

**COMMONWEALTH OF PENNSYLVANIA
PENNSYLVANIA PUBLIC UTILITY COMMISSION:**

**Investigation of Pennsylvania's Retail Electricity Market: Docket No. I-2011-
2237952:**

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ENVIRONMENTAL ECONOMICS, THE PENNSYLVANIA STATE
UNIVERSITY, June 8, 2011**

I. Introduction

I am Andrew Kleit. I am Professor of Energy and Environmental Economics at the Pennsylvania State University. Prior to joining the faculty at Penn State I was an associate professor of Economics at Louisiana State University. I have also served as Economic Advisor to the Director of the Bureau of Competition at the Federal Trade Commission, and Senior Economic Advisor to the Director of the Canadian Competition Bureau, the primary antitrust agency in Canada. In addition, I direct the Penn State Electricity Markets Initiative (EMI), a research consortium focusing on electricity economics funded by several companies active in the business of electricity in the state. I note that the opinions I express here today are solely my own, and not those of the Electricity Markets Initiative, any of the EMI's financial sponsors, or of the Pennsylvania State University. The research discussed here in Section III of my remarks on residential retail electricity shopping in PPL's territory was funded by the EMI.

I greatly appreciate the chance to speak here today. I congratulate the Commission on this effort to enhance Pennsylvania's retail electricity markets. I would like to address three topics in my presentation. First, I would like to discuss the reasons why robust retail electricity competition benefits consumers. Second, I would like to report on the conclusions of research

my colleagues at Penn State and I have conducted on residential retail competition in the PPL service territory. Finally, I would like to offer some ideas about the Pennsylvania electricity retail choice model, as well as retail models in other states.

II. Why Retail Competition?

In our economy, most goods are directed by the free market. In this market, producers make decisions on what they are going to produce, and what they are going to charge for those products. Consumers decide which among these products is best for them, and how much of each product to purchase. This system has served our country very well.

In some circumstances, however, the free market is not the best way to supply goods and services. The relevant circumstances here are what economists refer to as “natural monopolies,” where one firm can supply the relevant market at a lower cost of production than two or more firms. As electricity was deemed approximately 100 years ago to be such a natural monopoly, state public utility commissions regulated the market at all levels, including generation, distribution, transmission, and retailing.

In the 1990s, the Pennsylvania Public Utility Commission (“PA PUC”), along with commissions in numerous other states, chose to “restructure” electricity generation regulation. Restructuring was prompted in part by inherent flaws in Commission regulation across the country that had imposed billions of dollars of stranded cost overruns on ratepayers.

Thus, Pennsylvania restructured by opening electricity generation to market forces while continuing rate of return regulation for the distribution and transmission of power. The restructuring of generation has been a clear success, creating robust retail markets for industrial and commercial ratepayers and now in some jurisdictions in the State for residential customers,

leading to clear choices in how these customers can purchase electricity. These customers can benefit from the free market's innovations and incentives for reducing prices.

Retail markets for residential consumers in Pennsylvania, however, have a decidedly mixed record. Post rate cap expiration, some jurisdictions such as PPL and PECO's, have experienced substantial residential shopping with numerous suppliers competing to serve those customers, whereas other jurisdictions have few residential suppliers and limited shopping.

Successful residential retail markets are important for several reasons. First, there is no rationale to believe that "one-size" fits all. Each consumer has their own preferences over price, product attributes, and risk characteristics. An effective open market for residential power will allow consumers to tailor products to meet their own unique circumstances. In this sense, the retail market for electricity is no different than the retail market for tens of thousands of other products in our free market economy.

Third, while the wholesale price of electricity (and the underlying opportunity cost) vary during the day and year, under regulation most residential consumers pay the same fixed cost of power. This can lead to too much consumption during some periods of time, too little during other periods of time. Eventually, we may wish for most consumers to move toward time of day pricing. Such a move will be necessary if, for example, electric cars gain a large market.

Research designed to augment this process has now begun under the \$161 million federal Greater Philadelphia Innovation Cluster (GPIC) grant to Penn State and several other universities. Along with many of my Penn State colleagues, I am one of the senior investigators on the GPIC grant.

Finally, we do not know what new technologies will become available to improve the electricity product. We do know, however that a free and open market will move more quickly in adopting those technologies than would a traditional regulated approach.

III. Results of Study of Retail Behavior in PPL Territory

In January 2010 rate caps expired in PPL's territory effectively opening the area to retail competition. Residential consumers could save approximately 10 percent on their generation bills if they switched to one of over a dozen competitive suppliers. Substantial advertising and consumer education occurred, not only by the competitive suppliers, but also by PPL and this commission.

My Penn State colleagues and I have studied this 2010 event extensively. We gathered data from PPL on which customers switched to competitive suppliers, their zip codes, and how much electricity they used. We gained permission to use this data from the Commission, for which we are deeply appreciative. We also used census data at the zip code level in our analysis. I note that the results I present today are only preliminary.

We studied what factors led consumers in PPL territory to switch to competitive suppliers. We found that the larger the electricity consumption of the consumer the more likely they were to switch. This is not surprising. Switching entails savings, and greater savings provide a stronger motive to switch.

We also found that the higher a rate payer's consumption in December and January (independent of total consumption), the more likely they were to switch. What appears to be happening is that consumers who use electric heating, faced higher bills shorter before and after rate cap expiration, and thus found switching more beneficial.

Contrary to some expectations, we did not find strong evidence that lower income consumers were less likely to switch. (I note here that our results are based on zip code data, not data on income of individual ratepayers.) We did, however, find that consumers in higher income zip codes were more likely to switch. But we also found that consumers in zip codes with higher levels of poverty were more likely to switch to competitive suppliers. The net effect therefore is mixed.

There remains, however, a serious puzzle in the data. Despite an available 10 percent discount (worth approximately \$100 per year for the average residential consumer), almost two-thirds of PPL's residential consumers chose not to switch to a competitive supplier.

IV. Different Retail Models for Residential Consumers

In simplified terms, the Pennsylvania retail competition plan for residential consumers is set up as follows: Prior to the relevant supply period, the default service provider procures power in the wholesale market to provide default generation supply over that period. Competitive retail generation providers, who usually purchase power close to the relevant supply period, compete against the default service provider.

The Pennsylvania approach has been successful, with a majority of commercial and industrial load and over a million residential customers switching to competitive retail generation providers. The potential for future competitive gains under Pennsylvania's current approach, however, may be limited.

Pennsylvania's current approach for residential customers may create viable competition only when the price of electricity is falling during the relevant period. In the latter half of 2009, the price of natural gas (the marginal fuel much of the time in Pennsylvania) was declining,

which enabled competitive retail generation providers, who bought their power after the default provider did, to offer power at a rate 10 percent less than the default supplier in PPL.

On the other hand, in Allegheny's territory, where I live, due to limited declines in the price of power over the default acquisition period, the available discount is only about 3 percent. Given this, it is not surprising that Alleghany has very limited residential shopping, though of course other factors may also help cause this low switching rate. Thus, under the Pennsylvania structure, in times of declining prices, competitive retail generation providers will be able to offer a competitive product until the default supply rate is reset or prices start to rise. In a period of rising prices, however, competitive retail generation providers who do not lock in supply (regardless of whether they own generation or not) until they obtain a group of customers, will be unable to compete. This boom-bust cycle undermines sustainable market success and makes it difficult for retailers to commit long term to the market. In the last few years we have been in a declining price environment and consequently a period where robust competition in most customer classes exists. Once the price curve reverses, however, it will be difficult for retail providers to successfully offer competitive products. This regulatory challenge could potentially be reduced by establishing a default supply procurement process that is more reflective of shorter term market prices, which would serve to avoid the harmful boom and bust cycle.

As the Commission considers various approaches to establishing a sustainable retail choice structure, I suggest you investigate various approaches that have been tried in different jurisdictions. I would urge the Commission to make as broad an examination of these practices that it can. Today, however, I would like to speak of two different market models that could be investigated further.

The first is that used in the ERCOT portion of Texas. In ERCOT, the default price (though not supply) of power was in effect gradually eliminated, resulting in shopping for the majority of customers of all classes. (A short run competitively priced supplier of last resort is also available to some ERCOT consumers.) Furthermore many suppliers compete to serve those customers.

The ERCOT approach has been criticized, however, because it exposed customers to high electricity prices, as it went into effect during a period of rising natural gas prices. From an economic point of view, the goal is to establish an approach in which customers pay the opportunity cost of the product they consume. If the wholesale price of power rises, then textbook economics suggests that residential customers should pay higher prices, just as they do for other products when the wholesale price of those products rise.

I recognize that such a textbook argument is likely to find limited favor in this forum. This may nonetheless be an opportune time to explore increasing consumers' exposure to shorter term market-based price signals. One contributing reason is Pennsylvania's increased production of low-priced natural gas from the Marcellus Shale. Indeed, the price of natural gas in Pennsylvania is no longer highly correlated with the world price of oil. Since the price of electricity in Pennsylvania is largely determined by the price of natural gas, it may be that the potential for price fluctuations will be limited in the near future.

The second approach I suggest the Commission examine is municipal or government aggregation, where a local community acts as a purchasing agent for its residents. This approach has had some success in Ohio. In theory, a community using municipal aggregation could overcome the apparent mass market customer inertia to offer its residents savings. Further, the

size of the community may make available to its residents volume discounts. (Of course, community residents in such circumstances should always have an “opt-out” provision.)

I recognize that the Commission has raised serious concerns about municipal aggregation. Yet the evidence appears clear that at least in Ohio municipal aggregation has gained savings for residential customers over the default rate they otherwise would have paid. It may therefore be worth investigating further to understand the costs and benefits to consumers from such a program.

V. Conclusion

Retail competition in electric power for residential consumers has the ability to provide access to the lowest available prices and increase innovation in this important sector. So far, however, Pennsylvania has made partial progress in this area. The research conducted by myself and my Penn State colleagues indicates that a number of factors affect consumers’ shopping decisions. Contrary to what some might suggest, however, there is no evidence that retail competition is biased against low-income customers.

I believe that the Pennsylvania retail model has achieved important success. I hope that this hearing offers an opportunity to create a sustainable market structure that will benefit customers and drive the efficient use of electricity and natural gas. Thus, I urge the Commission to examine a variety of other approaches, such as what has been done in ERCOT and the municipal aggregation method used in Ohio. Finally, I commend the Commission for this initiative and I suggest that you review a variety of approaches used in the other jurisdictions to better understand the issues, challenges, costs and benefits of different market structures. Thank

you very much for the opportunity to speak today. I look forward to answering any questions you might have for me.