

UNITED STATE OF AMERICA
BEFORE THE
FEDERAL TRADE COMMISSION

Comments Regarding Retail Electricity Competition) V010003

COMMENTS OF THE
CENTER FOR THE ADVANCEMENT OF ENERGY MARKETS

Pursuant to the Notice of February 28, 2001 of the Federal Trade Commission (FTC) requesting public comment regarding certain aspects of retail electricity markets and regulation, the Center for the Advancement of Energy Markets ("Center" or "CAEM") hereby submits these comments.

I. ABOUT THE CENTER -- AND A WORD OF PERSPECTIVE

*Ten people who speak make more noise than
ten thousand who are silent.*

-- Napoleon

The Center for the Advancement of Energy Markets (<http://www.caem.org>) is a not-for-profit corporation founded in May of 1999 with a threefold objective:

- Chronicle and understand developments in the energy markets that are being wrought by technological and policy changes;
- Expound a market-oriented vision for solving the commercial and policy challenges posed by these changes; and
- Work with consumer, corporate and public policy decisionmakers to encourage the crafting of market-oriented solutions to energy problems.

In developing these Comments, the Center's representatives have consulted a number of individuals, organizations, and companies, from varying backgrounds, and interests, but who are united by a deep concern for the future the Nation's gas and electricity industries. The concern is that competitive access to natural gas and electric power – together with the competitive pricing, enhanced reliability and service innovations that such access makes possible – may all be at risk.

The current supply/demand imbalance for electricity in the West has occurred at the same time as natural gas prices have risen significantly for the first time in nearly 20 years.¹ Some of the problem is the result of a virtual drought this winter in the Pacific Northwest;² some is due to the rapid rise in demand for power over the last decade and the lack of new generation in the west; some is due to the rise of natural gas demand nationwide, especially as a clean-burning fuel for power generation. And of course the ill-conceived regulatory rules adopted by California's ill-fated experiment have played a significant role as well. There are surely other factors that have contributed to the problem, which is, of course, not confined to the West.

Regardless of the causes, the current developments threaten to freeze the Nation's energy market rules into an unworkable "half-way" house of both regulation and competition, adversely affecting wholesale and retail markets and market participants. Such a result could jeopardize the industry's ability to ensure reliable energy supply and further undermine its ability to manage price volatility so as to offer customers predictable, affordable prices. It could also skew investment decisions in needed infrastructure projects for years to come, increasing costs and risks that are ultimately spread through broad sectors of the Nation's economy.

It could, in short, jeopardize the enormous progress that has been made since the chronic energy shortages of the late 1960s and 1970s -- and this, just as the benefits of retail liberalization of energy markets are beginning to be realized.

For these reasons, the Center has determined to participate in this proceeding as part of its efforts to seek to educate the public as to why a well-designed market-based approach will benefit them and what must be done to achieve it.

The Center thus commends the Commission on its decision here to examine state retail competition programs and understand what has worked to produce consumer benefits, what has not, and what changes may be needed to gain the benefits of competitive retail energy markets.

While the Commission's fact-gathering effort in this proceeding is important, we would urge the Commission not to lose itself in the minutiae of dozens of individual retail programs, the great majority of which are largely irrelevant to consumers and suppliers alike for the simple reason that a whole series of market rules and market institutions -- and the absence of *necessary* rules or institutions -- preclude new entry on economic terms. Indeed, it might be noted that the very presence of

¹ See Figure I, *infra*, for chart showing wellhead prices in constant dollars from 1949 to 2000.

² See, e.g. the monthly report on the Pacific Northwest water supply of the National Oceanic & Atmospheric Administration of the Department of Commerce at http://www.nwrfc.noaa.gov/water_supply/2001/March/toc.shtml (and especially the seasonal precipitation summary available at the NOAA's website at: http://www.nwrfc.noaa.gov/water_supply/2001/March/06seasonal.shtml#TopOfPage). The water supply situation, which had improved some during February, worsened considerably over the course of March.

such a multitude of individualized, specialized programs is itself a significant part of the retail problem. The blunt and unpleasant fact is that despite (or in part because of) the many restructuring programs adopted at both state and federal level, *there simply is no meaningful retail competition in electricity in the United States today*. Hence, the Commission will find in its inquiry that while many millions of American businesses and consumers have access *in theory* to competitive power supplies, only a tiny minority of those *in fact* have competitive alternatives to utility supply -- and that number is presently shrinking, not growing.

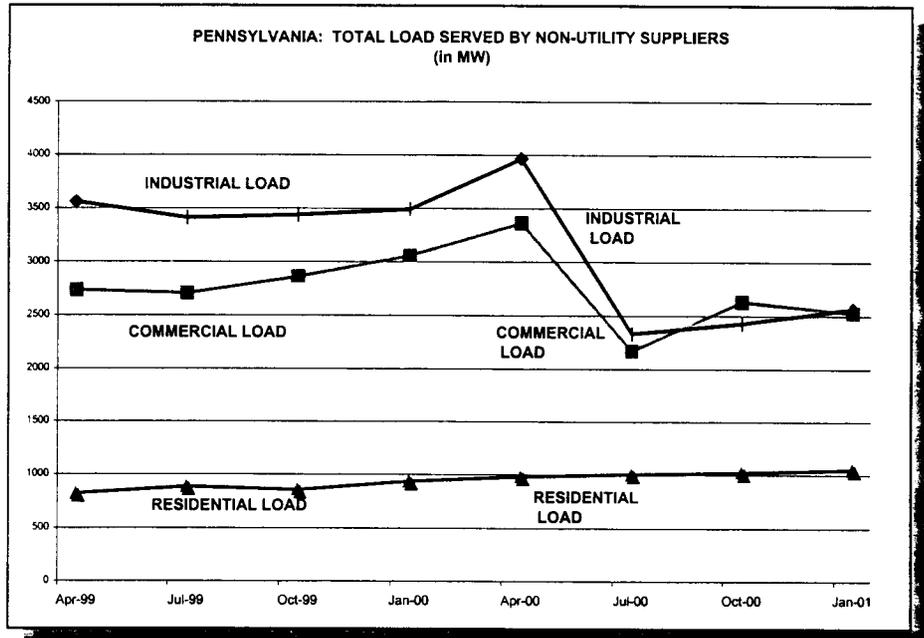
These sad facts are underlined by two recent reports:

- CAEM's Retail Energy Deregulation Index 2000 (or "RED Index"), which measures the progress that states have made in moving from the monopoly model of public utility regulation to the competitive model for retail electricity markets. These state-by-state rankings show that while progress has been made, much more needs to be done to bring competitive open access to the Nation's retail electric markets. The Executive Summary of the current RED Index, together with a description of the methodology used is available on the internet at: http://www.caem.org/red_index_es.htm.
- The *Retail Energy Markets 2000* study of XENERGY, Inc., "Electric Restructuring: Failure, Progress and Chaos" (March 2001) (hereafter cited as "XENERGY REM 2000 Study"). The Executive Summary is attached to these comments and is also available on the internet at the company's website at <http://www.xenergy.com/XENHome.nsf/DESIGN/WEBLINKS/6C9F6C32A1DFEADF85256A1D0065428F>. This just-released study tracks in detail the movement of retail customers to competitive power suppliers -- or back to the utility. The March 2001 study finds that just *0.8 percent of residential consumers nationwide* have selected a competitive supplier (although 40 percent or more are legally entitled to do so) and that *less than 1.5 percent of nonresidential customers* have opted for competitive supply. XENERGY REM 2000 Study, Executive Summary, at 3.

Worse, since the recent changes in competitive prices and costs have not been accompanied by changes in the "default" services provided by utilities, the number of consumers with meaningful competitive alternatives *has actually been diminishing*, not growing, over the last year. The markets that achieved early prominence -- Pennsylvania and New Jersey -- are now seeing sharp *declines* in the number of retail customers purchasing competitive power.

This disturbing trend is illustrated by the nearby chart drawn from data published by the Pennsylvania Office of Consumer Advocate.³ It clearly shows how the total industrial and commercial loads served by non-utility suppliers peaked a year ago and has fallen by a third -- and is even lower than two years ago, when the statistics for the new program began to be available.

But the trend affects other state markets as well where a number of the new entrants have failed or suspended operations as wholesale prices have risen.⁴ Others have pulled out of particular markets or market segments, where a significant number of customers have returned (or have been returned) to utility default service.⁵



Not all of the news is disheartening. On the electric front, the retail restructuring plans in Ohio (competition commenced January 1, 2001) and especially Texas (competition to begin January 2002) have a number of elements that are quite different from those in place in other states to date and may tell a somewhat different tale.

Similarly, the experience with retail access to *natural gas* markets, while still frustratingly slow for residential consumers, shows a number of bright spots. In particular, during a winter period where natural gas prices rose substantially for the first time in a decade and a half, the price increase of competitive suppliers was *far less* in some key markets than the increase in the regulated service from the utility. This is illustrated in the accompanying figure comparing the monthly commodity charge for gas service in Illinois for Nicor Gas (the regulated utility) with the comparable charge for competitively-priced service from the utility's own competitive affiliate, Nicor Energy. In the spring of 1999, the costs were very comparable. But through the last two winters, the cost of purchasing gas from the unregulated affiliate has been less than the cost of the

³See http://sites.state.pa.us/PA_Exec/Attorney_General/Consumer_Advocate/cinfo/instat.html

⁴ The notice of suspension of service by Utility.com is available at <http://www.utility.com/states/residential/suspend/suspend.asp>.

⁵ See list in Figure I of XENERGY Retail Energy Markets 2000 study, *supra* at page 4. .

regulated gas service from the utility itself. Indeed, during the 2000-2001 winter, the cost of regulated gas supply exceeded that for competitive supply by over threefold.

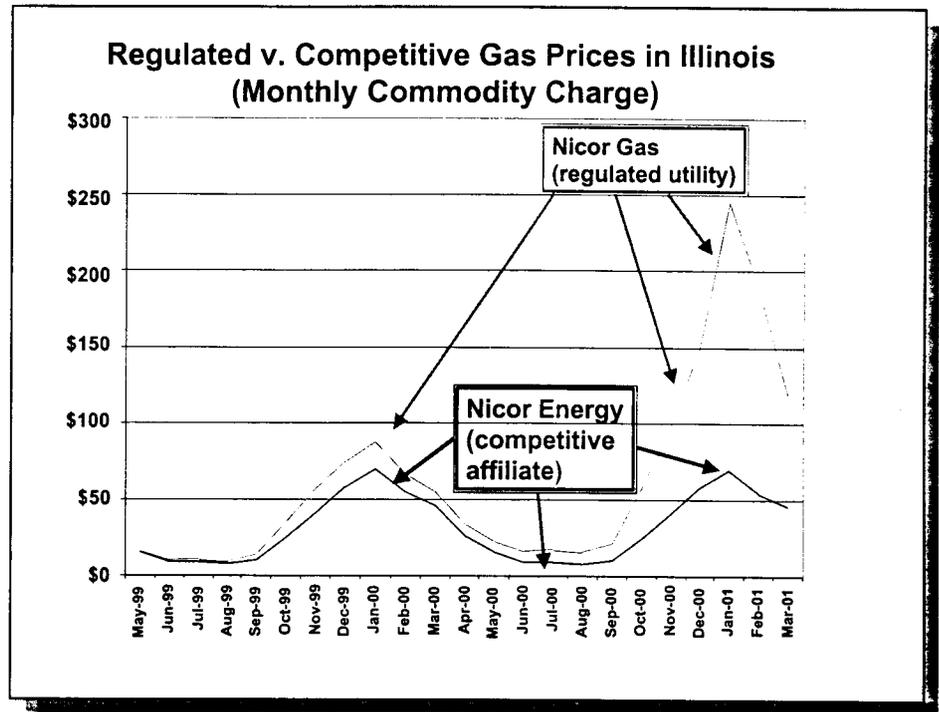
But these success stories only highlight the disappointing "bottom line" in the retail electricity markets: sixteen years after the Federal government adopted an open-access policy for the natural gas pipeline grid, nearly a decade after Federal legislation to expand competitive markets in power and gas, and years after the FERC acted to institutionalize open-access to the electric transmission grid, over 99 percent of American residential

consumers have no meaningful access to competitive power supply. Worse still, consumers in some states are being exposed to huge future liabilities due the failure to create proper market institutions, incentives and pricing rules.

There simply is no nationwide retail market for gas or electric energy in the United States. The Center respectfully submits that the Commission's State by State inquiry here will confirm that fact. We also submit that the Commission will find a cacophony of state and local market rules -- and the absence of other necessary market institutions and rules -- which combine to:

- interfere with sellers' ability to access retail markets for electricity for all customer classes and residential and small commercial consumers of natural gas;
- unnecessarily raise the costs of energy to consumers;
- undermine the ability of the industry to manage price risk and provide reliable service;
- discourage the interconnection -- both *physical* and *organizational* -- of the power grid, thereby undermining reliability.

Accordingly, and for the reasons detailed below, the Center respectfully urges the Commission to use the present inquiry as its "bully pulpit" to document the shortcomings



of the current regulatory and market rules and the costs they impose on American consumers and businesses -- and thereby build the compelling case for fundamental reform.

II. MODERNIZATION AND REFORM MUST REPLACE THE "DISREGULATION" AND "MISREGULATION" OF THE PAST

*A great many people think they are thinking
when they are merely rearranging their
prejudices.*

--- William James

The Nation's energy markets are at a crossroads. It has become painfully clear that efforts to revise traditional utility-type markets for electricity and natural gas, while relatively successful in some areas, have created or exacerbated problems in others. While supply shortages and dysfunctional pricing rules are most pronounced in California, the issues are by no means confined to that State. The integration of the power grid means that rules discouraging new power supply in one State may have the effect of raising prices in another, just as may energy consumption or conservation decisions.

In essence, while the electric utility industry was constructed over many decades as an archipelago of electrical islands, it is rapidly evolving into a network of interstate transmission paths, increasingly analogous to the natural gas pipeline grid. While that development presents enormous opportunities for enhancing reliability, reducing costs and improving services, it requires adapting the legal, regulatory, and asset-ownership structures to the underlying physical network. Retail competition must be seen as merely one component of this much broader structure.

To date, while reform of the wholesale markets was largely conducted under the aegis of a single Federal forum at the FERC, the reform of retail markets has been a hodgepodge of highly disparate efforts. Not only is there not a single set of standards governing retail services, there is not even a single vocabulary for describing the various contrasting -- or even contradictory -- rules that do exist. It is as though Internet addresses and standards were written in different languages in each State, or even in differing parts of the same State.

Retail liberalization reforms have, as a result, fallen far short of the potential, as the Commission will surely learn from other comments. As a result, the people are being injured in at least three separate ways:

- *as consumers*: through the implementation of market rules that have created, and then exacerbated, a serious supply shortfall in delivered energy resources (especially in the western US), resulting in higher prices (whether passed

through immediately or deferred for rate increases) and less control over their daily lives;

- *as workers, managers, investors and taxpayers*: through the adverse impact on economic opportunity and output as businesses cope with the reality of unreliable service and soaring prices;
- *as citizens*: through artificially encouraging greater adverse impact on the air and water and disfavoring environmentally-favorable technologies, assets and consumption patterns.

The new market rules of the last few years have often been called "deregulation". This, however, is a misnomer of the first order and seriously hinders analysis and informed debate. Try explaining to a foreigner, for example, why a set of rules that prohibits sellers from raising prices to recover costs is called "deregulation", while the term "regulation" is reserved for the rules that allow sellers to automatically raise prices to follow costs (and to recover all financing costs in the bargain). The use of such terminology carries a great deal of political and ideological "baggage" that gets in the way of solving real world problems. Moreover, given the difficulties and costs of many of the so-called "deregulation" plans, the actual policies adopted might more accurately be termed "disregulation" or "misregulation".

As the Commission will no doubt learn from other comments filed in this proceeding, the word "deregulation" is being used to mean anything from prohibiting market-based pricing (as in the California electricity markets) to requiring all customers to buy from non-utility suppliers at market prices (natural gas in Georgia) -- and quite a few variants in between. In short, the word has essentially become meaningless and its continued use will only confuse matters for all concerned. At least with regard to issues relating to the liberalization of energy networks to provide non-discriminatory access to competitively priced supplies of the underlying commodity and associated competitive services, the term "deregulation" should probably be consigned to the "recycle bin" of our computers, along with others whose day has passed (such as "Nifty 50"; "new economy" and "the end of history").

The Center submits that simple elimination of price regulation over retail energy sales will not begin to solve the complex supply, reliability and environmental problems of today's gas and power industries any more than will the continuation of traditional public utility regulation. What is required is much more: a vision that is considerably more complex and *nuancé*. Successfully liberalizing energy markets will require disciplined analysis and candid debate that is unencumbered by emotionally charged rhetoric. We need, in sum, to do more than what James called "re-arranging our prejudices": we think to think through what has changed in the energy markets over the last 20 to 30 years in terms of technology and resources; why the markets behave differently today than in the past and how they could perform in the future to meet the needs of a robust and growing economy. Last -- *yet first in importance* -- we need to determine what steps must be taken *today* to channel the evolution of the industry for the next several decades.

III. SIX PRINCIPLES FOR LIBERALIZED MARKETS

The world is full of people whose notion of a satisfactory future is, in fact a return to the idealised past.

-- Robertson Davies

All well-functioning markets require well-designed market rules, whether the market be for farm produce in the 15th Century or electricity and gas in the 21st. The only relevant debate is thus not over whether there should be market rules, but *what those rules should be and whose interests should they serve?*

The proper role of government here is to understand the underlying dynamics of a given industry or market and then develop policies that will allow for the creation of market rules that are adapted to those realities, to the needs of consumers, and indeed to the overall *public* interest. In some cases, (say, the market for baseball trading cards), the necessary market rules are minimal and go little beyond the enforcement of property rights. In others, the rules will be complex, and require ongoing oversight and review.

The more complex the market, the more important it is for the market participants themselves to craft the underlying rules and for the appropriate governmental body to review the market institutions, rather than try to craft the market rules itself. In the regulated energy industry, this has been particularly difficult because many of the key market rules are currently set out in individual utility tariffs, such that changes are almost by definition drafted more by regulators than market participants. Contrast this with the approach that is generally followed for the financial markets where private organizations -- the stock exchanges -- establish and police the market rules for trading, but are themselves subject to oversight and review by the Securities Exchange Commission or the CFTC. While the industry and the FERC have sought to make this transition through such efforts as the Gas Industry Standards Board (GISB) and the Uniform Business Practices effort, much more must be done.

With regard to the Nation's energy delivery markets, there is very considerable room for principled disagreement as to what the market rules ought to be and what role government should play in designing, enforcing or overseeing the operation of those rules. Hence, the objective of the reform movement cannot be to try to eliminate the clash of competing interests, but rather to channel that energy -- figurative and literal -- into constructive paths that benefit the broadest public interest.

Accomplishing that task requires first the agreement upon the ultimate objectives. Regardless of disagreements as to the details of market structure and market rules, we believe that there is broad based agreement that the Nation's energy markets should:

- Facilitate the development of adequate supplies of energy resources and enhanced reliability of service delivered to all consumers;

- Provide basic energy services at the lowest possible prices while allowing customers to choose packages of services that meet their own particular needs and convenience;
- Ensure that competitive prices mediate supply and demand; and
- Minimize the adverse environmental impacts of energy supply and use.

The Center believes that these ultimate objectives can best be achieved through market rules that implement six more specific principles:

1. *Freedom to hire; freedom to fire: give customers the right to choose their energy suppliers, and suppliers viable opportunities to serve their customers.* Regulation must assure non-discriminatory access to the transmission and delivery networks for both gas and power and prevent monopoly abuses of these facilities. Consumers should be free to hire suppliers that satisfy their needs and to fire those that are unresponsive. Faced with the need to keep customers satisfied, competing suppliers will innovate with better-tailored and better-priced energy services. Assuming that the other market rules are properly designed, retail suppliers will be able to offer various options, including fixed prices, floating prices, "green" energy, and time-of-use pricing.
2. *Freedom to use; freedom to release: empower consumers, through modern meters and real-time pricing, to profit from their willingness to conserve.* Electricity is notoriously difficult and expensive to store, which means that the cost of reliable *peak* supply is inherently far above the cost of reliable off-peak service. Today's market rules make nearly all customers pay for providing peaking service even where the cost of that service to them far exceeds their willingness to pay for it. Market rules should empower customers to monetize this difference by choosing not to consume power on peak in exchange for receiving the full market value from those customers who do choose to draw on the grid during peak periods. That will both enhance reliability and reduce pollution. The result will be greater energy efficiency than with either utilities' average-cost pricing or taxpayer-subsidized conservation programs and greater reliability as well, as customers become a source of potential market-area peaking supply.
3. *Freedom to access the energy delivery networks: assure non-discriminatory access to all aspects of the network (including appropriate information resources).* Energy delivery networks are not merely "long-haul" highways (although they serve that function as well). Rather they are complex, interactive networks, more akin to the information highway known as the internet than its asphalt and concrete counterparts. In addition, the ability to integrate with the network's information flows will become increasingly important as providers work to manage customers' load -- and customer-side generation -- as actively as traditional central station supplies or off-system purchases. This will require far greater standardization of tie-in and operating

rules than has traditionally been the case. Similarly, new service providers will need active regulatory oversight to overcome the many barriers that currently exist (whether consciously erected by utilities to protect their own sales from competition, or simply the leftovers of business practices that predate arrival of open-access markets and the rise of e-commerce). While this objective applies to both gas as well as power, it is especially applicable in electric markets where independent power producers, distributed generators, cogenerators, and energy marketers will require ready and timely access to the grid as well as rapid, economical permitting.

4. *From "islands" to "interstates": integrate energy delivery networks on a regional and national basis.* The need to integrate the delivery networks means that reform must create broad regional transmission organizations (RTOs) that comprise economically coherent markets, not just existing state boundaries or even utility control areas. As a *physical* matter, it means expanding and strengthening and *integrating* the electric transmission grid, as has been done in the natural gas pipeline industry over the last 20 years, by knitting together the islands in today's electricity archipelago. Perhaps this will require the creation of a Federal power of eminent domain for transmission lines; perhaps it can be better achieved through other legal vehicles. As a *regulatory* matter, it means much greater standardization of tariff language, delivery, and access rules, both retail and wholesale. Like the internet, electricity and natural gas markets depend on complex interstate grids that require consistent transmission and delivery practices. A light switch in Malibu affects power flows in Montana. Just as scores of conflicting local regulations would kill the internet, hundreds of utilities and 48 interconnected States cannot act as islands, no matter how well intentioned.
5. *Reward, don't penalize, efficient, low-emission usage of fuels to generate electricity.* The anti-pollution benefits from cogenerating heat and power should be fully recognized. Direct and indirect subsidies for high emission sources should be eliminated. To a far too significant degree, current environmental rules reward relatively higher-emitting, grandfathered, facilities and force new entrants to incur higher costs -- thus creating a competitive preference for the older, higher-polluting, facilities. This penalizes new entrants as competitors, consumers through higher prices, and all citizens through unnecessary environmental pollution. The ability to trade emission credits should be expanded to allow more robust and liquid markets.
6. *Encourage the development of price-risk management tools.* As noted, the difficulty of storing electricity (which would otherwise allow greater ability to increase and decrease *quantity* of the commodity) means that there will tend to be greater volatility in *price* in order to balance supply and demand. Because of this inherently high price volatility in a competitive power market, there is a correspondingly greater need to ensure the availability of tools to manage price volatility: futures; options on future; forward contracting; reliable indexes;

electronic markets -- all the vast panoply of contractual and financial risk-management tools. The market rules adopted by California drained liquidity from these markets, destroying their effectiveness. By eliminating the very tools required to manage price volatility, these rules thus exacerbated the problem. Well-designed market rules should do the precise opposite.

These six principles should inform the policy analysis and offer specific guidance in responding to many of the detailed questions the Commission has posed. Translating these principles into specific recommendations for implementation nationwide will bring to the fore the very concrete effects -- positive or negative -- that a true pro-competitive National energy policy will have on particular market participants. The fact that some companies or organizations will be "losers" from reform does not make their concerns illegitimate, but neither does it justify sidetracking a long-term policy that will significantly enhance the public welfare.

IV. MISSING LINKS TO THE FUTURE

"The future is like heaven - everyone exalts it, but no one wants to go there now."

- - James Baldwin

Implementing these principles will require detailed understanding of the obstacles the industry currently faces in providing reliable supplies and innovative services -- at attractive, competitive prices. The questions that must be asked and answered go well beyond the scope of the questions detailed in the Commission's notice, and indeed are beyond the scope of these comments. What we do seek to do here is to focus the Commission's attention on a few of these broader issues that must be more fully addressed if the Commission is going to understand the current developments in the Nation's gas and power markets. We focus here on two key missing links to the future, the absence of institutions for adequately managing price risk and the lack of physical and organizational integration of the power grid.

A. Lack Of Institutions For Managing Price Risk

1. *The inherent volatility of power prices.* Electric power is unusually difficult to store as a commodity. True, it can be stored as water reserves pumped up to a reservoir during off-peak periods to be recovered as the water rushes back downstream. It can also be stored in capacitors, or even in superconducting coils -- so-called "juice in a can" -- and used for voltage stabilization and power quality purposes. And, at least in prototype facilities, it can effectively be stored as hydrogen in a reversible-cycle fuel cell. And of course, it is "stored" in the sense of having generating facilities and fuel ready at hand -- spinning and non-spinning reserves -- that can be used to feed into the grid when demand rises. But these exceptions prove the rule that electric energy must be produced and "consumed" at essentially the same time.

This long-recognized fact has direct implications for pricing and policy: the pricing of the electric power as a commodity is *inherently* more volatile than that of other commodities such as natural gas, wheat and hog bellies.

The reason for this is pretty simple: since it is difficult and expensive to modify the amount of power supplied over the course of a day, the *demand* for power must vary more and more quickly than for other commodities in order to maintain equilibrium. This is especially true due to the operational need to keep the energy supplied in balance with the load on the system (i.e. "demand"). But because there are essentially no mechanisms in the market at present for *small* changes in price to precipitate corresponding *small* changes in demand, there will tend to be considerably greater variations in price than for other commodities whenever there is a need to reduce demand in the near term to match available supply. This phenomenon is most pronounced when generating reserve margins are low and no additional supplies are available for purchase from others on the grid. In such a case, balancing supply with demand can only be done if demand falls to match supply, since (in the short time available) supply cannot increase to meet demand.

The bottom line: when supplies are "maxed out", then prices will have a tendency to rise sharply to dampen demand.

When retail prices are fixed by law, such that an increase in the wholesale supply price will not be passed through those who make the consumption decisions – end use consumers – and therefore will have no dampening effect on demand at all. The wholesale price *must therefore rise even higher* because all of the balancing must come from eliciting more supply than from a combination of increases in supply *and* reductions in demand. This point bears repeating: the failure to reflect wholesale prices at retail *must itself* drive wholesale prices higher than they would otherwise rise to achieve a balance of supply and demand.

Put in financial terms, this means that the need to manage commodity price risk -- the risk that the price of the commodity may change over time -- is greater for electric power than for a comparable amount of most, or perhaps nearly all, other commodities.

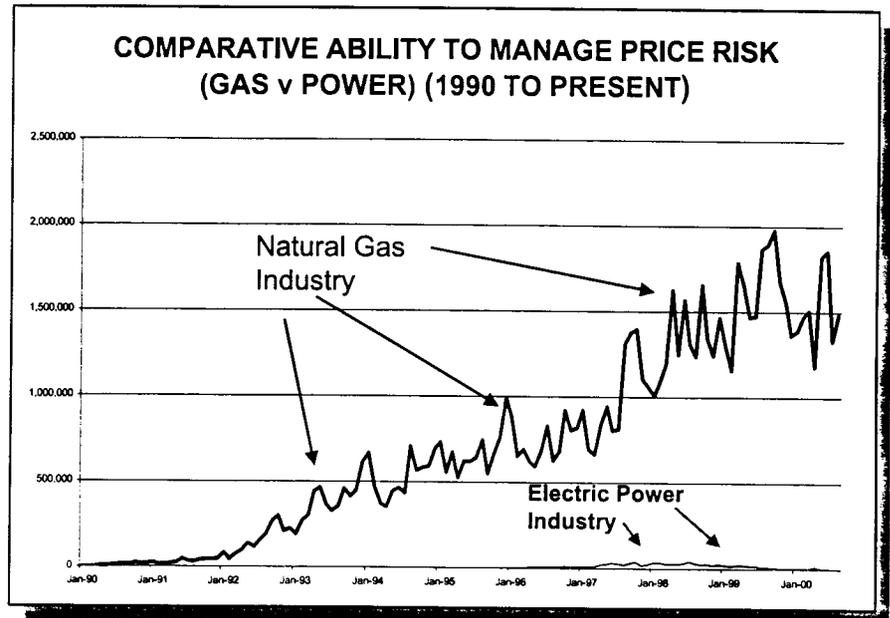
2. *The inadequacy of risk management tools for the power industry.* This inherent volatility runs directly against a strong preference expressed in many retail markets for price predictability – a value that regulators recognize through a preference for “rate stability”.

In a normal competitive market, retail suppliers would manage this problem actively. First, they would address the market preference for stability by offering customers prices that are fixed for particular contract terms. But they would manage the risk that wholesale prices will vary over time by a host of tools. First, they would insure that the base of retail sales contracts are “laddered” so that a portion of the sales contracts are expiring (or subject to price changes) on a regular basis. In addition, they would structure a portfolio of supply contracts with varying contract renegotiation terms. And, importantly, they would hedge their price risks, either directly (i.e. by dealing directly in

the futures markets) or by insisting that their suppliers take on portions of the price risk by locking in prices for varying terms – thereby shifting portions of the commodity price risk “upstream” in the supply chain.

One of the key tools that market participants typically use to hedge against the risk of volatile commodity prices is the use of futures contracts traded on a commodities exchange such as the New York Mercantile Exchange or the Chicago Board of Trade. Recognizing the importance of futures contracts in the price risk management, representatives of the Federal Energy Regulatory Commission met with NYMEX officials regarding the natural gas industry in the early 1980s. The NYMEX eventually developed and began trading a contract for natural gas that offered market participants a vehicle for managing the risk of price changes in that commodity, which, by the early 1990s had become an integral part of the market institutions of the natural gas industry.

When we look at the electric power industry, however, we find these tools for managing commodity price risks to be insufficient, particularly in comparison with the natural gas industry. This is illustrated by the chart alongside, which shows the monthly trading volume in futures contracts traded on the New York Mercantile Exchange. This number is an indication of the *depth* of the futures market in that commodity and hence is an (admittedly approximate) surrogate for the aggregate capacity for managing price risk in that commodity through the use of futures contracts traded on the NYMEX. Although the energy equivalence of the natural gas and the electric



power contracts differ somewhat, they are sufficiently close to make the chart a meaningful comparison of the relatively ability of the two industries to manage price risk..

What we see is that trading volume in the natural gas contract rose steadily after the contract began trading around 10 years ago, and is now between one and two million contracts, representing an aggregate *monthly* value of between \$50 billion and \$100 billion dollars (assuming \$5.00/dth for gas price).

The electric power contracts -- of which there are four -- tell a different tale. Volume in all the power contracts combined peaked several years ago, in the summer of

1998, and has fallen ever since. The aggregate value of all of these electricity futures contracts is but a tiny, tiny percentage of the value of the gas contracts. What this means is that the aggregate capacity of the electrical power industry to manage commodity price risk is but a tiny percentage of the capacity of the natural gas industry to do the same. Yet as noted above, the power industry is roughly three times the size of the gas industry and the relative need to manage electric price risk is considerably greater than the need to manage gas price risk. Hence one should expect the dollar value of the monthly contracts traded in electricity to be something on the order of \$150 billion to \$300 billion, instead of the infinitesimal amounts that are the case instead.

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In short, it is hardly surprising that the power industry is facing pricing difficulties since some of the necessary price risk management tools failed to evolve the way they did in the gas industry.

The unavailability of the robust, deep futures markets has meant that industry participants must rely solely on forward contracting and "over-the-counter" financial tools (e.g. swaps). While these risk management tools serve important roles in the market, they generally provide less transparent pricing to buyers than liquid publicly traded futures.

A key issue for the Commission and the public is to understand why the power industry has not had access to the full panoply of price risk management tools. This would be an extremely fruitful area for the Commission to investigate. While the phenomenon may be due to a variety of factors, the Center respectfully submits that the single most significant reason was the adoption of retail pricing and market institutions that were designed and operated to foreclose markets for future contracts, depriving them of the liquidity required to grow. California is the key example: by effectively requiring the utilities to purchase all of their supply on a on a day-by-day spot market basis at hourly prices, the market rules prevented effective hedging and exacerbated price swings when supplies tightened. Moreover, establishing the Power Exchange (PX) as an effective monopoly during the multi-year transition period (by requiring all in-state generation sell into the PX and the utilities to buy out of the PX), meant that the rules effectively *concentrated all of the price risk on the balance sheets of the two utilities*, rather than spreading it over all of the individual purchasers who could otherwise have bought from a variety of suppliers.

In short, all of the price risk management "eggs" were piled into a single basket – the utilities. When the risks became real as daily wholesale prices rose above the long-term fixed retail price, the financial impact was concentrated exclusively on those two customers. When the costs became unbearable, the State itself moved to take over the price risk -- but still without adequate, transparent tools to manage that risk itself (other than by locking in long-term forward prices at what may end up being the market peak).

The adoption of certain pricing rules in other markets may also be found to have leached liquidity from the futures markets. While there may be other justifications for

particular pricing rules to be adopted, the point here is that one must take into account the impact of those rules on price risk management tools such as the futures contracts.

The Commission could play a valuable role here in highlighting the critical role of price risk management tools in a workably competitive commodities market and identifying in a systematic fashion those aspects of State and Federal regulation that have interfered with the normal development of those tools for the electric power industry.

B. Islands or Interstates: the Absence of Physical and Organizational Integration of the Power Markets

1. The wholesale markets. The Nation's power grid -- representing billions upon billions of dollars of physical assets -- was not designed to operate as an integrated national power grid. Rather it evolved over the last 40 years to serve a very different set of operational and commercial needs. When Thomas Edison was initially developing the electricity industry, he expected that power would be generated very close to the point of use, with each apartment building having its own generator. And indeed, this is the way the industry first developed in the eastern US. But Edison's protege, Samuel Insull, had other ideas. When Edison sent Insull to Chicago in the 1890s, Insull had the opportunity to develop his focus on central station generation, with the power then distributed via a network of distribution wires. Thereafter, for the industry's next hundred years or so, Insull's model prevailed.⁶

The reaction to the rash of industry bankruptcies during the Depression lead Congress to preclude the integration of the industry. Instead, the Public Utility Holding Company Act forced the breakup of the existing utility networks and created significant regulatory barriers to integration. In effect the Nation adopted a policy of encouraging -- and indeed to a large degree forcing -- the electric power industry to develop as relatively self-contained "islands" operating within a single state, or a few adjacent states. From an operational standpoint, the implementation of restrictions on the organizational integration of the industry had much less impact in a day where most electricity was generated quite close to markets. As the industry evolved in the following decades, however, these operational islands gradually became a kind of archipelago with an increasing number of relatively short links created between the islands.

⁶ An exceptionally readable (but somewhat hard to find) work that details these events is Forrest McDonald's classic work *Insull* (Chicago: University of Chicago Press, 1962).

The majority of these links were not planned or built as interstate highways, however. For example, today there are still only three significant links between the New England and the New York power grids: one large interconnection from New York to Connecticut; one modest interconnection between New York and Western Massachusetts and a quite small interconnection between New York and Vermont.⁷ It may be easier to ship power north into Canada and receive it through the DC line from Hydro Quebec to the Boston suburbs than to try to go from New York to Hartford. Only the peculiarities of 70 years of the regulatory history explain the fact that states that are economically linked a thousand ways are virtually foreign countries from the standpoint of the electric power industry.

The legal balkanization of the power industry thus led to a *physical* balkanization, which in turn has been captured and reflected in our language and how we therefore *think* about the issues: governments and analysts alike refer to companies in California “importing” power from Oregon or Washington and one reads of proposals to limit the “export” of power from California to, say, Las Vegas. A Virginia buyer would never speak of “importing” Internet routers from a manufacturing facility in Silicon Valley any more than it would need to convert its currency from US dollars to California dollars to pay for the shipment. Yet the electric power industry has been balkanized by law for so many decades that it seems perfectly normal to market participants to treat each state as a sovereign nation with conflicting rules and tariffs for “importing” and “exporting” power to fellow Americans.

This kind of language leads easily to the suggestion that a particular state should be “energy independent” – as though New Hampshire should drill through granite for gas or Iowa should be self-sufficient in computer code for PC operating systems. It is but a small step from this kind of thinking to argue that no power should be “exported” until “native” loads are met.

What other aspect of the American economy operates on such principles?

In the early part of the last century, the Supreme Court held that West Virginia could not prohibit “exports” of natural gas to Pennsylvania and Ohio in order to ensure adequacy of supply to West Virginians. The Court’s analysis from 80 years ago is still to the point:

If the States have such power [to confine use of gas to the inhabitants of one state] a singular situation might result. Pennsylvania might keep its coal, the Northwest its timber, the mining States their minerals. And why may not the products of the field be brought within the principle? Thus enlarged, or without that enlargement, its influence on interstate

⁷ See, e.g. the map of the ISO New England available on the internet at: http://www.iso-ne.com/FERC_filings/documents/FERC_715/1999_NE_Transmission_Map.pdf. An excerpt of this map showing the western boundary of the New England grid is reproduced as an attachment to these comments.

commerce need not be pointed out. To what consequences does such power tend? If one State has it, all States have it; embargo may be retaliated by embargo, and commerce will be halted at state lines. And yet we have said that '*in matters of foreign and interstate commerce there are no state lines.*' In such commerce, instead of the States, a new power appears and a new welfare, a welfare which transcends that of any State. But rather let us say it is constituted of the welfare of all of the States and that of each State is made the greater by a division of its resources, natural and created, with every other State, and those of every other State with it. This was the purpose, as it is the result, of the interstate commerce clause of the Constitution of the United States. If there is to be a turning backward it must be done by the authority of another instrumentality than a court.

Pennsylvania v. West Virginia, 262 U.S. 553, 67 L. Ed. 1117, 43 S. Ct. 658 (1923) (printed from <http://www.versuslaw.com> at <http://www.versuslaw.com/plweb-cgi/fastweb.exe?getdoc+view1+SCT+11792+0+wAAA+%28Pennsylvania%26gas%29AND%2619150101%3C%5Eadates%3C%5Ea19250101> (emphasis added).

It is truly extraordinary that such terminology and such thinking still prevail in the 21st century for a commodity that moves at nearly the speed of light over all interconnected systems without any regard for jurisdictional boundary lines. The fact that such thinking is in fact commonplace shows the extent to which competitive open access to the transmission grid calls for a profoundly different *psychological*,⁸ as well as regulatory and physical, infrastructure.

Hence, it would be extraordinarily helpful for this Commission to highlight the "missing link" of interstate transmission and the legal, business, or operational issues that account for it. While there may be others, we respectfully submit that the Commission will find the *presence* of the Public Utility Holding Company Act and the *absence* of a federal right of eminent domain for the acquisition of rights of way to be two of the key factors. Other factors may of course include dysfunctional regulation that encourages regulated companies to devote capital to non-transmission related investments (that are allowed a higher return on the investment); and difficulties in the creation of interstate organizations for coordinating and managing transmission assets.

⁸ Compare T. Kuhn, *The Structure of Scientific Revolutions*, the work which developed the concept of the "paradigm shift" and stressed that new paradigms are initially adopted for reasons other than the mere ability to explain the facts. Copernicus, for example, was quite wrong in insisting that the earth and the planets moved around the earth in a circle, an error that meant that his calculations of planetary movements were really no more accurate – and perhaps less accurate -- than those who showed how everything revolved in cycles and epicycles around the earth. It was Kepler's insight that the orbits were *elliptical* that saved Copernicus' reputation from history's dustbin: he had been *approximately* right, rather than *precisely* wrong. Kuhn's insights played a major role in restructuring the Nation's gas pipeline industry in the 1980s; a comparable change in thought patterns is required to liberalize the power markets.

Remember that it is the legal balkanization of ownership of transmission assets that forces market participants to try to create *contractual* organizations (ISOs or RTOs) to manage nearly all of the transmission assets. Allowing for the rationalization of the *ownership* structure of transmission (subject to appropriate regulatory oversight and control) would place less stress on the “camel-created-by-a committee” organizations that are RTOs. In short, market participants would be able to identify which form of organization – ownership or contract – made the most sense in each instance.

In any event, it is important for the Commission to explore the barriers to transforming electric transmission from “spurs and ramps” among the islands to true interstate transmission lines designed to handle major power flows.

2. *Balkanization through inconsistent retail plans.* The Center anticipates that the Commission will hear of a bewildering assortment of retail access plans, with differing terminology, differing rules, and differing substance. The Commission should recognize that the very fact that there are so many different approaches sharply constrains the ability to achieve scale economies in marketing. In effect, each utility tends to become a separate market, with the conflicting regulatory tariff, licensing and marketing rules serving *themselves* as so many barriers to entry.

Theory suggests that this favors incumbent suppliers; experience appears to confirm it.

The Center would thus urge the Commission to examine the extent to which the inconsistencies of the various liberalization plans in fact function to retard competitive access for all consumers. It would be instructive to simply measure the upfront costs of achieving and maintaining mastery of the applicable terms and conditions of, say a half-dozen utilities located in just three states, and then obtain regulatory approval to enter those markets and remain in complete regulatory compliance for two years.⁹

Some of these costs are clearly warranted. But the Commission could play a very helpful role in highlighting them and the role they play in reducing consumers' competitive options.

⁹ The Center is not aware of any reciprocity of licensing among the various states. It would certainly appear possible for states to adopt reciprocity rules such that a new entrant licensed by one state would be automatically licensed in others (assuming, of course, that the originally licensing state set agreed-upon standards). A federal initiative encouraging such reciprocity would be a very modest step that could actually have very tangible, pragmatic value.

V. CONCLUSION

In the 1930s, it was this Commission's detailed analysis of the Nation's natural gas markets that lay the factual foundation for reforming regulation of the interstate transmission of natural gas. The (quite literally) dusty volumes of the FTC's original report are well worth a review, drafted and produced as they were without the benefit of word processors or copying machines. The report demonstrated a remarkably well-documented and clear understanding of the challenges of dealing with markets that were both highly-competitive and highly non-competitive.¹⁰ The Natural Gas Act that resulted from that study, for all its flaws in design and implementation, has served the country remarkably well for nearly 70 years; this Commission should be proud of the role that it play in its creation.

The Center urges the Commission to take the initiative to serve a comparable role for the current century by identifying the legal, institutional and commercial barriers that are precluding the operation of the Nation's power markets and instituting procedures to assist in developing proposed remedial measures.

Respectfully submitted,

CENTER FOR THE ADVANCEMENT OF
ENERGY MARKETS

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April 3, 2001

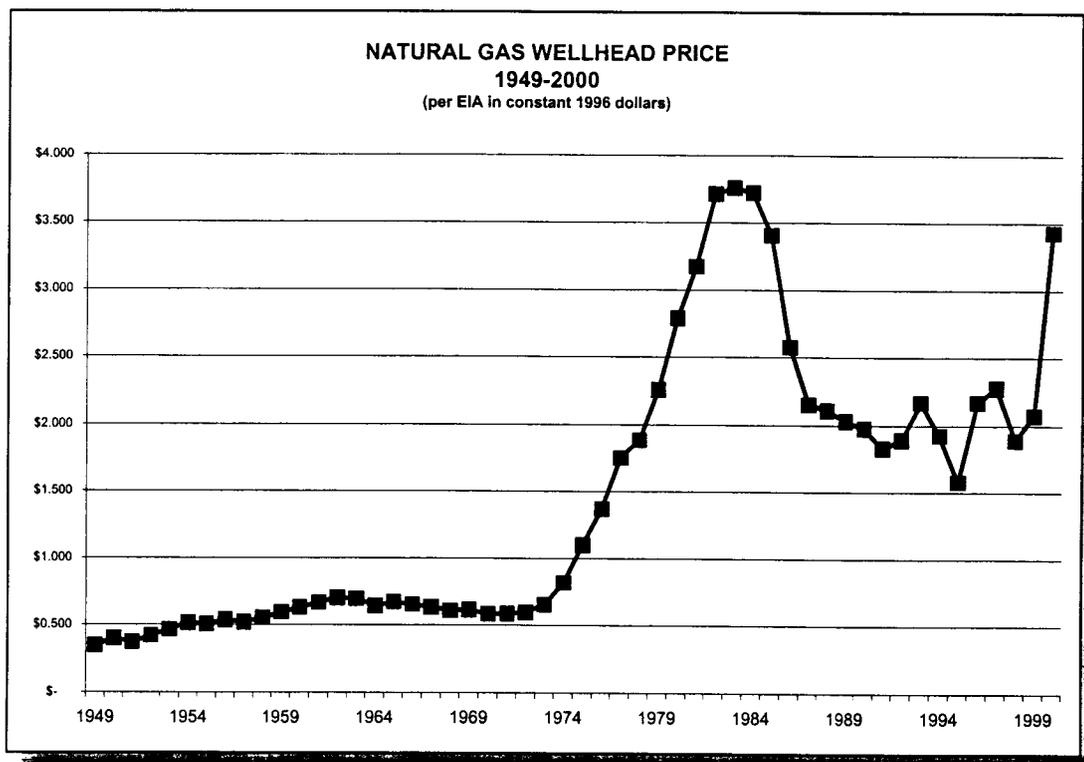
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Attachments

¹⁰ For review of the FTC' analysis and an assessment of its ongoing relevance to the structuring of pricing and regulation in such an environment, see P. Marston, "An Historical Perspective of Industrial Natural Gas Pricing", *Public Utilities Fortnightly* (July 11, 1985).

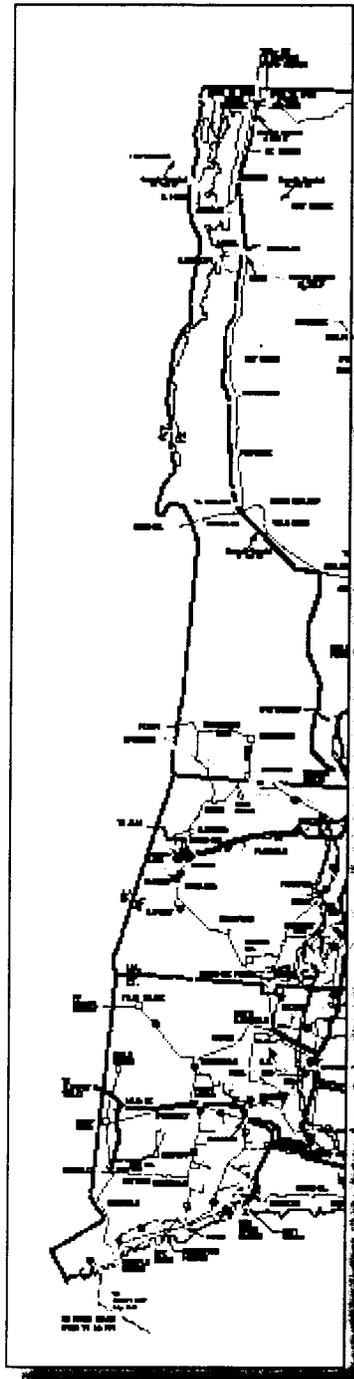
FIGURES AND CHARTS

FIGURE I



MAP SHOWING NEW YORK/NEW ENGLAND INTERCONNECTS

The graphic to the right shows the eastern border of New York state and the interconnections with the power grid of New England. The image is copied from the website of ISO New England at http://www.iso-ne.com/FERC_filings/documents/FERC_715/1999_NE_Transmission_Map.pdf



■ Electric Restructuring: Failure, Progress and Chaos

*An Executive
Summary of
Retail Energy
Markets 2000*

March 2001



— XENERGY®
Kema Consulting

Difficult Markets Have Not Stopped Investors

Despite the difficulties in early retail energy markets, the past year saw a large infusion of capital. In the mass market alone, investments in four retailers exceeded \$1.5 billion, reflecting the tremendous opportunity in these markets.

Page 7

Ohio Opens, Municipal Aggregation Boosts Market

The fourth largest market in the US appears to be off to a good start, with most activity concentrated in northern Ohio. 100,000 customers switched in the first month. Large aggregation deals may push the number to 1 million by year end.

Page 8

Texas Considered Best Market Design To Date

We expect the unique restructuring model being implemented in Texas to create an active retail market upon its opening January 1, 2002.

Page 9

New Jersey Has A Disappointing First Year, Prospects Poor

High wholesale prices combined with fixed default rates and regulatory hurdles have dampened the once optimistic mood for competition in the Garden State. Roughly 2 percent or 65,000 residential customers and 18 percent of nonresidential load have switched.

Page 9

Pennsylvania Continues To Lead The Country, But Markets Have Declined

With roughly 570,000 accounts switched, representing 6,100 MW of load, Pennsylvania continues to lead the country in customer participation. However, the once high fixed rates charged for default service are now relatively cheap in light of the dramatic run up in wholesale prices. Consequently, market activity is in decline, particularly for C&I customers.

Page 10

“Deregulation is dead. Let me repeat that. Deregulation is dead.”

Carl Wood, Commissioner
California Public Utilities
Commission

“I’m not trying to be a Pollyanna. Things will go wrong. But most things will go right.”

Pat Wood, Chairman
Texas Public Utility
Commission

Meltdown in the West – Expansion in the East

The California electric crisis continues to send shock waves across the globe and the fall out is far from over. Its impact led to the repeal or slowing of restructuring in at least five states. Within California, it now looks as though the state will be locked into 10- and 20-year power contracts – a mammoth series of QF-like deals – potentially closing out retail competition in the Golden State for the next decade.

Yet, other markets are moving full steam ahead. Texas, Ohio, Pennsylvania, Maine and others are advancing competition through aggressive, free market reforms. Recent aggregation and competitive default service deals will catapult the number of consumers in competitive markets from one million to over two million by the end of 2001. The Bush administration has or is likely to appoint key policy makers that are strong free market proponents. Investment levels in the retail business were higher than ever over the past year, but so was the number of firms retreating or exiting the business (see Figure 1).

Figure 1
Exits and Retreats
From Retail
Energy Markets

2000	<p>Columbia Energy Services DTE Edison America PG&E Energy Services Southeastern States Energy Sunshine Energy Titan Energy Utility.com</p> <p>AES Power Direct (NJ) Allegheny Energy (PA) Commonwealth Energy (CA) Connectiv Energy Energy America (NJ) eSSENTIAL.COM Exelon Energy (NJ) FirstEnergy Services (PA, NJ) Go-green (CA) GPU Advanced Resources (PA) Green Mountain Energy (CA) KeySpan Energy (GA, NY) New West Energy (CA) NewEnergy (CA, PA)</p>	1999	<p>DTE-Coenergy EdisonSource Electric Lite EnergyVision FPL Energy Services Friendly Power PacifiCorp Peachtree Natural Gas Philadelphia Gas Works PSEG Energy Technologies</p> <p>Connectiv Energy DukeSolutions Exelon Energy (MA) NewEnergy (Pitt., upstate NY) Select Energy</p>	1998	<p>EnergyOne MainePower Montana Power T&M QST Energy Wheeled Electric Power XENERGY</p> <p>Enron Energy Services (CA) PP&L EnergyPlus (residential)</p>
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Note: Companies in bold have left the retail commodity business completely, other companies have exited states or customer classes (i.e. residential)

Source: Retail Energy Markets 2000, Industry Highlights, Competitor Analysis

Despite the California crisis, significant progress was made over the past year, especially east of the Rockies. Over eight million customers became eligible for choice in 2000 and more states opened than any previous year — four states opened for the first time and five states expanded the eligible number of customers. As of early 2001, the number of customers eligible for choice exceeded 37 million or roughly 40 percent of all accounts nationwide. By January 2002, the number of eligible customers will total 53 million – almost half the US total. Figure 2 shows the increase in eligible customers for electric choice.

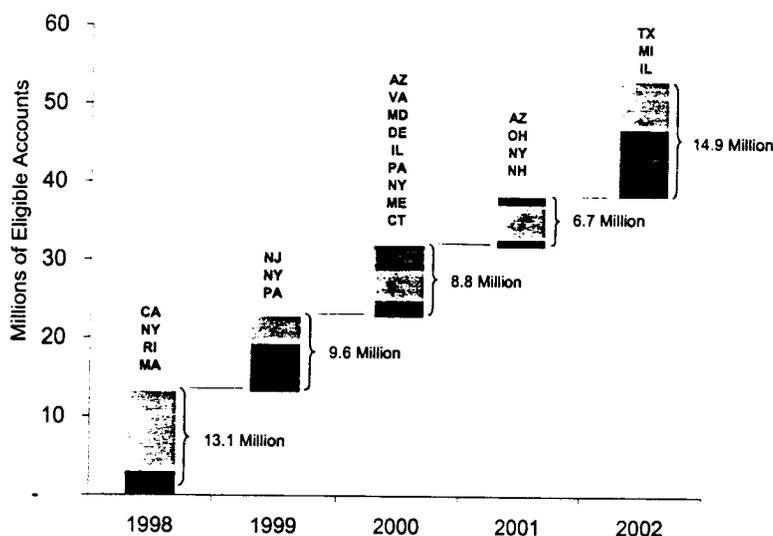


Figure 2
Opening of Restructured Electric Markets, by Customers and State

Note: Several states are phasing in retail choice. States with a major phase in (over 100,000 customers) are shown over multiple years

Source: Retail Energy Markets 2000

Default Service Drives Market Activity

Default service policies deserve poor grades for advancing competition in most states. Default service — generation service provided to customers that are not served by a competitive supplier — has numerous variations within the US. Pricing is the key element of default service and is often more oriented towards short-term consumer protection (fixed discounted rates) than competition (market-based price). Suppliers are often the utility, although a few third parties have been selected through assignment or a competitive process.

In general, more market-based and less utility-centered default service policies leads to higher levels of competition and customer choice. This is the single most important factor driving the (slow) development of retail markets. Table 1 shows the current status of three primary default service policies. More detail can be found on each state in its respective Restructuring Brief.

Table 1
Current Status of
Default Service in
Selected
Restructured States

State	Market-based Retail Price	Non-utility Supplier	Unbundled Customer Service**
California	●	●	○
Connecticut	●	○	●
Illinois	○	●	○
Maine	○	●	●
Maryland	●	●	●
Massachusetts	○	○	●
New Jersey	●	●	●
New York	○	○	●
Ohio	○	●	●
Pennsylvania	○	○	○
Rhode Island	○	○	●
Texas*	○	●	○

Yes ○ Partially ● No

*Projected status at market opening: Texas will not open until January 1, 2002; ** Unbundled customer service refers to competitive metering, billing and customer care.

Source: Retail Energy Markets 2000, Volume III. Restructuring Briefs

Overall Market Activity Remains Low

As of February 2001, roughly 880,000 residential customers and 210,000 nonresidential customers have selected a competitive supplier. This amounts to 0.8 percent of all residential and 1.4 percent of all nonresidential customers in the U.S. As a percentage of load, nonresidential customers have migration rates of 10 to 70 percent in restructured states, while residential rates exceed three percent only in Pennsylvania. As shown in Figure 3 most residential markets have experienced minor increases in switching over the past year while nonresidential markets, as shown in Figure 4, have experienced a mix of increases and decreases across states.

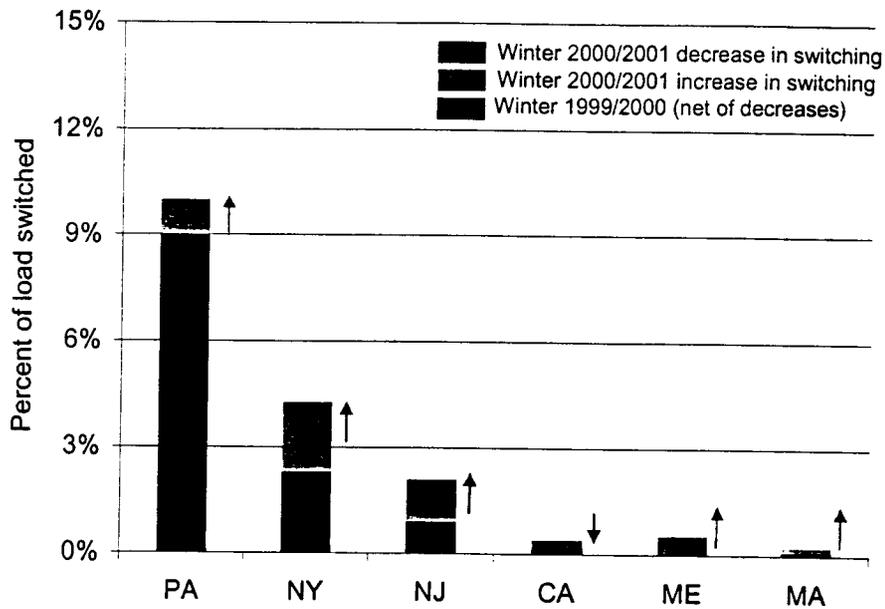


Figure 3
Residential Switch Rates as a Percentage of Load

Source: Retail Energy Markets 2000, *Retail Energy Foresight*

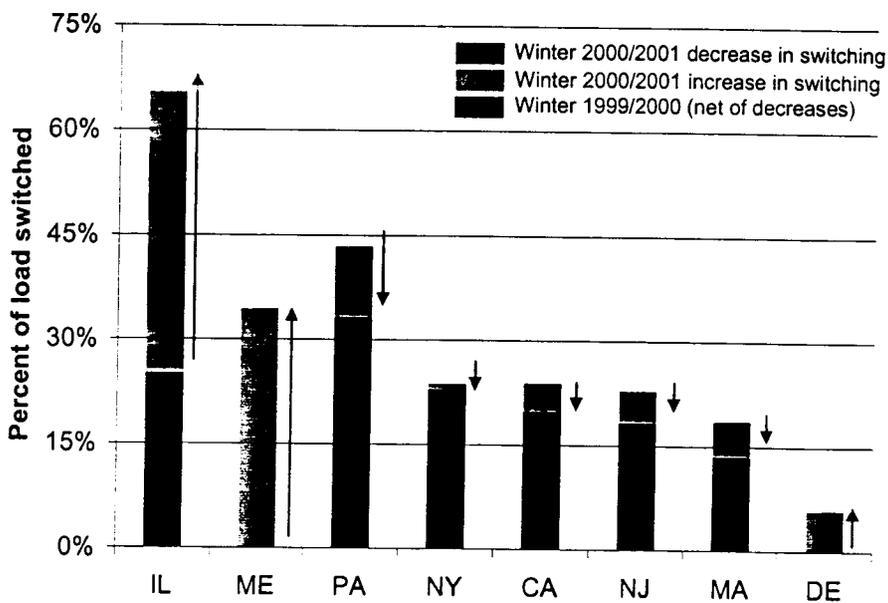


Figure 4
Nonresidential Switch Rates as a Percentage of Load

Note: Illinois data is in percent of eligible load switched, not percent of total load switched.

Source: Retail Energy Markets 2000, *Retail Energy Foresight*

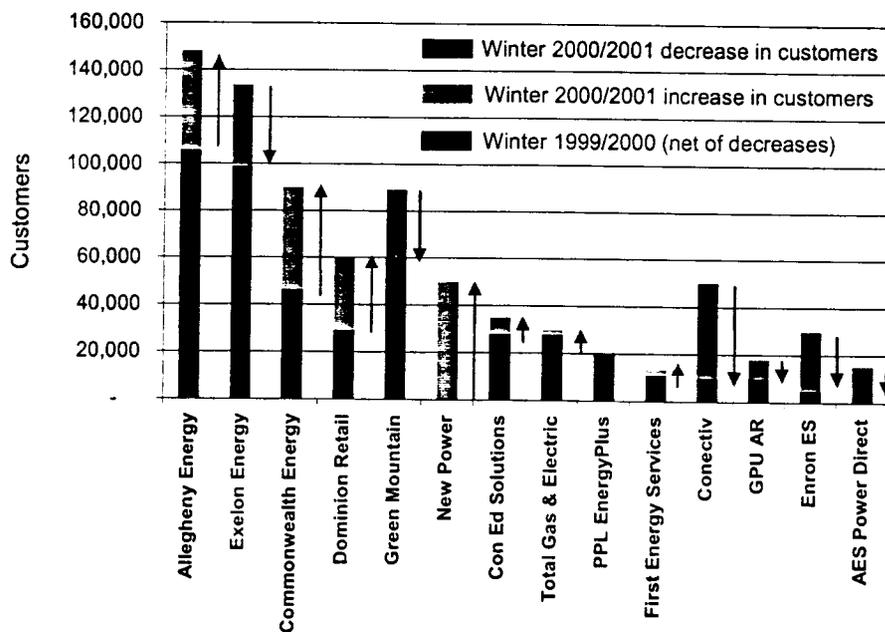
Low Switching Equals Small Customer Bases

With roughly one million customers migrated and fifty retailers serving them, the customer bases of leading retailers are small – most of them far from critical mass. A handful of mass-market retailers have over 100,000 customers and a few nonresidential retailers have over 5,000 customers. Figure 5 shows XENERGY estimates of customers served by retailer. The changes from last year reflect significant turmoil in the market, specifically marketer retreat, acquisitions and new entrants.

Over the coming months the customer bases of a few retailers are likely to grow dramatically due to a number of “portfolio” acquisitions (e.g. municipal aggregation, competitive default service). Portfolio deals announced include:

- Green Mountain: 400,000 Ohio and 50,000 Pennsylvania customers
- New Power: 300,000 Pennsylvania customers
- WPS Energy Services: 300,000 Ohio customers
- Allegheny Energy Supply: 103,000 Ohio customers

Figure 5
Changes in Retailer
Customer Bases



Source: Retail Energy Markets 2000, Volume II. Competitor Analysis

Gross Margins Are the Biggest Obstacle

Gross margins were thin in 2000 and in some cases negative for retailers. Most of the exits and retreats are explained by this one metric. Gross margins over the past year have been small and highly volatile due to regulatory and wholesale market uncertainty. In general, projected gross margins are 3 to 15% for mass market retailers and 1 to 6% for C&I focused retailers. Actual margins over the past two years have tended to be less than projected. At this stage of development, the economics of the business work at the high end of these ranges and disintegrate at the low end. Our research found the following projected or historical gross margins:

- New Power targets 7 to 10% gross margins
- AES Power Direct targets 4 to 6% gross margins
- NewEnergy reported a **negative 4.1%** gross margin in 1999
- NewEnergy expects a 4.1% gross margin in Ohio
- Columbia Energy Services reported a **negative 8.6%** gross margin in Pennsylvania
- Enron's electric margins range from 1 to 3%, according to Deutsche Bank

We expect most retailers will continue to fall in the ranges above, but it is almost certain that a handful of companies will report negative gross margins for 2001.

Customer Acquisition Costs Drive Net Margins

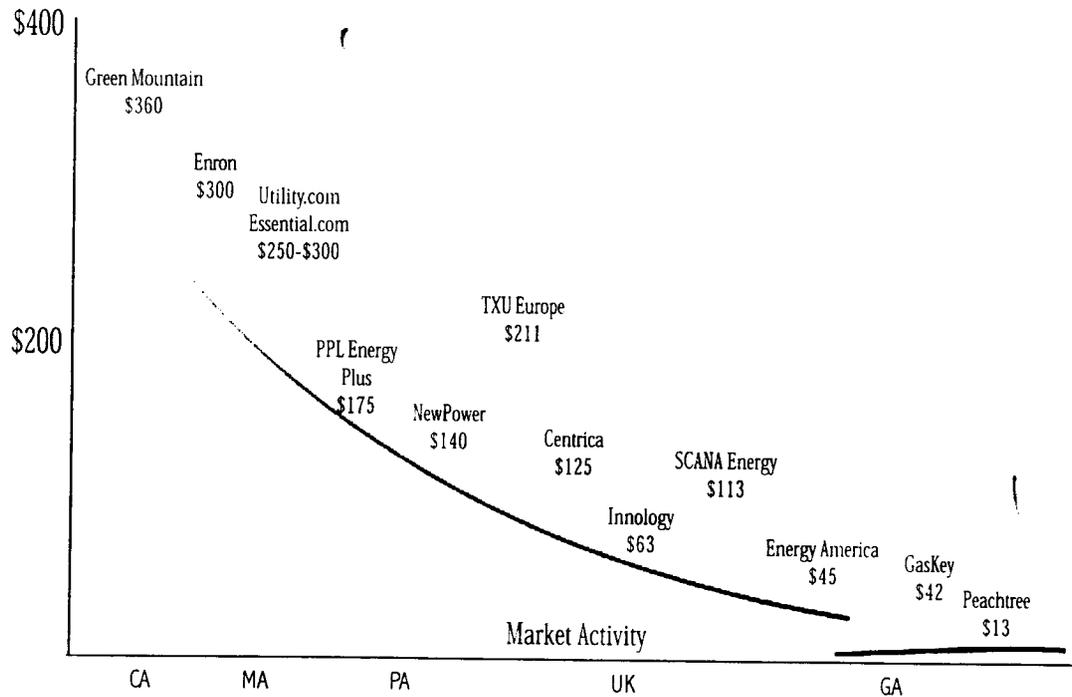
In markets where gross margins are at sustainable levels, profitability is driven in large part by acquisition and customer care costs. Motivating residential customers to switch electric providers has been a difficult undertaking in most retail markets, often resulting in acquisition costs in the range of \$200 to \$400 per customer. A few markets have experienced significant customer response and, consequently, relatively low acquisition costs. The payback on residential acquisition costs can vary greatly, but the business model can quickly breakdown when the costs exceed \$300 per customer. Table 2 provides per customer gross profit ranges for residential customers – we expect that most residential customers are in the \$5 to \$25 range.

	Low	High
Annual Energy Usage (kWh)	5,000	20,000
Retail Prices (cents per kWh)	3.0¢	7.0¢
Gross Margin (%)	0%	10%
Annual Gross Profit	0	\$140

Table 2
Residential Gross
Profit Illustration

In early markets, acquisition costs have varied widely (\$15 to \$400 per customer) based on the level of market activity, the channel used and the effectiveness of the retailer. Figure 6 maps acquisition costs by market activity. Markets on the far left of the figure have experienced the least activity – less than three percent switching, while markets on the right have experienced the most amount of activity.

Figure 6
Historical Customer Acquisition Costs By Market for Selected Markets



Source: Retail Energy Markets 2000, Volume II. Competitor Analysis

Difficult Markets Have Not Stopped Investors

Although many retail markets continue to flounder, and in some cases, fail, retail energy markets received a large infusion of capital in 2000. In the mass market alone, investments in The New Power Company, Direct Energy, Utility.com (now defunct) and Green Mountain Energy exceeded \$1.5 billion, reflecting the tremendous opportunity in these markets. Figure 7 maps retail investment by market and product strategy for selected retail companies. The wide range of investment levels and strategies continue to fuel innovation and build expertise.

Market Strategy	large - national	Centrica	\$600 - 750 M	Enron Energy Services	\$300 - 500 M
		NewPower	\$170 - 400 M	Duke Solutions	\$50 - 150 M
		AES New Energy	\$80 - 150 M	Sempra Energy	\$50 - 150 M
		Green Mountain Energy	\$75 - 150 M		
		PG&E Energy Services	\$120 - 200 M		
	small - regional	AES Power Direct	\$15 - 25 M	PSEG Energy Technologies	\$20 - 40 M
		GPU Advanced Resources	\$8 - 15 M	PEPCO Energy Services	\$5 - 10 M
		Commonwealth Energy	\$10 - 20 M		
		Commodity First		Services First	
		Product Strategy			

Figure 7
Retail Investment by
Market and Product
Strategy

Ohio Opens, Municipal Aggregation Boosts Market

Overshadowed by the California crisis, the Ohio electric market opened on January 1, 2001 with relatively little fanfare. However, the fourth largest market in the US appears to be off to a good start, with most activity concentrated in northern Ohio.

With 8 out of the 23 registered suppliers targeting residential customers, the Ohio residential market has experienced moderately active markets, with roughly 100,000 residential customers switched at the end of the first month. Municipal aggregation deals have already been struck that will likely migrate 700,000 customers over the coming months. We expect Ohio to be the first state to hit the one million mark in late 2001, followed by Texas and Pennsylvania in 2002.

Like the residential market, most C&I activity is found in northern Ohio. As part of REM2000, XENERGY surveyed 60 large business customers during November and December. Each company has been in contact with retail suppliers. The key findings of our research include:

- The most active nonresidential suppliers are FirstEnergy Services, Enron, NewEnergy and Allegheny Energy Supply.

- 50% of the 54 businesses interviewed that did not choose a supplier expect to do so in the next three months.
- Although a retailer has contacted all 60 end users, unaided awareness levels did not exceed 10 percent for any retail company other than FirstEnergy (23%).

Texas Makes Major Progress, Considered Best Market Design To Date

The unique restructuring model being implemented in Texas is expected to create an active retail market upon its opening January 1, 2002. The pro-competition elements model include the transfer of default customers to the incumbent utility's affiliate, a relatively friendly process for siting new generation, aggressive market power mitigation provisions and a relatively well developed Independent System Operator (ERCOT ISO). A pilot program for 5 percent of customers starts on June 1, 2001 and marketing has already begun. XENERGY expects significant levels of competition and customer participation in the fall as rules are solidified and numerous retailers seek to sign up customers in advance of the market opening.

As part of the REM2000 effort, XENERGY conducted a small-scale survey to assess the climate prior to the market opening. Interviews with 20 large electric users revealed that relatively little deal making is occurring in advance of the market opening. Other key findings include:

- Five out of the 20 companies interviewed were contacted by one or more of the following suppliers: Enron, TXU, Reliant, NewEnergy, Dynegy, and Tenaska.
- The majority of customers interviewed are seeking short-term contracts of less than three years with fixed rate pricing plans.
- Half of those interviewed were interested in bundling electricity with natural gas and other fuels; several customers were interested in onsite generation/cogeneration and energy efficiency services.

New Jersey Had A Disappointing First Year, Prospects Are Poor

Despite relatively high shopping credits and a well-developed wholesale market, the New Jersey choice program has been disappointing for most retailers and competition advocates. High wholesale prices combined with fixed default rates and regulatory hurdles have dampened the once optimistic mood for competition in the Garden State. Roughly 2 percent or 65,000 residential customers have switched at the beginning of 2001, holding steady for most of 2000. With the exit of AES PowerDirect and Energy America from the market in January 2001, roughly 40,000 customers or 40 percent of all switchers will return to utility service this spring. Nonresidential switching is currently at 18 percent of load (33,000 accounts), down from about 23 percent of load in the spring of 2000. We expect continued decline during 2001. Figure 8 shows the percentage of load switched for all customers during 2000.

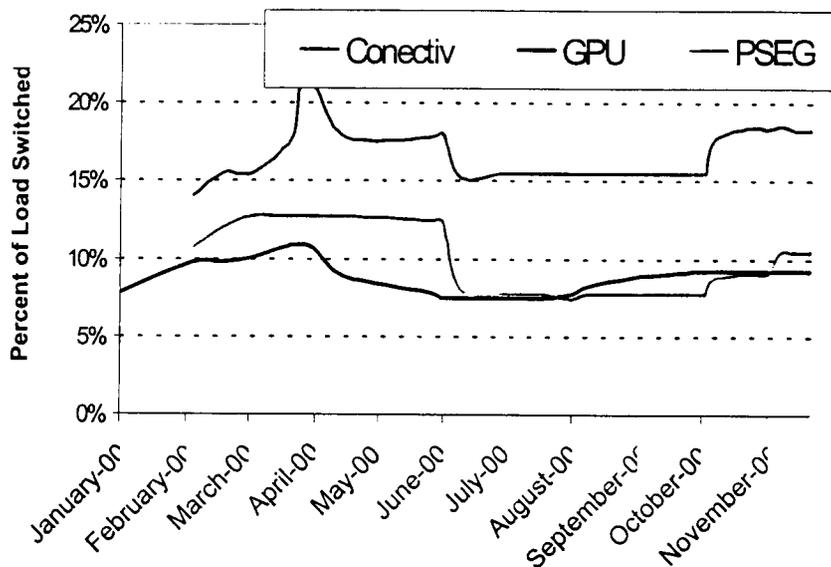


Figure 8
New Jersey Switch Rates by Utility (all customers)

Source: Retail Energy Markets 2000, New Jersey BPU

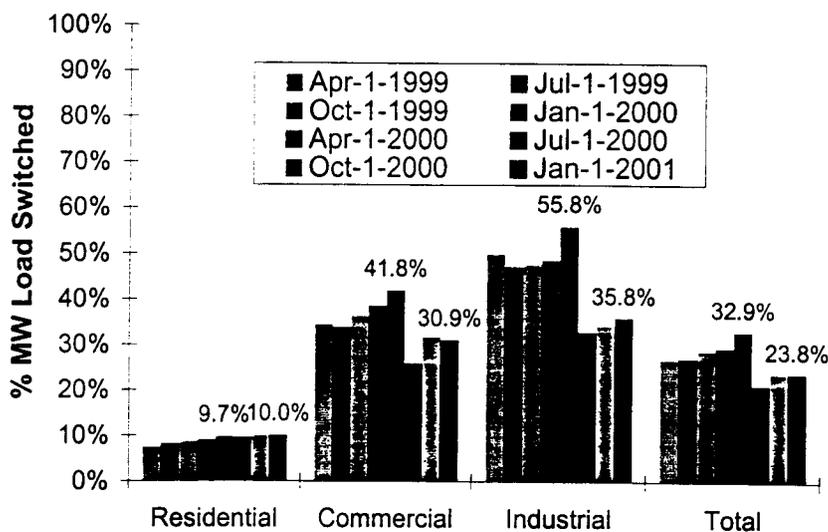
Our key findings from surveys conducted November 2000 through January 2001 reflect the relatively slow development of the New Jersey market:

- Depending upon utility territory, 50 to 60% of nonresidential customers could not name a competitive supplier without prompting.
- Approximately 20% of nonresidential switchers have churned among multiple retailers and another 20% have returned back to utility service.
- Roughly 25% of all nonresidential switchers chose their supplier through an aggregation group, down from 40% in early 2000.

Pennsylvania Continues To Lead The Country, But Markets Are In Decline

With roughly 570,000 accounts switched, representing 6,100 MW of load, Pennsylvania continues to lead the country in customer participation. Pittsburgh and Philadelphia, in particular, have proven to be the best launching points for many retailers and the best markets to observe and test business models and marketing tactics. Although the Keystone State has the most advanced competitive market, the once high fixed rates charged for default service are now relatively cheap in light of the dramatic run up in wholesale prices. Consequently, market activity is in decline, particularly for C&I customers (see Figure 9).

Figure 9
 Pennsylvania Switch
 Rates by Customer
 Class



Source: Retail Energy Markets 2000, Pennsylvania Office of Consumer Advocate

XENERGY interviewed roughly 250 residential customers and 300 nonresidential customers during this decline. Our key findings include:

- Green Mountain Energy is the most recognized retailer in Pennsylvania – over one third of consumers that switched can name the company without prompting.
- 14% of residential customers moved to another supplier over the past year and 18% moved back to their regulated utility.
- Allegheny Energy Supply dominates the nation's most active residential market, Duquesne, with a 74% market share.
- The Top 3 residential retailers in PECO's service territory are Green Mountain Energy, Exelon Energy and electricAmerica.
- The Top 2 nonresidential retailers are Exelon Energy and PPL EnergyPlus. Both continue to dominate, but have seen their combined market share erode over the past year from 79 percent to 49 percent.

Deliverable Summary of REM2000

Final Report

Volume 1. Customer Research and Market Analysis

Pennsylvania

257 residential surveys
307 C&I surveys
Secondary research

Texas

20 large C&I surveys
Secondary research

Ohio

60 C&I surveys
Secondary research

New Jersey

103 residential surveys
150 C&I surveys
Secondary research

Volume 2. Competitor Analysis

AES
Allegheny Energy
Centrica
DTE Energy
DukeSolutions
Energy eTailers
Energy Outsourcing
Enron Energy Services
Exelon
FirstEnergy
Green Mountain Energy
New Power Company
Retailer Profitability
Select Energy
Sempra Energy
The Retailer Yearbook
UK Retailers

Volume 3. Restructuring Briefs

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Connecticut
Illinois
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Pennsylvania
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REM2000 Website

REM reports
Company and regulatory tracking
Copies of print and TV ads

Access to Analysts

Ad hoc information requests
Strategic consulting

Market data

Ad spending data
Deals database
Industry Highlights email

Meetings

3 Executive Forums
3 Client meetings

Other Syndicated Research

Back Room Operations

Electricity Products and Services

Retail Gas Markets

Beyond Commodity: Nonresidential Energy Services Market

Internet Strategies

Wholesale Market Structures

Customer Education Campaigns

Performance-Based Ratemaking

DISCO2001

Distributed Generation Markets

Retail Aggregation

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