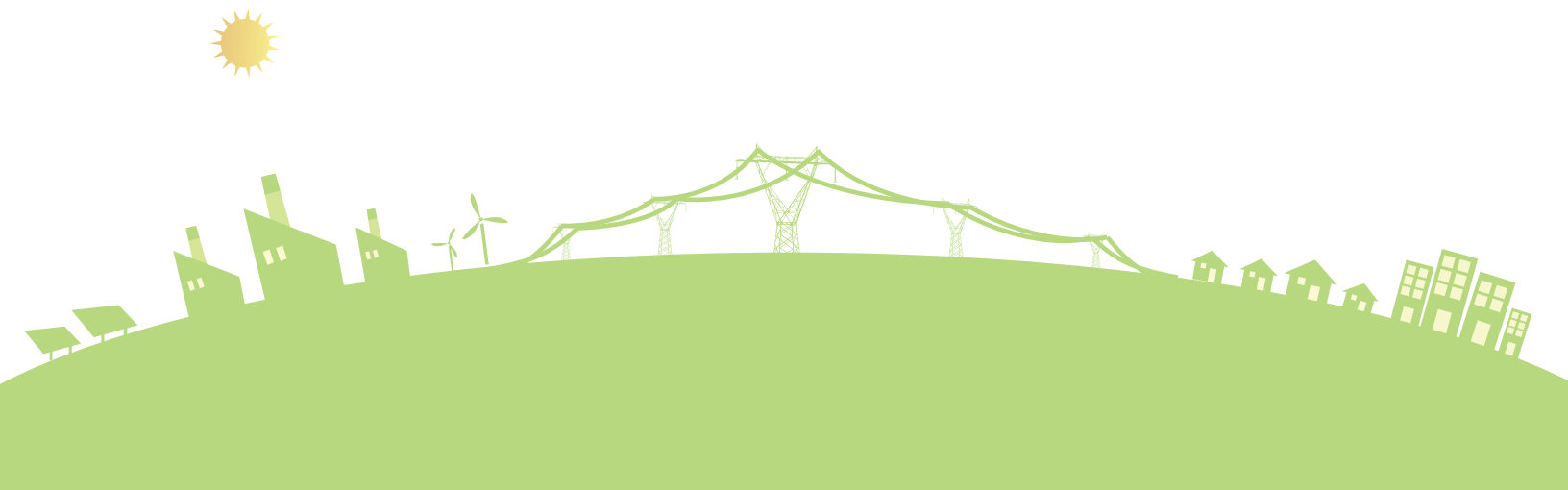




CUSTOMER CHOICE IN ELECTRICITY MARKETS: FROM NOVEL TO NORMAL

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All truth passes through three stages. First, it is ridiculed. Second, it is violently opposed. Third, it is accepted as being self-evident.

Arthur Schopenhauer ¹

CUSTOMERS ACT WHILE THE DEBATE CONTINUES

The policy debate over opening state-regulated retail electricity markets to competition is more than two decades old.² Yet with a full decade of broadly based customer choice experience there remains an active debate over the wisdom of ending enforced monopoly in electricity supply. Similar debates have largely been put to bed for other formerly price-regulated industries.

As it was with natural gas and telecommunications, in electricity it is customers who are leading the way, insisting on and exercising the opportunity to choose a competitive supplier even as the debate in policy circles persists.

The prolonged debate over electricity market reform can be blamed in great part on the long shadow cast by the California experience in 2000 and 2001. California's "experiment" with customer choice was saddled with a deeply flawed market design that failed to require or allow utilities to properly hedge their electricity supply costs. Forcing utilities to rely mainly on the day-ahead market in the early stages of customer choice to meet their obligations paved the way for failure. It was not so much a market failure as a regulatory failure that deterred other states from enacting retail choice policies or from proceeding to implement previously passed laws. This occurred even though the market design flaw that contributed to California's fiasco was avoided in all the other states that soldiered on with retail competitive reforms. Those states had guarded against incorporating the California flaw, assuring flexibility and options for risk management.³

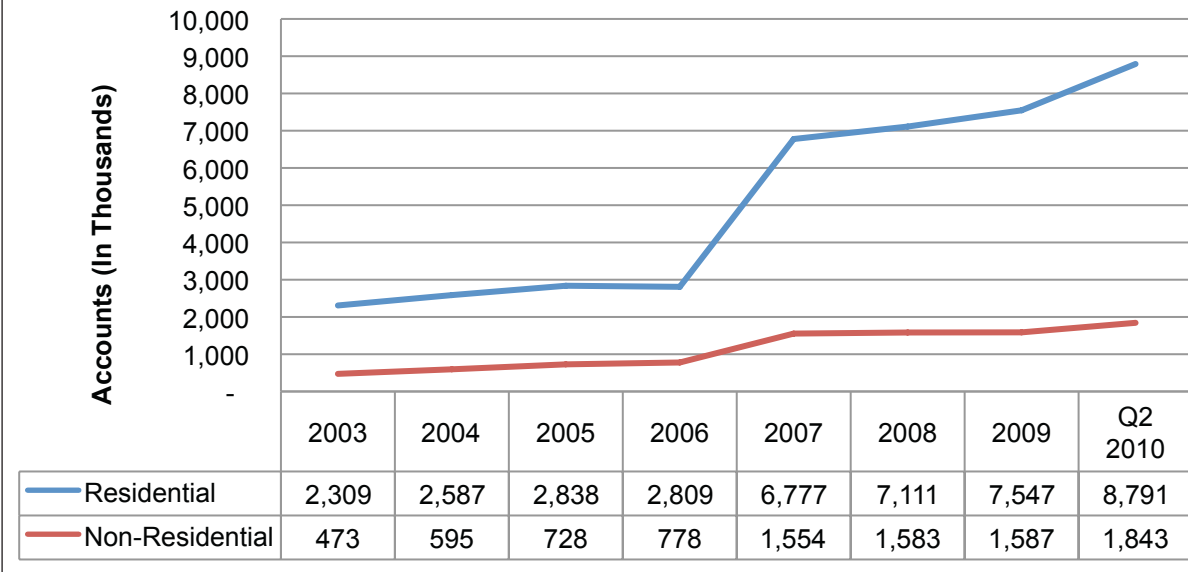
Today, retail customer choice in electricity is no longer an experiment - no longer a novelty. In 16 states and the District of Columbia, jurisdictions that account for over 40% of all electricity consumption in the continental United States,⁴ customer electricity choice is well established and widely accepted.

Even as the policy debate has continued over opening retail electricity to competition, millions of customers are opting for electricity choice and dramatically changing the facts on the ground.

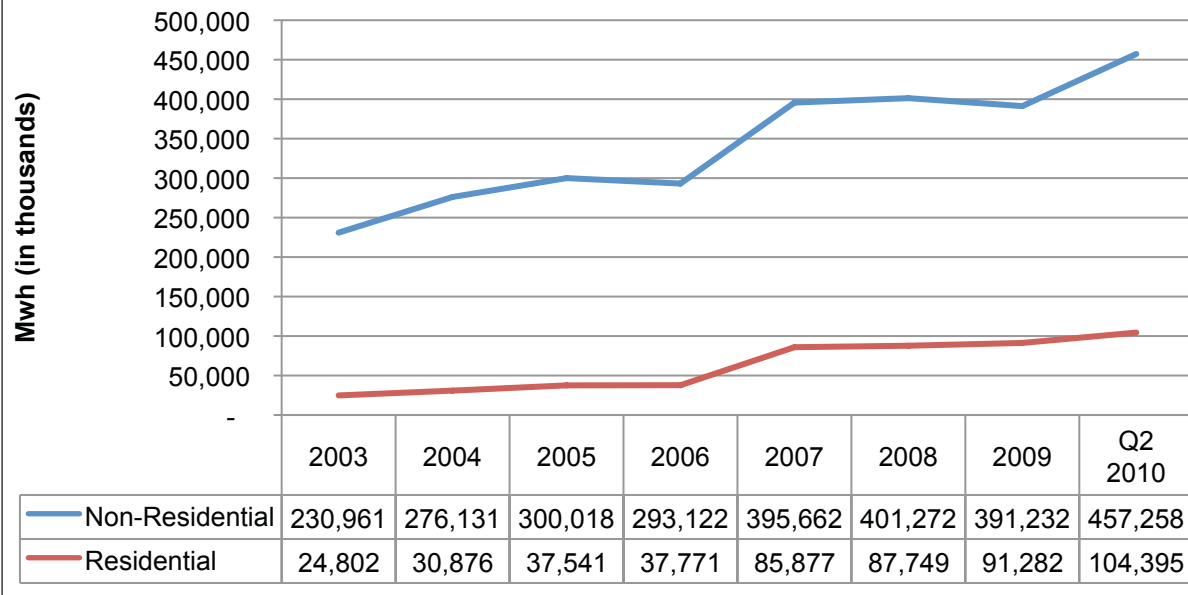
- Competitive volumes and accounts continue to increase, with nearly 9 million residential customers and over 1.8 million business and government customers exercising electricity choice in the 17 jurisdictions.
- Most jurisdictions that have elected competitive retail models have continued to move ahead, leading to a doubling of competitively served volumes between 2003 and 2010; and
- There is a growing awareness and understanding that electricity choice effectively accommodates and complements demand response, energy efficiency, integration of renewable resources and the emergence of the Smart Grid.

Meanwhile, outside the United States, developed economies around the world have been moving ahead with competitive restructuring and customer choice, including Canada, the European Union and United Kingdom, Australia, New Zealand, and parts of South America.⁵ Restructuring policies that support retail choice are sustained because retail choice has satisfied customers, delivered efficiency benefits and provided a supportive framework for an intelligent grid that integrates our energy use with environmental improvement and sustainability.

**Chart 1:
U.S. Competitive Retail Power Accounts
2003-2010**



**Chart 2:
U.S. Competitive Sales Volume (MWh)
2003-2010**

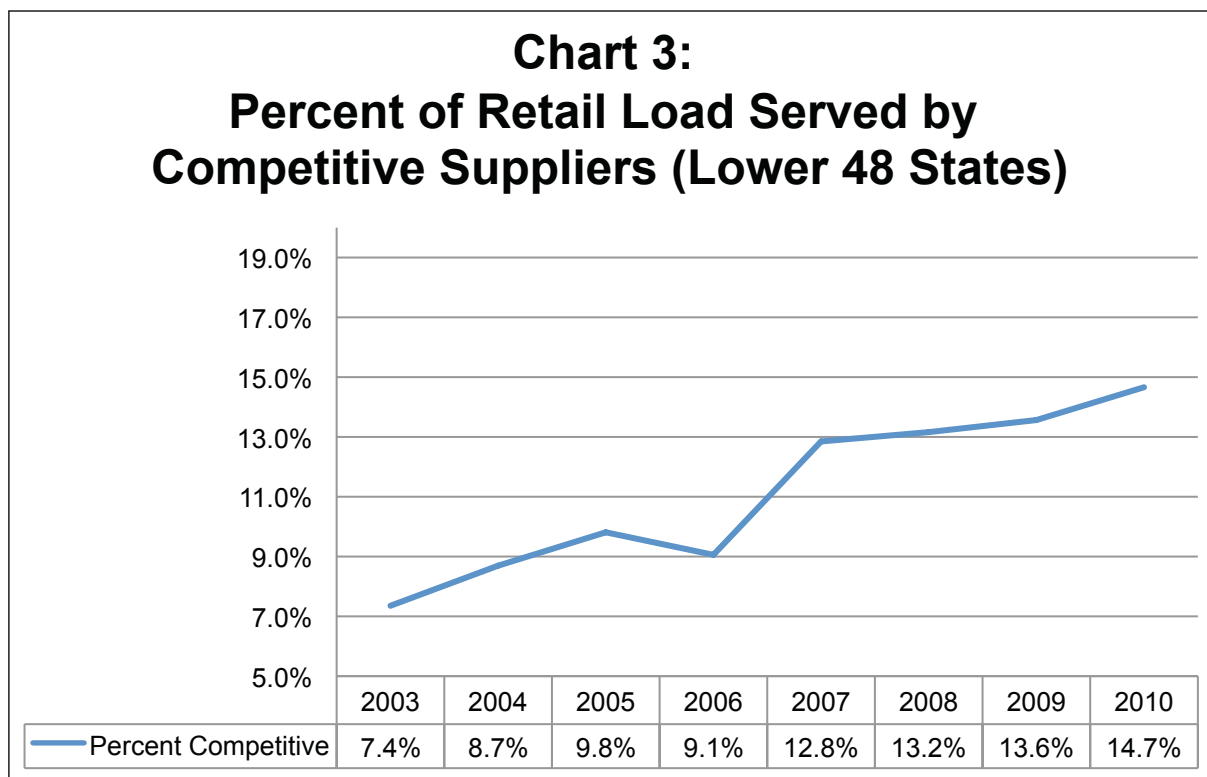


THE CUSTOMER CHOICE SURGE

By the middle of 2010, more than 1.8 million commercial and industrial (C&I) accounts in states with competitive markets were buying electricity from competitive suppliers under bilateral contracts, reports KEMA, the leading firm in collecting data on the competitive retail electricity market.⁷ Nearly 9 million residential customers were buying power from suppliers other than the traditional utility (Chart 1).⁸ KEMA's figures suggest national growth rates in the number of customer accounts from 2009 to mid-2010 at 17% for C&I accounts and 17.2% for residential customers.

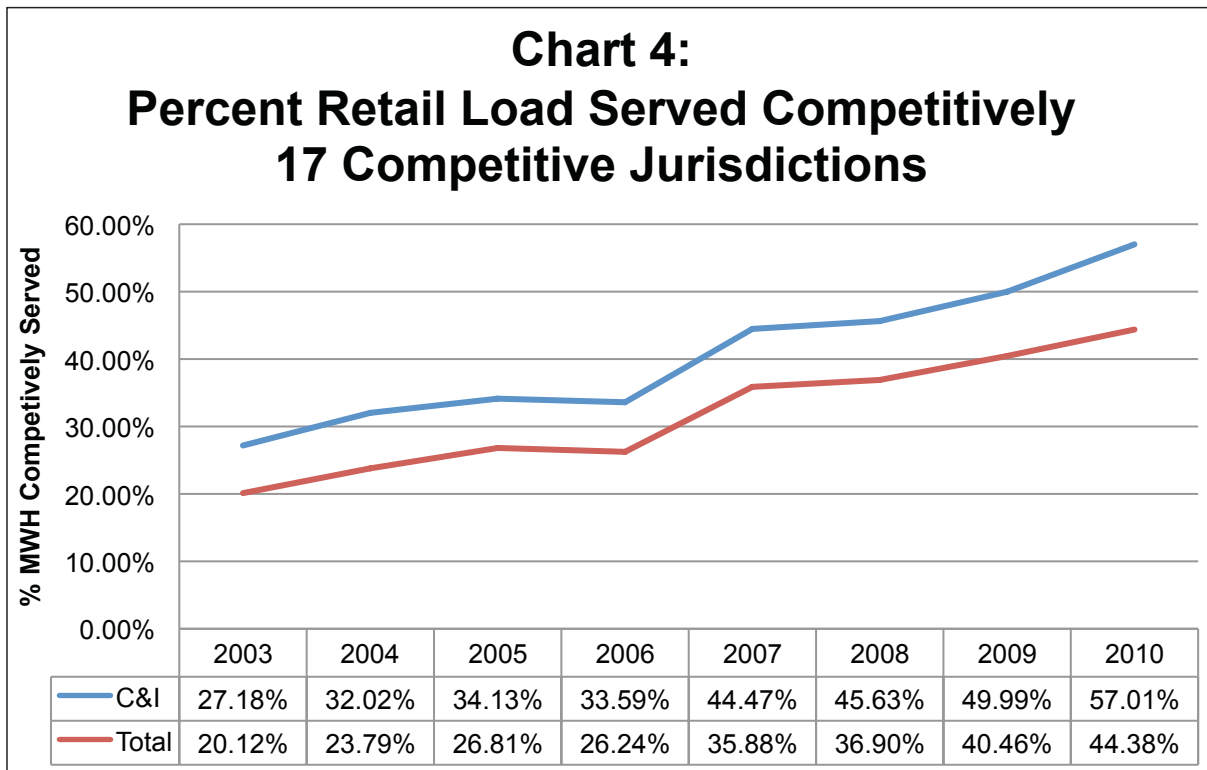
KEMA's statistics suggest a growth rate in estimated annualized competitive sales volume between 2009 and 2010 of 16.9% in the C&I sector and 14.4% for residential customers. KEMA estimates 2010 annualized demand for competitive C&I customers at nearly 460 million megawatt hours (MWh) for residential customers over 100 million MWh (Chart 2), for a total of 560 million MWh.

This aggregate annual demand of 560 million MWh represents almost 15% of electricity consumption in the lower 48 states (Chart 3). This is a doubling since 2003 of the share of total continental U.S. electricity sales volume accounted for by non-utility energy suppliers.



Year	Lower 48 Total MWH (000's)	Competitive MWH (000's)	Percent Competitively Served
2003	3,477,779	255,763	7.4%
2004	3,530,959	307,007	8.7%
2005	3,644,517	357,559	9.8%
2006	3,653,169	330,893	9.1%
2007	3,747,649	481,539	12.8%
2008	3,715,647	489,020	13.2%
2009	3,559,441*	482,831*	13.6%
2010	3,708,938*	543,797*	14.7%

The growth of the competitive share of national sales volumes from zero to 15% in the past decade understates the case. While more than one out of 7 MWh nationally is served competitively at retail, competitive providers are currently supplying more than 44% of eligible demand in the 17 competitive jurisdictions, having doubled from about 20% in 2003. Further, in the customer choice jurisdictions a majority of all eligible non-residential is served competitively, having more than doubled from 27% in 2003 to 57% in 2010 (Chart 4). The reality is that when given the opportunity to switch to competitive suppliers, customers do so in great numbers. They are seeking innovative energy products and solutions as they contribute to forging a more efficient market for everyone else as well.



CUSTOMERS SWITCH – FOR THE BENEFITS OF A COMPETITIVE MARKET

Much of the switching by customers to competitive providers over the past decade has been an unabashed search for energy cost savings. Larger customers led the way as factories, hospitals, schools, government facilities, office buildings and transit systems moved to reduce their operating costs. More recently, residential customers and small businesses have found savings opportunities. Competitive transition periods and utility default service options are now largely priced through market-based procurement processes, which has helped ensure a level playing field for comparison shopping, thus facilitating the analysis of retail choice alternatives.

The price distortion and cross-subsidies characteristics of traditional ratemaking are being left behind. After a decade of rapid development, customer choice is emerging as much more than an opportunity for lower kilowatt-hour prices. Customer choice is becoming the vehicle for customers to tailor supply and pricing contracts to their operating requirements and existing or desired usage patterns, replacing traditional regulated utility supply offerings that were “one-size-fits-all” tariffs customers were obliged to accept. Monopoly bureaucracies can never match the creativity and alacrity of customers and entrepreneurs interacting with one another.

Today, customer choice and supplier competition are delivering more accurate price signals – information of enormous value to customers, suppliers and policy makers alike. A large number of competitive suppliers are continually offering price information to customers and racing to design products based on feedback from customers.

A growing number of competitive suppliers, now on the order of a hundred or more, are operating across the nation’s competitive jurisdictions. Some market exclusively to C&I customers or to residential and small business customers. Some operate in just a single state or on a regional basis while others have qualified for licenses in all or most competitive jurisdictions. Vigorously competing with one another, these suppliers offer a range of products that are constantly being refined and improved through the give and take between buyers and sellers routine in the rest of the economy.⁹

CHOICE STORIES

If the proof of the pudding is in the eating, then the proof of electricity choice is in the choosing. What do customers do when given the opportunity to choose their electricity suppliers and what do they do once they have experienced the results of choosing their suppliers? The answer is found by looking at customer choice in individual states and within the utility delivery systems in those states.

A wide variety of competitive choice implementation strategies and timetables are represented in jurisdictions that have pursued industry restructuring. Some have achieved high levels of competitive choice among both the C&I and residential customers while others have seen competition primarily in the non-residential market. However, there is always the expected pattern seen in other liberalizing industries of larger customers being first movers.

Start-up problems, inexperience, regulatory uncertainties and sometimes incumbent resistance are gradually overcome by customer interest in competitive alternatives. The creativity of new entrants in devising and pricing products provides benefits that are attractive to customers. As the competitive market achieves widespread acceptance among larger customers, skepticism on the part of regulators and policy makers is assuaged, paving the way for smaller customers to pursue competitive choice.

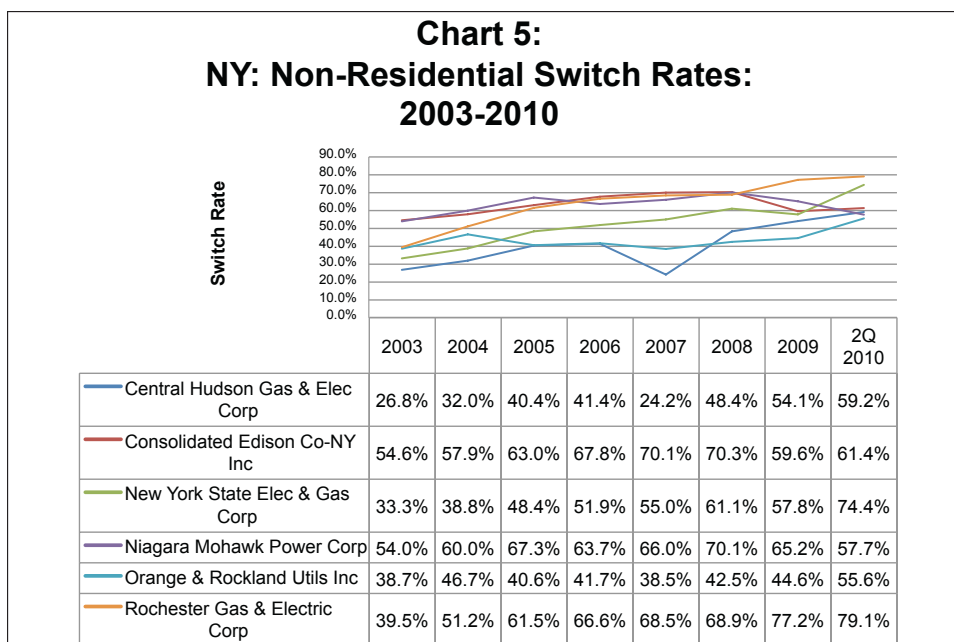
As the retail choice market develops in a jurisdiction, the products and services desired by customers gradually become more diverse, moving beyond merely a discount to the utility tariff product. There are fixed-price products, both for the energy commodity and electricity bundled with load-following delivery. Other contracts provide a mix of fixed price supply and daily, hourly or other index-priced energy. Customers can take advantage of demand response programs offered through competitive wholesale markets and regional transmission organizations.

With clear price signals comes a more refined ability of customers to commit the capital and effort necessary for more efficient utilization of energy, resulting in cost savings and environmental benefits. No longer is product and rate design dictated by the seller or the regulator.

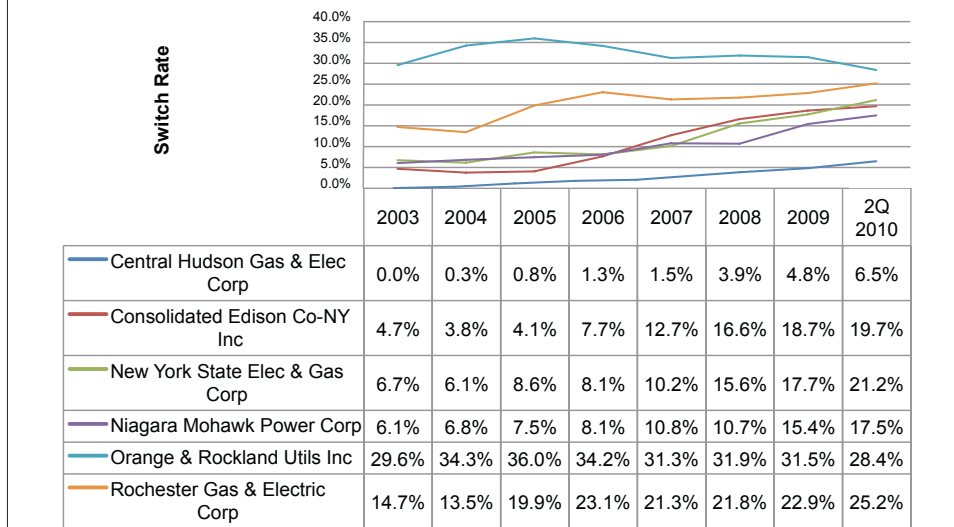
New York

New York has implemented customer choice as successfully as any other state, doing so without a general restructuring law. The New York Public Service Commission (NYPSC) moved utility-by-utility to restructure the industry along competitive lines as it directed extensive divestment of generation and customer access to alternative suppliers.

Retail competitive choice is now the predominant form of service across utilities in the Empire State's C&I sector (Chart 5). On a statewide weighted basis, two-thirds of eligible C&I electricity demand is currently being served competitively and a majority of that demand was served competitively as far back as 2003. Since 2008, the share of residential demand served competitively has generally trended upward, with about a fifth of all residential demand now being served competitively (Chart 6).



**Chart 6:
NY: Residential Switch Rates: 2003-2010**



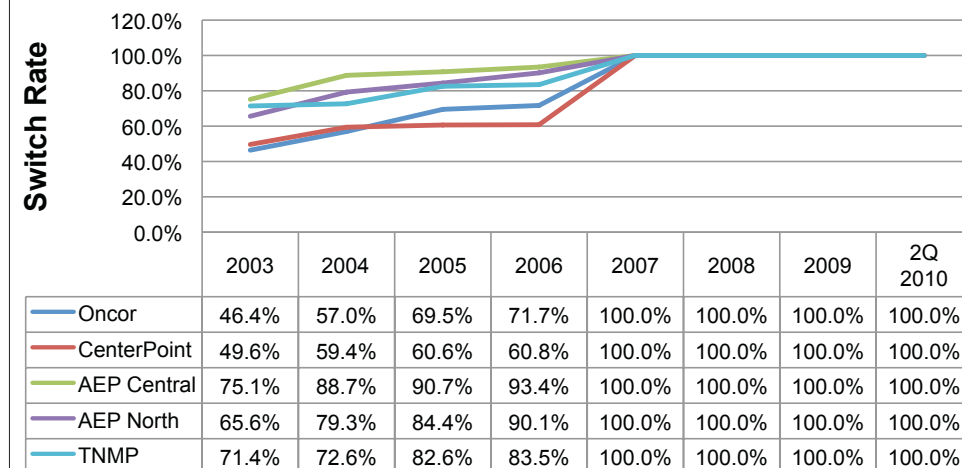
Texas

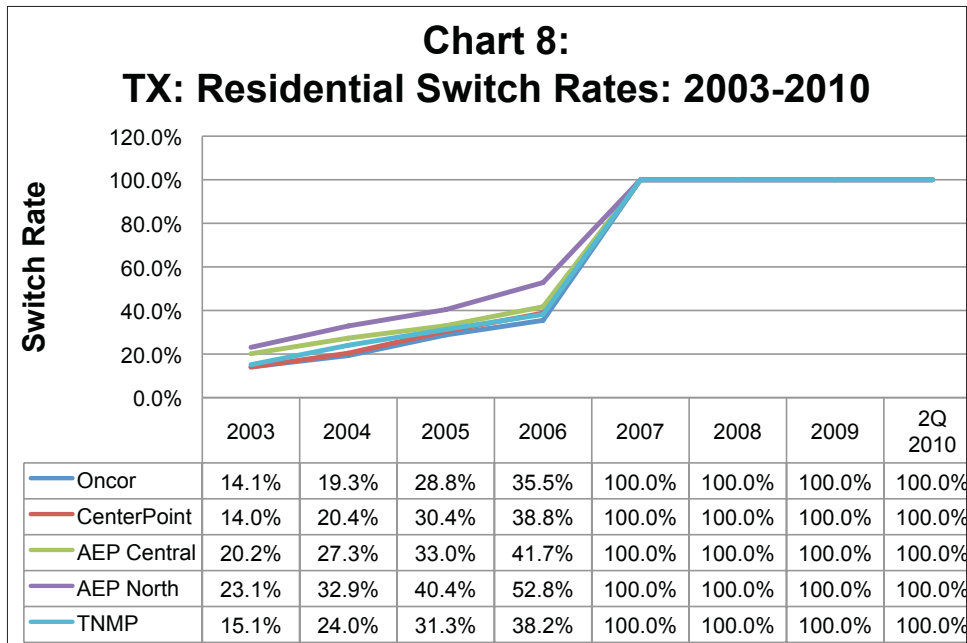
The migration in Texas to industry restructuring and customer choice has taken place in a genuinely unique context. Unlike the other states in the continental United States, the State of Texas exercises authority over most of the wholesale market in the state because the market does not operate in interstate commerce and is therefore not regulated by the Federal Energy Regulatory Commission (FERC).¹⁰ Rather, the Electric Reliability Council of Texas (ERCOT) manages the grid and is overseen by the Public Utilities Commission of Texas (PUCT). Unitary regulation has contributed to the ability of the Texas State Legislature and the PUCT to design and implement a restructuring game plan that coordinates competition in both wholesale and retail markets.

The Lone Star State was familiar with independent generation by the time of its 1999 restructuring law, having been the locus of numerous non-utility gas cogeneration facilities. Separating the generation and delivery functions in the electricity industry was something Texas felt confident in moving ahead with in the effort to seek competitive efficiencies.

Texas has fully separated the supply and delivery functions. Since the end of the "Price-to-Beat" default service program, 100% of all C&I and residential demand in investor-owned utility delivery areas is being served competitively (Charts 7 & 8). While a substantial role is played by suppliers affiliated with distribution utilities, the market has attracted over 30 licensed residential suppliers and double that number in the C&I sector.

**Chart 7:
TX: Non-Residential Switch Rates:
2003-2010**





The PUCT has adopted an energy-only resource adequacy policy designed to encourage the introduction of 21st Century technologies such as renewables. Consistent with a customer-centric restructuring philosophy, the PUCT is working to ensure every customer in ERCOT competitive areas has a smart meter this decade. These meters are expected to spur a wide range of customer innovations along with dynamic price settlement on a 15-minute basis.

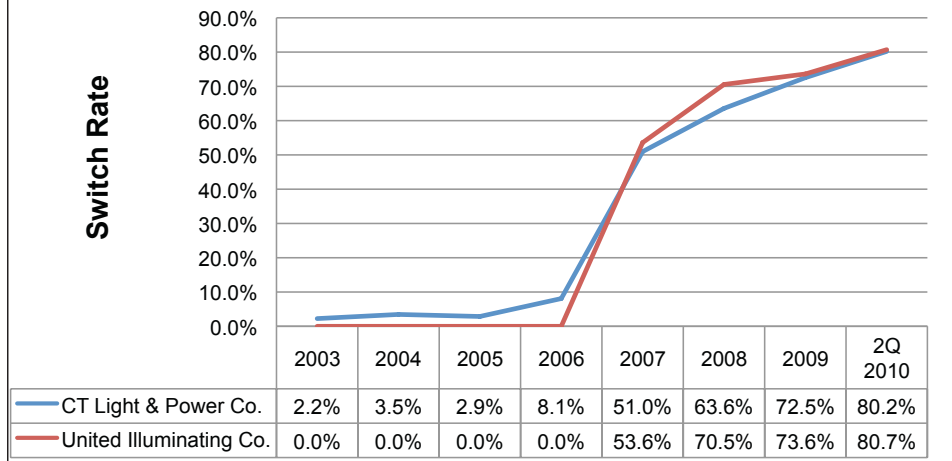
More than a solution to problems in traditional regulation, Texas has shown that customer choice and competitive industry restructuring involves the creation of opportunity for the future.

Connecticut

Connecticut's restructuring law provided all consumers the right to choose a supplier by July 2000. By the time that date arrived, Nutmeg State utilities had divested their generation assets. However, the Department of Public Utility Control (DPUC) recognized that generation divestment alone without other measures would not lead to the exercise of customer choice. As rate caps were about to expire at the end of 2006, the DPUC relied on existing authority to revise the rules of the game.

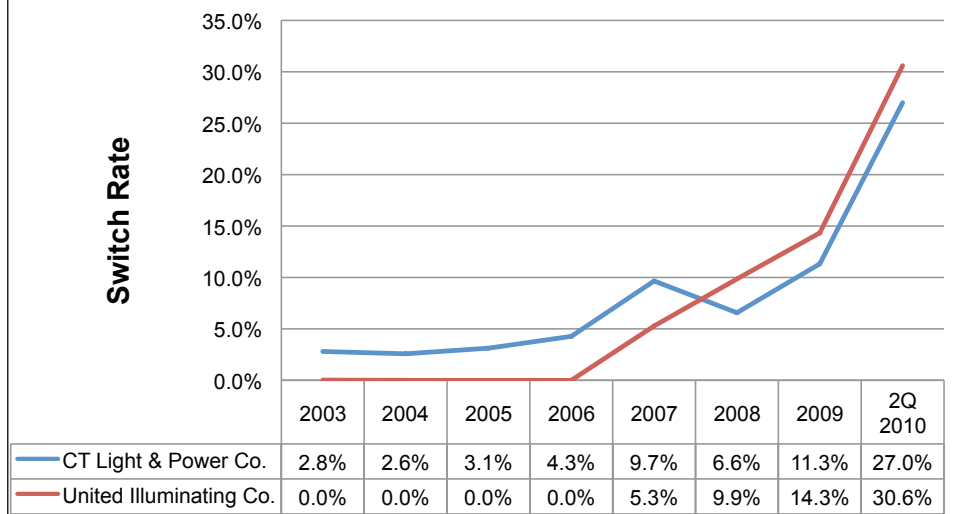
The DPUC instituted an auction-based procurement method for utility default service to customers who do not choose to purchase from a competitive provider. Since then, C&I choice has swung sharply upward. Over half of total electricity demand in the Nutmeg State's two investor-owned utility service areas has switched to one of the eight competitive suppliers operating in both utility areas. By mid-2010, the percentage of competitively served C&I demand in both utilities rose above 80% (Chart 9).

**Chart 9:
CT: Non-Residential Switch Rates:
2003-2010**



The share of residential demand served competitively also has a steep trajectory, with almost one-third of residential electricity consumption served by competitive providers (Chart 10).

**Chart 10:
CT: Residential Switch Rates 2003-2010**

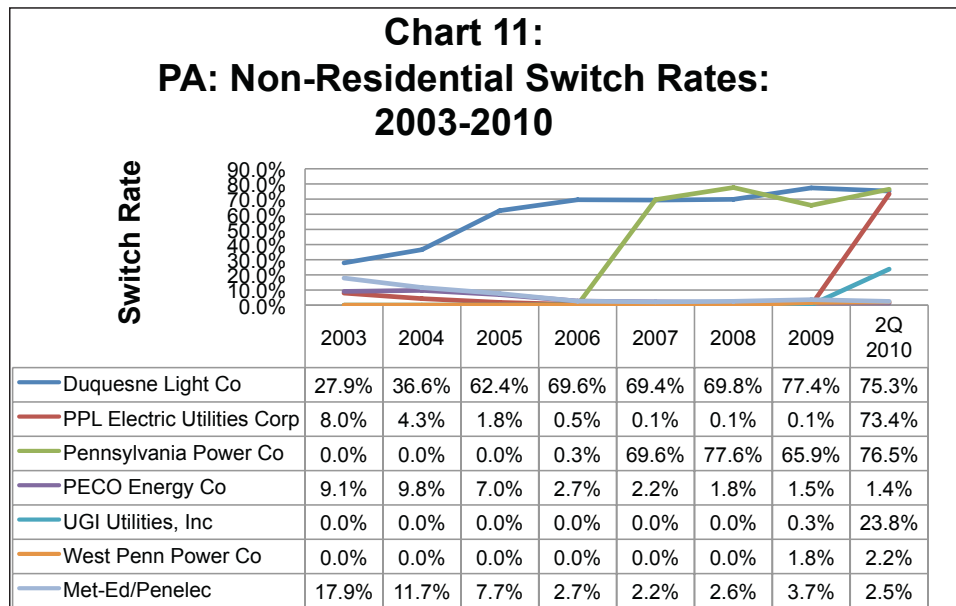


Connecticut can be seen as a microcosm of the generally successful rollout and performance of competitive choice in much of New England. A public opinion survey on a range of energy issues carried out for the New England Energy Alliance in April 2010 in the region's six states showed wide support favoring the opportunity to purchase electricity competitively. The results of the survey underscored the general theoretical support for market-based solutions to energy issues from climate change to energy pricing as well as practical acceptance of customer choice and competition in light of experience with electricity restructuring.¹¹

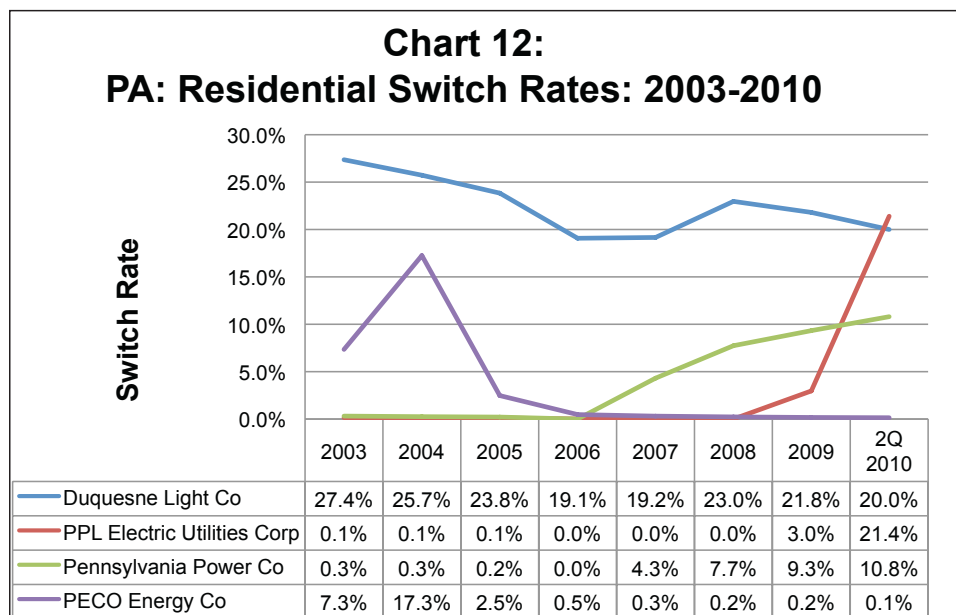
Pennsylvania

Until recently, customer choice in Pennsylvania has been a utility-by-utility phenomenon under legal settlements stemming from the state's general restructuring law. The Keystone State's 1996 legislation was one of the earliest in the nation and resulted in a large portion of utility-owned generation being divested. Competitive wholesale generators and distribution utilities became major participants in the successful development of PJM's competitive wholesale electricity market.

Pennsylvania illustrates the impact that differing rules for individual utilities can have within the same state even when there is a generally applicable restructuring law. C&I customers in two service areas among the state's seven investor-owned utilities, Duquesne Light and Penn Power, were able to move more quickly to take advantage of choice. Exercise of choice has expanded rapidly more recently with the end of transitional rate caps. C&I customers in the PPL service area have quickly moved nearly en masse from utility service to competitive suppliers, joining Duquesne and Penn Power in having about three-fourths of C&I electricity demand served competitively. C&I customers in UGI are beginning to exhibit a similar trend line (Chart 11).



As has been customary, growth in residential choice has largely followed in the wake of surging C&I competitive supply. Duquesne has had fairly high residential participation (in the range of 19-27%) for a number of years. More recently, in tandem with their respective surges in C&I choice, Penn Power and PPL have seen an upswing in residential choice, with PPL rapidly coming to parity with Duquesne (Chart 12).



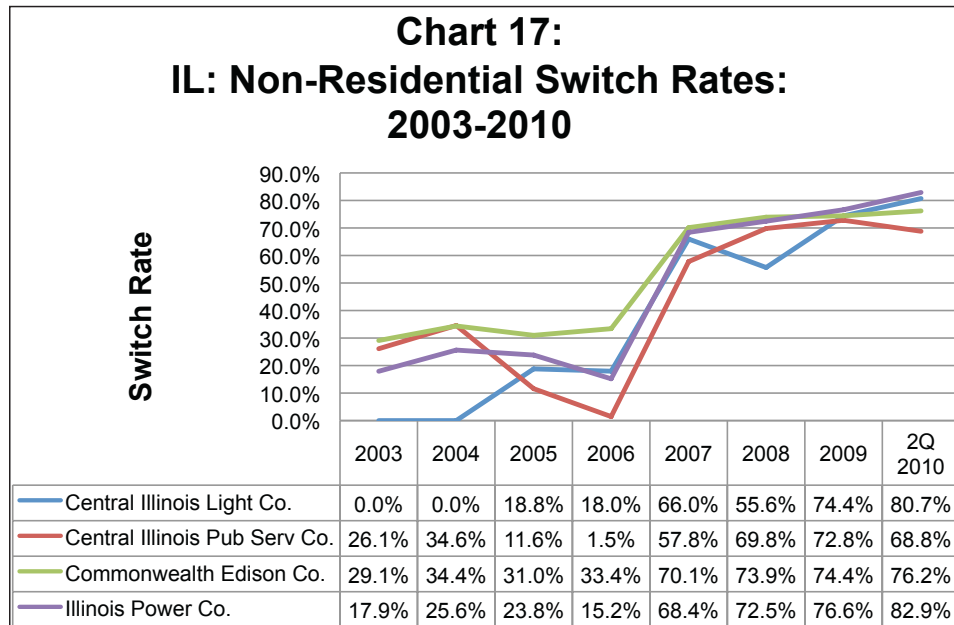
The Pennsylvania Public Utilities Commission has been steadily putting in place well-developed wholesale procurement programs for utility default service and retail market rules that address a broad range of conditions related to customer choice. Those policies and programs include enhanced data and information exchange between utilities and licensed competitive providers; a uniform eligible customer list; utility consolidated billing and purchase of receivables programs; uniform disclosure requirements for default service procurement results; a uniform price to compare; and various other measures.

There are widespread expectations that both C&I and residential choice will develop rapidly as rate caps end at the end of 2010 for PECO, Penelec, Allegheny West and West Penn and level paying field conditions become the order of the day.

Illinois

In late 2009, the Land of Lincoln marked a full decade of customer choice, by which time half of all electricity demand in the state was served by competitive suppliers. This growth in competition was accounted for entirely by the C&I sector. While there were some complex and contentious regulatory proceedings in the first several years of the transition period following the 1997 enactment of the restructuring law, the Illinois Commerce Commission (ICC) had delivery service rates and competitive rules in place for the commencement of choice in late 1999. Larger C&I customers were able to access the market for competitively provided power, even in the face of stranded cost charges.

From 2003 to mid-2006, the competitively served share of C&I demand varied somewhat by utility and year, but statewide was generally at about 30%. After mid-2006, C&I demand dramatically shifted toward choice with the end of stranded cost charges and the ICC declared additional C&I classes as “competitive.” Utilities were obliged to provide only hourly priced service to C&I customers declared competitive. With more potential customers, new alternative suppliers entered the market to meet customer demand – two dozen in ComEd’s northern Illinois area and a dozen in the downstate Ameren utilities. By mid-2010, three-fourths of all C&I demand was met under choice contracts, with only smaller business customers still taking utility bundled service (Chart 13).



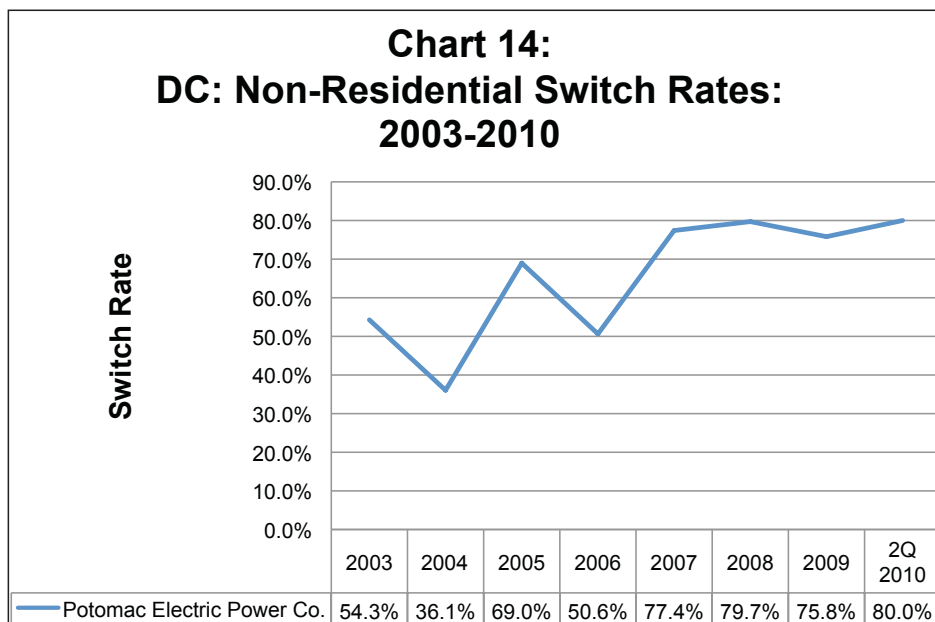
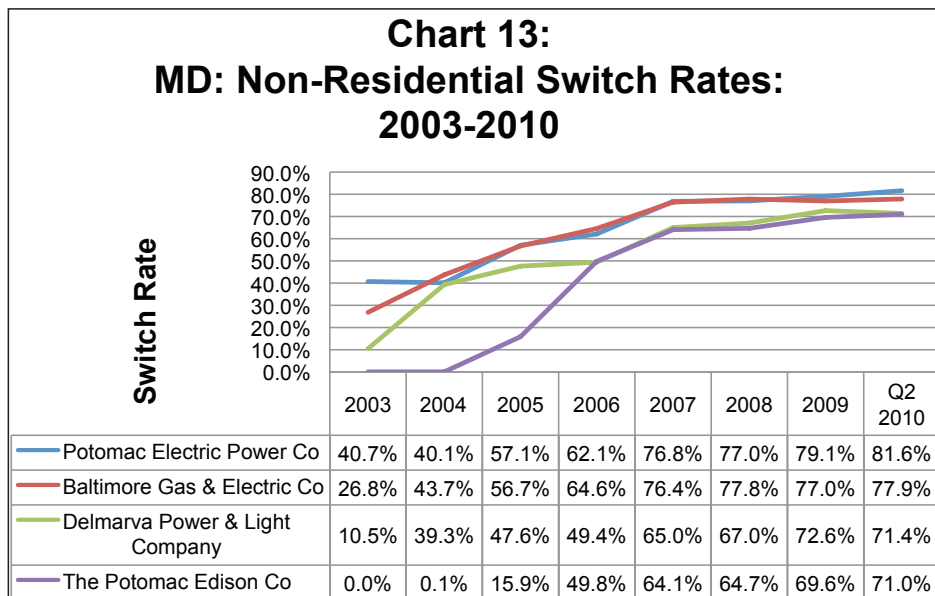
The success of the Illinois C&I market has set the stage for a surge in residential and small business customer choice. Over the past year and a half, utilities, customer groups and competitive suppliers have negotiated the details of purchase of receivables (POR) and utility consolidated billing (UCB) for residential and small business customers. Once implemented by the ICC in 2011 these rules are expected to fuel the exercise of choice by residential and small business customers.

Maryland and the District of Columbia

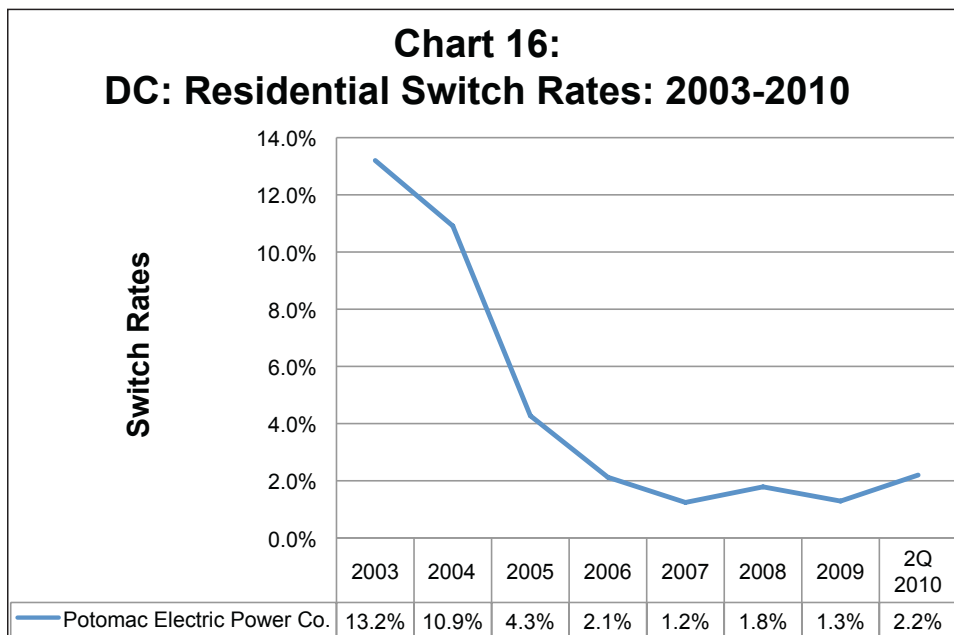
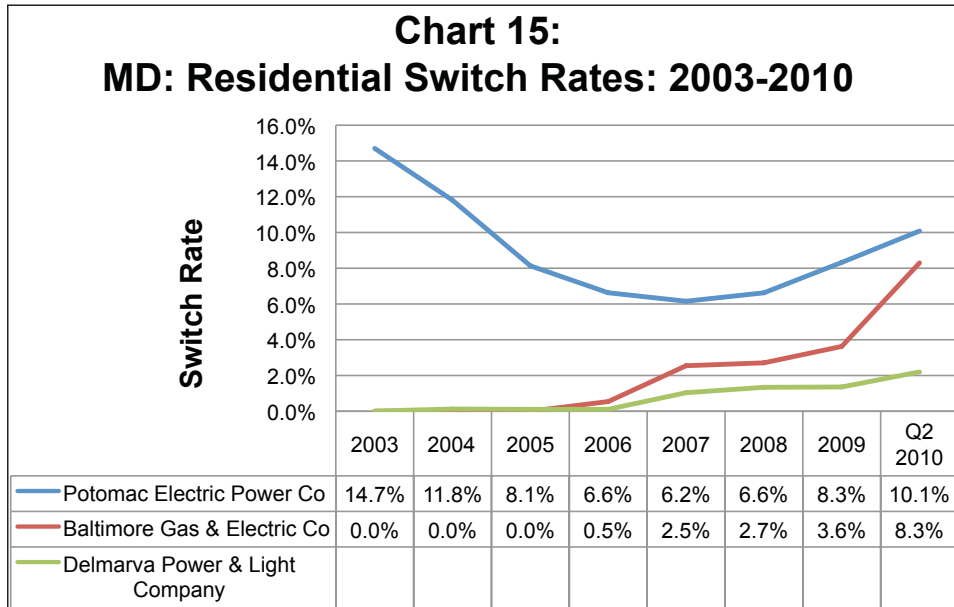
Maryland and Washington, DC, share a major utility, Potomac Electric Power Co. (Pepco), and both jurisdictions have adopted customer choice policies. They also share similar patterns in the vigorous exercise of choice by C&I customers. More recently, however, they have diverged in development of residential choice – something that may only be a temporary condition. Maryland and the District also offer the opportunity for many federal policy makers and regulators to directly observe electricity choice in action.

Maryland provides an interesting example of how an excess of caution in making the competitive transition can have unintended adverse consequences. In the case of Baltimore Gas & Electric (BGE) in 2006, as a pre-determined end of rate caps approached, wholesale electricity prices were being pushed higher by strong demand – particularly for natural gas, for which production in the Gulf of Mexico was sharply curtailed because of Hurricanes Katrina and Rita. The conjunction of a pre-set date for a procurement process and a spike in the market set the stage for a substantial rise in rates for utility default service to BGE’s residential and small business customers. The problem was not customer choice or restructuring. A reluctance to promptly implement customer choice and to provide flexibility, especially when it came to smaller customers, resulted in rate shock and political repercussions.

The path of customer choice in the C&I sector has been roughly similar in all utilities serving Maryland and DC, with migration of 70-80% of all C&I demand to the market. Only smaller businesses have stayed with default supply from the traditional utility. In the District and its Maryland suburbs, federal government facilities have aggressively sought the savings available in the competitive market (Charts 14 & 15)



Maryland and District residential choice trend lines have differed markedly (Charts 16 & 17). In 2003, residential switching in the Pepco's District territory exceeded 13% but had fallen to about 2% by mid-2010. Things have gone the opposite direction in Maryland, not only in Pepco's territory but also in BGE's and Delmarva's. With the end of rate caps in 2006 in most of Maryland, residential choice rose by mid-2010 to over 10% of Pepco's demand. Similarly, in 2006 the share of residential demand served competitive suppliers in BGE was just under 1% but by mid-2010 that figure had risen to over 8%. Recent figures available from the Maryland Public Service Commission show the level of BGE's demand served competitively at nearly 13% and PEPCO's competitively supplied demand at over 12% in September 2010.¹²



The similarities and variations between Maryland and the District in competitive activity serve as a reminder that restructuring is not an identical process across jurisdictions. A great deal is being learned about how differing rules impact the process but that when given the opportunity under proper conditions, both C&I and residential customers avidly exercise choice.

CUSTOMER CHOICE – LETTING IT WORK

Experience has now demonstrated that

- Wholesale electricity markets can operate on a competitive basis;
- Market forces will produce efficiencies in the power industry;
- Multiple suppliers of electricity at retail can deliver savings and customized products to customers through bilateral contracts; and
- C&I and residential customers can and will choose among suppliers competing to satisfy their energy needs.

Experience has also clarified the conditions that contribute to effective competitive retail electricity markets.

Two overarching conditions will be familiar since they are as important for the transition to choice as to the operation of a traditional regulated monopoly:

- **Stable Regulation:** A stable and predictable regulatory environment relies upon regulators and policymakers adhering to decisions and actions and otherwise keeping faith with the philosophy underpinning regulatory reform. In the case of customer choice systems, it is important that there is a commitment to market-based reforms and restraint in tinkering with the rules of the game in response to the up-and-down vagaries of the market.
- **Clear Rules:** The rules need to be clear and applied fairly. A competitive system based on customer choice in the market place will not function well if the rules are vague or if regulators or policy makers favor some competitors or customers over others.

Three conditions are largely determined at the federal level:

- **Wholesale Competition:** Competitive wholesale markets are necessary for retail choice. Utilities, retail suppliers, wholesale generators and market intermediaries need to freely negotiate prices and contract terms, with adequate safeguards in instances of unavoidable market power such as reliability must-run generation units.
- **Transmission Access:** Bulk transmission grids that provide for non-discriminatory access and pricing provide the certainty needed for market-based wholesale transactions to carry through to delivery.
- **RTOs:** Regional Transmission Organizations are proving important in assuring fair transmission access and for the efficient pricing and procurement of ancillary services, real time supplies and the operation of various market mechanisms, such as bidding demand curtailment into the wholesale power market. States play a role by deciding whether to encourage or require their utilities to join RTOs or by allowing customers to participate in RTO markets.

Five other conditions reside at the state level:

- **Cost-Based Delivery Rates:** Delivery service rates and the terms and conditions for electricity delivery should be competitively neutral and neither favor nor disadvantage some customers or suppliers over others. Delivery rates should be cost-based and must not include generation-related costs, either for power assets retained by utilities or as a means of creating customer cross-subsidies within competitive procurement processes.
- **Market-Based Default Service:** To the extent the conventional distribution utility continues to provide tariffed supply as the “provider of last resort” (POLR), pricing should be determined in competitive procurement programs.
- **Customer Data & EDI:** Customers should have fair access to their own usage data and should have the right to provide access for alternative suppliers in a usable form for marketing, product design, pricing and billing. Electronic Data Interchange standards and processes are necessary for proper data sharing.

- **UCB & POR:** Effective implementation of choice for residential and small business customers should include minimizing transaction costs through such mechanisms as reasonable arrangements for utility consolidated billing (UCB) that combines delivery and competitive supply charges and for purchase of receivables (POR) of competitive suppliers by utilities. These provisions may prove to be temporary arrangements as smart grid and other Internet-based developments facilitate data sharing among utilities, customers and suppliers.
- **Customer Education & the Promotion of Choice:** With the Internet, information can be made available to customers more easily and usably than ever before. Regulators and utilities have a special role to play in providing access to information, including links to suppliers, and clearly explaining the market rules to consumers accustomed to monopoly service.

RE-SET THE CHOICE DEBATE

The retail choice debate needs a re-set. But from what to what?

The retail choice debate we have been familiar with has had three central points of contention.

First has been price comparison. Dueling studies purport to show either that competitive prices are higher or lower than in regulated monopoly regimes. There are also the studies that compare current competitive rates with hypothetical regulated rates that might have prevailed absent restructuring. While interesting, price comparison is ultimately unsatisfying and indeterminate. The partisans in the debate will disagree on study time frames and the samples used, suspecting the other of choosing favorable ground to argue from. The record of customers exercising choice would indicate that customers themselves see cost savings opportunities and other benefits in choice.

Second, there has been a focus on imperfection in customer choice systems, including the possibility of market power in the hands of some market participants, with the proposed cure a return to conventional regulation and the recreation of vertically integrated local monopolies. This criticism ignores the comprehensive regulatory oversight framework that characterizes both the competitive wholesale market and the retail market. Indeed, there is a strong argument to be made that resources formerly devoted to ritualistic processing of the minutiae of pricing generation and designing commodity rates can be put to better use. FERC, state utility regulators and compliance teams of regional transmission organizations consistently exhibit high degrees of professionalism and awareness in the regulation of restructured wholesale and retail markets.¹³

Third, some opponents of customer choice have argued that too many customers are not in a position to make decisions that will benefit them, that information is insufficient, or that a competitive market may limit the ability of regulators and policy makers to achieve social or environmental goals. These contentions appear contrary to experience so far. Customer choice has not proven an obstacle to assisting low-income customers or to developing state-based renewable portfolio standards. If anything, the jurisdictions in the northeastern quadrant of the country where choice is very extensive appear to have taken more initiative in these areas than states that remained with traditional regulation. And in the main, customer choice jurisdictions have strong records of operating low-income energy assistance programs and have shown no inclination to back away from them.

Experience has rendered the old debate obsolete. The electricity industry is now characterized by competitive wholesale markets and transmission access, a major role for non-utility generation and retail customer choice as a *fait accompli* for vast areas of the country. The debate should now concentrate on anticipating the future rather than on turning back the clock. The central question for the future is whether the traditional monopoly regulatory model can perform as well in achieving important goals as will customer choice and retail competition.

The Smart Grid

Transforming the electricity grid from its electro-mechanical past to a digital, solid-state future will take years and a significant infusion of dollars. Whether the smart grid investment results in merely incremental improvement or revolutionary change will depend less on its capabilities than on how an intelligent network is used. Will the smart grid be a tool mainly for better command and control by delivery system operators, or will it also help buyers and sellers interface with one another to tailor service, convey price signals and invent efficiencies? One of the key considerations for utilities and regulators in proceeding with billions of dollars in smart grid investment will be the value of using a digital, information-based network to expand choices for customers rather than to reinforce traditional monopoly protections. The smart grid is fast being understood as key to integrating innovative applications such as electric vehicles and smart appliances into the network.

Smart Grid means that the underlying diversity among consumers can be addressed. Retailers, in order to develop and maintain profitable niches, will try to meet the varying preferences of consumers. This development goes beyond traditional demand response, for example. Various forms of active energy management will be tried and improved as time goes on. While market outcomes cannot be predicted with precision, we can anticipate that customers and service providers will innovate to the point that energy savings and efficiency in utilization will exceed anything that could be either imagined or effectuated by regulators and lawmakers whose template is the old utility model with consumers in a far more passive status.

Clean Energy

The interest in lower carbon intensity in energy production and use has evolved in parallel with the implementation of customer choice. The two movements share some common roots. The introduction of non-utility generation by the Public Utility Regulatory Policies Act of 1978 (PURPA) was motivated in part by the belief that regulated monopolies were insufficiently motivated to develop more efficient power plants, especially smaller units. The sense that there were electricity efficiencies to be found outside the traditional vertically integrated monopoly protected model was equally the animating spirit among early advocates of industry restructuring and customer choice. Nonetheless, an opinion about customer choice does not dictate an opinion one way or the other about wind, solar, carbon emissions, emissions cap-and-trade programs, clean coal, next-generation nuclear, plug-in hybrid electric vehicles or net metering. The question is whether customer choice and a commitment to competition and the power of price signals will make for better decision making and more efficiency in considering the full range of clean energy options.

Demand Response

No matter the opinions about clean energy sources and the value of reducing carbon emissions, there is recognition of the obvious – each incremental kilowatt-hour produced during peak demand costs more than a kilowatt-hour at low demand. In customer choice systems, these widely differing costs can be reflected in dynamic prices and customers can choose to shift energy use from high-demand, high-priced periods to low-demand, low-priced periods. In traditional retail regulated systems, even when there is wholesale competition, prices are routinely averaged for customers whether they like it or not, concealing the true price signals reflecting time-based and seasonal costs of production and use.

Satisfying Customers

It is impossible to look at the larger economy and deny that the driving force in every industry sector is the contest to satisfy increasingly discerning buyers of services and products. Consumers increasingly insist on tailoring products to meet their own tastes, doing so through ubiquitous communications modalities. Characteristic of the digital information revolution now finding its way into the electricity industry by way of the smart grid is the impatience of consumers with intermediaries who usurp the role of the individual in making choices. By its very nature, traditional regulation inhibits the give-and-take between buyers and sellers. Rather than being a welcome protector by simplifying and averaging, a system that seeks to control prices and service offerings comes into conflict with customers who regard themselves as discerning and capable.

The one thing that can be said about customer satisfaction is that the bar is ever rising. Customer choice, whether in electricity or any other sector, has embedded in its reason for being the expectation that the bar should rise as fast as innovation can drive it. Traditional regulation proceeds from the principle that the primary arbiters of what will and should satisfy are experts operating through an administrative process. This is where the debate is at its sharpest.

LOOKING AHEAD

A decade of customer choice has played out well in the century since Thomas Edison, George Westinghouse and Nicola Tesla vigorously promoted their competing visions for an electric future. A massive, capital-intensive and technology-driven industry emerged that enriched billions of lives around the world.

The sense of electricity as magic gave way to its being taken for granted, mundane in its sameness but with a marvelous versatility that makes it the energy source that drives modernity and the good life. It is easy to forget that the electricity industry has undergone transformational change throughout its history. The railroad regulatory model was imposed years into the replacement of gas lighting with electricity. Federal involvement came with the New Deal in the 1930s. Bulk transmission and nuclear power wrought their own transformations of the industry, as did the deregulation of wellhead gas prices and the opening of access to interstate pipelines. In 1978 PURPA paved the way for a competitive merchant generation sector. The industry has never been static. Competition and customer choice are one more important step.

As the debate continues, the issues addressed here will be revisited. More data will come in. Residential choice will increase. C&I customers will adjust their purchases as the economy recovers. Customer choice will continue to challenge regulatory prescription. It is vitally important that state and federal policy makers allow this next step in the electricity industry's evolution to continue, and not entertain proposals to roll back competitive reforms, else they jeopardize important economic and environmental benefits for consumers from the innovation that Smart Grid and other technological advances will provide.

Endnotes

¹This quotation is popularly attributed to the German philosopher Arthur Schopenhauer (1788-1860)

²The electricity restructuring debate was initiated in the mid-1980s by a number of state utility regulators informed by their experiences in the implementation of customer choice and price decontrol in telecommunications, natural gas, railroads and trucking. The Illinois Commerce Commission issued a series of papers in 1984 and 1985 suggesting that a movement to competitive generation and customer choice of supplier could address dysfunction in state electric utility regulation.

³California limited utilities to buying power supplies in the day-ahead, centrally operated spot market, denying them the ability to hedge volatile spot-market prices by purchasing under long-term fixed-price contracts. Other competitive jurisdictions avoided this anti-market construct by permitting buyers and sellers substantially more flexibility in contracting. See the FERC staff report <http://www.ferc.gov/industries/electric/indus-act/wec.asp>.

⁴For purposes of this paper, 17 states and the District of Columbia are regarded as having active markets (CA,CT,DC,DE,IL,MA,MI,MT,NH,NJ,NY,OH,OR,PA,RI,TX). California, where substantial demand is still served by competitive providers, is considering easing its near decade-long suspension of new enrollments; Michigan currently limits competition to 10% of electricity demand for each of the state's investor-owned utilities; and Oregon and Montana have significant obstacles to the exercise of choice. Yet all four states still show appreciable portions of demand being served competitively. The U.S. Energy Information Administration maintains a website that is periodically updated to reflect new developments in electricity restructuring. http://www.eia.doe.gov/cneaf/electricity/page/restructuring/restructure_elect.html. EIA reports 2008 total electricity sales in the lower 48 states at 3.72 billion MWh with 1.56 billion MWh sold in the seventeen choice jurisdictions (1.56/3.72 = 41.9%) http://www.eia.doe.gov/cneaf/electricity/esr/esr_sum.html

⁵For a review of the origins, comparative performance of North American and European electricity restructuring see "The Grand Experiment," by Terrence L. Barnich and Philip R. O'Connor, Public Utilities Fortnightly, February 2007.

⁷The charts in this paper rely on data reported in the quarterly "KEMA Retail Energy Outlook." KEMA, a Netherlands-based consulting firm with its U.S. operations headquartered in Burlington, MA, is widely regarded as an authoritative provider of information about trends in competitive retail electricity markets. KEMA utilizes EIA and state utility commission data bases and its own estimating methodologies to develop final estimated figures.

⁸A small number of accounts and MWh were competitively served in Nevada and Virginia in most years.

⁹KEMA and the Energy Retailer Research Consortium (ERRC) both produce periodic reports on competitive supplier populations, market shares, acquisitions and mergers, market entry and exit and estimated operating cost structures and operating margins. KEMA publishes Retailer Landscape every six months and the monthly Retail Market Monitor. ERRC publishes the Annual Baseline Assessment of Choice in Canada and the United States (ABACCUS).

¹⁰Most of Texas is served by a grid operating within state boundaries and without exchanges with systems in other states. ERCOT carries out its work under the auspices of the State of Texas. Outside of Texas, FERC has fostered wholesale power competition but does not directly correlate its actions at wholesale with state-regulated retail power markets. Therefore, the issues of FERC jurisdiction in wholesale markets versus state authority in retail matters have not arisen in Texas.

¹¹The full NEEA survey conducted by Opinion Dynamics Corporation can be found at [http://www.newenglandenergyalliance.org/downloads/nea_charts_2010_energy_survey_results%20\(1\).pdf](http://www.newenglandenergyalliance.org/downloads/nea_charts_2010_energy_survey_results%20(1).pdf)

¹²MPSC Monthly Choice Enrollment Reports can be found at http://webapp.psc.state.md.us/Intranet/CaseNum/submit_new.cfm?DirPath=\\Coldfusion\Electric Choice Reports\\2010 Electric Choice Enrollment Reports&CaseN=Electric Choice Enrollment Monthly Reports

¹³In September 2010, the COMPETE Coalition published a comprehensive review of the regulatory framework in which the electricity industry, both traditional monopoly and competitively restructured, operates: Regulation and Oversight of the Electric Power Industry <http://www.competecoalition.com/files/Regulation%20and%20Oversight%20of%20the%20Electric%20Power%20Industry.pdf>

Note on Author

Philip R. O'Connor is a former utility regulator who served as Chairman of the Illinois Commerce Commission (1983-1985). He was an early advocate of competitive solutions in telecommunications, natural gas, electricity and power plant emissions reductions. O'Connor has been appointed by five consecutive Illinois Governors to numerous positions in Illinois State Government including Director of Insurance and member of the State Board of Elections. He earned his doctorate in political science from Northwestern University and in 2007-2008 served in the U.S. Embassy in Baghdad as an advisor to the Iraqi Ministry of Electricity.



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