&I
Boston Edison 1,498,476	0.3% (0.6%)	2.0% (3.5%)	7.9% (13.6%)	34.0% (50.0%)
Cambridge 154,540	0.2% (0.3%)	6.7% (13.5%)	8.4% (12.4%)	33.6% (52.6%)
Commonwealth 403,108	54.2% (51.8%)	55.0% (57.5%)	44.3% (46.2%)	65.6% (70.5%)
Fitchburg 47,256	0.0% (0.0%)	3.8% (2.9%)	4.8% 15.5%	72.7% (86.6%)
Mass. Electric 1,995,096	2.1% (2.4%)	7.4% (12.2%)	31.1% (29.3%)	58.1% (66.2%)
Nantucket 12,547	0.2% (1.3%)	4.4% (6.6%)	23.6% (29.3%)	50.0% (53.2%)
Western Mass.	0.5% (0.7%)	6.6% (11.9%)	32.4% (36.8%)	60.2% (76.3%)
Source: Mass. Department of Telecommunications and Energy				

Note: C = Commercial, I = Industrial

Pennsylvania

Switching Activity: At this point in time, retail switching activities are largely limited to the Duquesne Light distribution territory and to a lesser degree the PECO territory, as shown in Table 27.

Table 27: Pennsylvania Retail Customers and Load Supplied by Alternative Providers as of January 1, 2006 % of Customers and (% of Load)

Firm and Load in MWh	Residential	Small C&I	Large C&I	Total
Allegheny Power	0.0% (0.0%)	0.0% (0.0%)	0.0% (0.0%)	0.0% (0.0%)
Duquesne Light	19.7% (18.5%)	20.3% (52.3%)	43.4% (83.6%)	19.8% (48.0%)
MetEd/Penelec	0.0% (0.0%)	0.0% (0.0%)	(0.1%) (5.6%)	0.0% (1.6%)
PECO	0.9% (1.0%)	23.8% (13.2%)	2.0% (1.2%)	3.2% (4.9%)
PennPower	0.0% (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
PPL	0.0 (0.0%)	0.2 (0.7%)	0.3 (0.3%)	0.1 (0.3%)
UGI	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
Source: Pennsylvania Office of the Consumer Advocate				

Texas

Switching Activity: Retail customers have been migrating to alternative suppliers in all of the distribution territories with the highest switching rates in the AEP Central and North areas, as shown in Table 32.

Table 32: Retail Customers and Load Supplied by Alternative Providers as of January 1, 2006 % of Customers and (% of Load)

Firm and Load in MWh	Residential	Small C&I	Total
TXU	26.3% (26.2%)	30.7% (64.7%)	26.4% (50.4%)
Centerpoint	26.8% (27.3%)	34.5% (60.7%)	27.5% (47.8%)
AEP Texas Central	27.0% (31.3%)	45.8% (81.4%)	29.4% (63.8%)
AEP Texas North	33.2% (39.3%)	34.0% (78.7%)	31.9% (64.9%)
Texas NM Power	25.8% (29.9%)	35.0% (66.8%)	26.4% (56.0%)
Source: Texas Public Utility Commission			

Note: C = Commercial, I = Industrial