

**Before the Pennsylvania Public Utility Commission
En Banc Third Public Hearing
Current and Future Wholesale Electricity Markets**

**Testimony of
William L. Massey
On behalf of the COMPETE Coalition**

December 18, 2008

My name is William Massey. I am a partner with the law firm of Covington & Burling LLP in Washington, D.C. Prior to joining Covington, I was a member of the Federal Energy Regulatory Commission from 1993 to 2003, appointed twice by President Bill Clinton.

My testimony is on behalf of the COMPETE Coalition. COMPETE appreciates this opportunity to present its views to the Commission regarding wholesale electricity markets. COMPETE represents 272 electricity stakeholders, employing more than 7 million American workers. Our members include customers, suppliers, generators, transmission owners, trade associations, and economic development corporations – all of whom strongly believe that competitive wholesale and retail electricity markets are the best means of meeting America's energy and environmental challenges. Well-functioning competitive electricity markets have a proven track record of helping to solve our energy and climate change challenges today by providing environmental benefits and innovative products and services at the lowest available cost. Plus, competitive markets achieve these benefits without saddling the risk of unwise investment decisions on the backs of captive consumers, as occurs under monopoly regulation. A list of COMPETE members is provided in Appendix A of this testimony.

As a former federal regulator, I will make the following points in my testimony:

- Organized competitive wholesale electricity markets, like PJM, are the best means of addressing significant energy challenges facing the nation and Pennsylvania.
- Competitive wholesale electricity markets have long received, and continue to receive, strong bipartisan support from the FERC commissioners as the right energy policy for the nation.
- Competitive wholesale markets have support from commercial and industrial customers in Pennsylvania and across the nation.
- Making incremental improvements to organized wholesale electricity markets is the best public policy. Significant changes that undercut key market design features would have adverse consequences.

Key features of organized competitive wholesale electricity markets

Before turning to the main points of my testimony, I would like very briefly to describe the key features of organized markets such as PJM that I believe, as a former regulator that spent many years considering various options, make them successful.

- The single price auctions used in the markets exert downward pressure on prices and ensure that the lowest available cost resources are used.
- The day-ahead and real time spot energy markets provide valuable locational price signals that allow market participants to manage resources and lower costs.
- Independent administration of both the markets and grid operations by entities like the PJM Interconnection ensures a level playing field and provides the market confidence needed to attract investment and a diverse mix of market participants.
- Independent monitoring and oversight, such as that provided for PJM by Monitoring Analytics (Joseph E. Bowring), assure adherence to market rules and guard against the possibility of improper activities by market participants.
- A large regional scope assures the largest number of competitors and the widest array of resources, thus assuring the lowest available costs and high reliability through centrally coordinated transmission planning and operation.

Addressing significant energy challenges

The electricity industry faces a number of very substantial challenges that must be met to provide the reliable supply of electricity that is critical to the economic well-being and security of the nation and Pennsylvania. It is my view that competitive electricity markets are the best way of addressing the following challenges.

New infrastructure

A \$1.5 trillion investment is estimated to be needed over the next twenty years to replace and modernize the nation's electricity production, transmission and distribution infrastructure. This figure rises to over \$2 trillion if the costs of limiting carbon emissions are taken into account.¹

Competitive markets offer the best opportunity for these capital-intensive, long-lived investments to be made with investors rather than customers assuming the bulk of the risk. The transparent prices of electricity that vary by location, such as those provided through PJM's Locational Marginal Pricing ("LMP") mechanism, signal when and where facilities are needed. The incentives provided by the PJM markets attract the right type of efficiency, transmission,

¹ The Brattle Group, *Transforming America's Power Industry: The Investment Challenge 2010-2030*, prepared for the Edison Foundation, November 2008, at xiv, Table 1

generation or demand response investment. Competitive wholesale markets have proven so attractive to generation developers, in particular wind power, that there is a tremendous backlog of facilities seeking interconnection with the regional power grids.

The capacity markets in PJM and other RTOs are successfully attracting new resources. In its most recent 10-year reliability outlook, NERC observed that the marked improvement in resource adequacy in New England “is directly due to newly operational mechanisms designed to add greater long-term planning visibility. Dubbed ‘forward capacity markets,’ these and similar mechanisms are being implemented in some parts of North America.”²

PJM’s Reliability Pricing Model (RPM) capacity market is another excellent example of how organized markets attract investment. The capacity markets that were in place prior to RPM were not assuring an adequate supply of electricity. In 2005, PJM foresaw shortages and widespread blackouts if nothing was done. Since the adoption of RPM, five auctions have resulted in 9,986 MW of new resources, including a base load coal plant, over 800 MW of renewable resources and over 2,000 MW of new demand response resources. As highlighted in the Brattle Group independent analysis of RPM’s performance, “The addition of the merchant coal plant is significant because it indicates that the RPM design may also be significant in supporting the entry of competitive baseload generating capacity.”³ Further, under RPM “total load response in the capacity market has increased by over 3,500 MW, which is the equivalent of displacing the need to install 3 to 4 base-load generation plants.”⁴ And, despite the recent increases in resource costs, the capacity price resulting from the most recent auction (for the 2011/2012 delivery year) is comparable to the capacity price in 2001.⁵

I would also note PJM’s regional transmission expansion process is well-suited to meet our transmission infrastructure needs. Nationally, \$298 billion in new transmission investment is needed over the next twenty years.⁶ PJM’s capability to identify problems in the regional grid, develop the most effective and efficient regional solution, and attract the investment needed to get the job done is the kind of approach needed if we are to meet our daunting infrastructure challenges. Since the inception of the regional process, PJM has authorized nearly \$13.3 billion in transmission investment.⁷ And the regional, instead of company-specific, approach to transmission planning saves about \$390 million annually.⁸

² NERC, *2008 Long-Term Reliability Assessment 2008 - 2017*, at 9.

³ The Brattle Group, *Review of PJM’s Reliability Pricing Model*, June 30, 2008 at 27.

⁴ Testimony of Andrew Ott, *En Banc* Hearing, Pennsylvania Public Utility Commission, October 23, 2008 at 9.

⁵ Testimony of Andrew Ott, *op cit.* at 8.

⁶ The Brattle Group, *Transforming America’s Power Industry*, *op cit.*

⁷ *PJM Board Authorizes \$1.6 Billion in Transmission Additions, Upgrades*, PJM press release, December 4, 2008.

⁸ *PJM Efficiencies Offer Regional Savings*

<http://www.pjm.com/~media/documents/presentations/pjm-value-proposition.ashx>

As a former regulator, I commend the Pennsylvania Public Utility Commission for its recent approval of the portion of the TrAILCo line that will traverse Pennsylvania.⁹ This line is an example of the kind of regional approach to infrastructure that will be needed. I especially commend the Commission for recognizing its obligation to enhance regional reliability and mitigate transmission constraints in order to reduce congestion for ratepayers in Pennsylvania and adjacent jurisdictions.

Greenhouse gas emission reduction

A significant reduction in greenhouse gas emissions from electricity generating plants will be proposed in the new Congress as part of climate change legislation. To reach emission reduction goals, a market-based cap-and-trade program for emissions credits is likely to be adopted. For a number of reasons, this program will function most efficiently with competitive electricity markets as a foundation.

First, competitive electricity markets will provide the accurate, transparent price signals needed in the emissions markets. A cap-and-trade system will work most efficiently if the supply and demand of both electricity and carbon emissions are determined by good price signals. This is especially true for electricity because it accounts for such a large share of carbon emissions. In competitive electricity markets, such as PJM, prices reflect supply conditions at the time consumption decisions are made, and those prices reflect the cost of the next increment of production. Prices therefore accurately reflect the true cost of resources used and will help determine an efficient price for carbon, once there is a market for it.

Second, clear and transparent prices enable environmentally friendly demand response, conservation, innovation and efficiency efforts by consumers, which lower emissions.

Third, the market's neutral rules and regional scope attract demand response providers and wind generation resources. Demand response providers are enabled to compete on a level playing field with other resources. Demand response, which is essentially dispatchable conservation, helps lower costs by driving greater efficiencies, and thrives in organized regional markets. Recently, FERC Commissioner Jon Wellinghoff noted that third parties who manage demand resource programs have had more ability to deploy their programs in organized markets because those markets allow for more participants to compete to serve load. He also observed that demand response resources are more prevalent in competitive markets than in areas that have vertically integrated utilities.¹⁰

⁹ *Re: PA PUC, et al. vs. Trans-Allegheny Interstate Line Company*, Motion of Chairman Cawley, November 13, 2008.

¹⁰ "Wellinghoff Touts Demand Response Benefits of Organized Markets," *Energy Washington Week*, October 1, 2008.

Demand resources in the organized markets have displaced the need for more than 23,000 megawatts of generation.¹¹ In PJM, demand resources have increased six-fold since 2002.¹² By forestalling the cost of building additional generating facilities, the demand response that is providing capacity in the PJM footprint saves about \$275 million per year.¹³ In energy costs, demand response saved PJM customers more than \$650 million in just one record setting week in August 2006.¹⁴

Demand response resources do more than save money and conserve electricity. They are also important to maintaining reliability. NERC recently found that demand response resources “are providing critical reliability services, increasing the operational flexibility of the grid and complementing the addition of new variable generation resources such as wind and solar energy.”¹⁵ Therefore, the tremendous growth in consumer demand response in RTOs contributes to improved reliability.

With respect to wind, more than 70% of installed wind capacity is now located in regions with organized competitive electricity markets, despite the fact that these areas represent only 44% of U.S. wind energy potential, and competitive wholesale electricity markets¹⁶ and investment by competitive electricity suppliers are responsible for over 85% of new wind capacity.¹⁷ According to Citizens for Pennsylvania’s Future, the PJM market is an “incredible asset to wind development” in Pennsylvania and PJM and “will create a virtuous cycle of increased grid capacity, energy resource diversity, and environmental improvement.”¹⁸ Before

¹¹ ISO/RTO Council, *Harnessing the Power of Demand*, October 16, 2007 at ES-1. http://www.isorto.org/atf/cf/%7B5B4E85C6-7EAC-40A0-8DC3-003829518EBD%7D/IRC_DR_Report_101607.pdf

¹² PJM Market Monitoring Unit, “Assessment of PJM Load Response Programs”, Report to the FERC, Docket No. ER02-1326-006, August 29, 2006, Table 4. <http://www.pjm.com/markets/market-monitor/downloads/mmu-reports/dsr-report-2005-august-29-%202006.pdf>

¹³ *PJM Efficiencies Offer Regional Savings*

¹⁴ PJM News Release, “Early August Demand Response Produces \$650 Million Savings In PJM,” August 17, 2006. <http://www.pjm.com/contributions/news-releases/2006/20060817-demand-response-savings.pdf>

¹⁵ *Ten Year Outlook for Electric Reliability Highlights Environmental Initiatives, Transmission among Key Concerns*, NERC press release, October 23, 2008.

¹⁶ Letter from American Wind Energy Association, et al. to FERC Chairman Kelliher, February 26, 2007.

¹⁷ Electric Power Supply Association, *Power Facts -AWEA Report Shows Wind Energy Still on Record Pace with Competition Leading the Way*, October 28, 2008. <http://www.epsa.org/forms/documents/DocumentFormPublic/view?id=DC350000002F>

¹⁸ Citizens for Pennsylvania’s Future, “Competitive PJM Market Boosts Wind, Solar and Renewable Energy,” September 2008.

http://www.pennfuture.org/media_e3_detail.aspx?MediaID=938
(continued...)

competition there was no wind generation in Pennsylvania. Now there are ten projects with almost 300 MW of capacity, and projects totaling over 270 MW are in development.¹⁹

Finally, competitive regional electricity markets have a proven track record of improving operating efficiency and attracting cleaner, more efficient generation.²⁰ This allows producers to do more with less, with new investment more likely to involve environmentally friendly low-carbon technologies and outcomes.

Cost containment

The cost of these capital-intensive infrastructure initiatives will challenge our nation's, and Pennsylvania's, competitiveness in the global economy. Innovation and cost containment are critically important.

The market incentives and regional scope of competitive wholesale markets such as PJM will do a superior job of keeping costs down because they spur innovation and foster efficiency. Competitive markets, where risk is borne by investors rather than consumers, have improved operating efficiency and availability of generators. This results in lower costs. For example, PJM's energy market prices, when adjusted for fuel costs, are 23% lower than they were ten years ago.²¹ In the New York ISO, fuel adjusted wholesale electricity costs have decreased at least 11% since 2000, amounting to annual cost reductions of approximately \$1.2 billion on today's dollars.²² And additional cost savings from truly breakthrough innovations are on the way. For example, PJM recently accepted the first grid-scale battery storage system to provide regulation service. This is the first commercial acceptance of an advanced Lithium-Titanate

¹⁹ American Wind Energy Association, <http://www.awea.org/projects/projects.aspx?s=Pennsylvania>

²⁰ The NorthBridge Group, *Embrace Electric Competition or It's Déjà Vu All Over Again*, October 2008 at 44-53; National Economic Research Associates, *Competitive Electricity Markets: The Benefits for Customers and the Environment*, February 2008 at 14-16; Global Energy Decisions, *Putting Competition Power Markets to the Test - The Benefits of Competition in America's Electric Grid: Cost-Savings and Operating Efficiencies*, at ES-1, (2005); Howard J. Axelrod, "The Fallacy of High Prices," 144 *Public Utilities Fortnightly* at 55 (Nov. 2006); Kira R. Fabrizio et. al., "Do Markets Reduce Costs? Assessing the Impact of Regulatory Restructuring on US Electric Generation Efficiency," *American Economic Review*, September, 2007.

²¹ Ott, *op cit.*, at 5.

²² New York ISO New Release, *NYISO: Power Prices Drop as Fuel Costs Fall*, December 11, 2008, http://www.nyiso.com/public/webdocs/newsroom/press_releases/2008/NYISO_Power_Prices_Drop_as_Fuel_Costs_Fall_12112008.pdf

battery to provide grid services.²³ PJM also has a flywheel energy storage project in its interconnection queue.

The organized markets also offer the best tools for customers to manage electricity costs. For example, transparent price signals and demand response programs allow customers to shift usage times and aggregate their demand in order to lower costs and even get paid for providing demand-response resources to the market. This is one reason many customers favor the organized competitive markets. According to a representative of energy intensive industrial customers, PJM's load response programs are the "most direct vehicle by which ... customers can achieve the Commission's mitigation goals by reducing or shifting loads from periods when demand and prices for electricity are high to periods when demand and prices are low, thereby having a decisive effect on reducing overall wholesale energy costs both to the reducer as well as other consumers."²⁴

In addition, the large geographic scope of the organized regional markets increases the number of generation choices for a least-cost dispatch of power sources. PJM's centralized dispatch of resources over its large region results in annual savings of between \$340 million to \$445 million.²⁵

Reducing dependence on foreign energy sources

The electric power industry must work with policymakers to reduce our nation's dependence on foreign sources of energy and continue to develop domestically produced low-carbon and renewable sources of energy.

The improved efficiency spurred by market forces allows us to use existing resources more wisely, thereby decreasing fossil fuel use and helping to limit emissions. Renewable energy, conservation, efficiency and demand response technologies are easier to implement in organized competitive electricity markets. These domestic low-carbon resources reduce energy imports and create jobs. And plug-in hybrid electric vehicles are facilitated by competitive electricity markets, which offer state-of-the-art communication and control tools and create the potential for these vehicles to serve as a resource to the grid. Electrification of the transportation sector substitutes clean domestically produced electricity for oil, helping to reduce our dependence on foreign energy sources while reducing greenhouse gas emissions. Most importantly, organized competitive markets provide an attractive and efficient platform for such innovations.

²³ Penton Insight, "PJM Accepts First Grid-Scale, Battery Energy Storage System," December 1, 2008.

²⁴ Statement of Pamela C. Polacek on behalf of the Industrial Energy Consumers of Pennsylvania and the Industrial Customer Groups, *En Banc* Public Hearing on "Alternative Energy, Energy Conservation and Efficiency, and Demand Side Response, Pennsylvania Public Utility Commission, November 19, 2008 at 2.

²⁵ *PJM Efficiencies Offer Regional Savings*

Bipartisan support at FERC

I am a Democrat, but support for competitive electricity markets is bipartisan. For more than 15 years now, the commissioners at the Federal Energy Regulatory Commission have recognized the substantial benefits of competitive wholesale markets and, on a bipartisan basis, have adopted policies to support and promote them. These efforts began with the initiation of market-based pricing in the early 1990s and have included open transmission access requirements in 1996, the promotion of RTOs in 2000, and the implementation of the RTO market design features, such as locational pricing, single price auctions and market monitoring. All of those actions were robustly debated on full records composed of many hundreds of comments, and all actions were supported by both Democrat and the Republican commissioners.

That bipartisan support for competitive markets continues with the currently serving FERC commissioners. At a July 2008 FERC technical conference on the status of wholesale markets, Chairman Joseph Kelliher said that “competition policy is best suited to address the hard realities we are confronting today” and that “I have been impressed with the steady progress made in the organized markets.”²⁶ Commissioner Sudeen Kelly observed that the regional wholesale power markets are “a real success story.”²⁷ Commissioner Philip Moeller stated that “any...decrease in competition will lead to higher costs” and “competitive markets deliver to customers in a way that non-competitive markets do not.”²⁸ And in November 2007, Commissioner Jon Wellinghoff said he was no longer agnostic about competitive electricity markets and that they “are the only way to provide consumers with the opportunity for just and reasonable prices, and the lowest total bills.”²⁹

The bipartisan support for competitive markets is likely to continue under President Obama. Chairman Kelliher recently stated that major changes to the competition policies already in place should not be expected. He noted that “every U.S. president since Carter has either embraced or accepted competition policy as the heart of gas and power markets” and that President-elect Obama sees competition as “settled national policy.”³⁰

FERC’s ongoing bipartisan support for competitive wholesale markets was evident in Order No. 719, the October 2008 final rule on wholesale competition in organized electric markets.³¹ After conducting a proceeding that lasted a year and a half, that included over 91

²⁶ *Review of Wholesale Electric Markets*, Docket No. AD08-9, Technical Conference July 1, 2008, Tr. at 3.

²⁷ *Id.* at 92.

²⁸ *Id.* at 5

²⁹ “Wellinghoff Comes Out Strongly for Market Competition,” *Electric Power Daily*, November 7, 2007 at 1.

³⁰ *Inside FERC*, November 17, 2008 at 2.

³¹ Order No. 719, 125 FERC ¶ 61,071 (Docket No. RM07-19).

parties, many of whom were coalitions or organizations representing numerous entities, holding three technical conferences, issuing an advanced proposed rule as well as a proposed rule of reforms, and amassing a record of thousands of pages, FERC decided to fine tune the markets with incremental improvements. These improvements involved encouraging more demand response and allowing limited scarcity pricing during shortages, encouraging long-term power contracting by requiring offers and bids for such contracts on bulletin boards on RTO web sites, reforming some aspects of market monitoring, and increasing the responsiveness of RTOs to customers and other stakeholders. In the final rule, the Commission did not seek to fundamentally redesign organized markets. The reforms were intended to be incremental improvements without upsetting “the significant efforts that have already been made in providing demonstrable benefits to wholesale customers.”³²

I would like to briefly address two aspects of FERC’s Order No. 719. The first regards long-term contracting. Some critics of organized competitive markets complain that long-term contracts are not available. FERC found that there is no fundamental problem with long term contracting and observed that buyer interest in long-term contracting fluctuates depending on whether generation is in short or long supply. Interest has increased recently but buyers are still able to enter long-term contracts. Prices for such contracts may be higher than in the past, but FERC found that the increase is the result of market factors, such as changes in fuel prices and shifting supply and demand.³³

The second aspect of FERC’s decision regards alternative approaches to some market design features. Proposals to modify the design of organized markets were made by the American Forest & Paper Association and Portland Cement. In May of this year, FERC held a technical conference to investigate those proposals and is still reviewing the information from the conference.³⁴ I would note, however, that during the entire one and a half years of FERC’s comprehensive proceeding, the American Public Power Association (APPA), who testified at this Commission’s November hearing, chose not to submit any alternative proposal.

Again, the upshot of FERC’s long proceeding is that the fundamental design features of the organized markets were left intact. FERC’s decision in this important rule demonstrated that the commissioners, both Democrat and Republican, remain convinced that competition is good public policy for the nation, and that PJM and the other organized markets are accomplishing that policy goal. FERC has held a number of proceedings addressing wholesale market design and specific elements of PJM’s markets over the last several years. Appendix B to my testimony presents an illustrative list of FERC dockets addressing market design or performance of organized markets in general and of PJM’s markets in particular. It is clear that FERC thoroughly assesses the structure and performance of these wholesale markets.

³² Order No. 719 at P 2.

³³ Order No. 719 at P 281.

³⁴ Order No. 719 at P 308.

On a personal note, as a FERC Commissioner, I was very supportive of competition in wholesale markets, including the organized markets such as PJM, and championed the RTO policies enacted during my tenure. I believe markets are good for both customers and investors. The Western electricity crisis, which occurred during my tenure at FERC, turned some observers against competitive markets. This crisis was caused largely by a poorly structured and primitive market design, and although painful at the time, provided valuable lessons about market design, monitoring and mitigation authority. Those lessons have been incorporated into the designs and rules of today's organized markets to prevent another such market failure.

Broad customer support

I understand that some customers are not happy with the competitive wholesale markets. These markets do, however, enjoy broad customer support. For many customers, competitive wholesale markets such as PJM bring substantial benefits. Among them are accurate and transparent pricing that provides a basis for demand response programs, rules that allow direct customer participation in markets and a basis for demand response provider to compete with traditional suppliers, a region-wide choice of suppliers, direct access to renewable resources, and assurance of a reliable supply of electricity into the future. These and other factors allow customers to better manage their energy supply and usage decisions and lower their costs.

That competitive wholesale markets enjoy customer support is borne out by the customers themselves. More than one-third of COMPETE's member are electricity customers. Here in Pennsylvania, as you may recall, a group of twelve major businesses collectively representing 1,387 facilities and employing more than 97,000 workers in Pennsylvania recently wrote to Governor Rendel that electric competition "results in improved products and services at competitive prices." This group of large electricity consumers also said that regional competitive wholesale markets for electricity with independent oversight such as PJM, "provide access to generation at the lowest available cost," promote reliability, and "provide prices signals that promote sound investment decisions."³⁵ In fact, two of those customers, Leggett & Platt, a Fortune 500 diversified manufacturer, and Wal-Mart, the nation's largest retailer, are here with me today to express their support for competitive wholesale markets.

Appendix C to my testimony provides examples of what customers and other market participants are saying about the benefits of competitive electricity markets.

³⁵ Letter to Governor Rendell by representatives of 7-Eleven, Inc., Best Buy Co., Inc., ACME Markets, Big Lots Stores, Inc., J.C. Penney, Wal-Mart Stores, Inc., Einstein and Noah Corporation, Leggett & Platt, Inc., Macy's Inc., PetSmart, Inc., Safeway Inc./Genuardi's, and Yum! Brands Inc., October 20, 2008.

Incremental improvements

The organized regional markets are human-designed institutions, and, like most such institutions, can always be improved. But significant changes that would undercut their fundamental market design features would be very bad public policy. PJM, for example, is now maturing as a market and is producing benefits for its entire region, including Pennsylvania. Overall, PJM's RTO operations produce as much as \$2.3 billion dollars in annual savings.³⁶ As stated above, PJM's capacity market is guaranteeing a reliable supply of electricity at prices that are comparable to those of 2001 and its energy market prices (when adjusted for fuel costs) are 23% lower than they were 10 years ago. In addition, the price mark-ups over costs -- the most direct evidence of competitiveness -- are generally low and prices are set by generators operating at or close to their marginal costs.³⁷ This is how the markets are supposed to work.

Substantial changes to PJM's fundamental market design features would introduce a large degree of regulatory uncertainty and seriously jeopardize these benefits. Generation plants are extremely expensive, long-lived assets that require many years to recover the costs of investment. To risk investing, suppliers require stable, transparent, predictable market rules. If big changes in PJM's rules were being considered, investors would be very reluctant to supply the much capital for much needed infrastructure and reliability would suffer.

A far better approach would be to make incremental improvements directed at specific problems. This is the approach the FERC has decided is the best policy for the organized markets. Moreover, all of the organized markets have vibrant stakeholder processes that identify problems and develop ways to address them. For example, PJM formed its Capacity Market Evolution Committee to discuss ways to improve certain features of the RPM capacity market. In fact, a settlement conference on proposed revisions to RPM occurred earlier this week.

Based on my experience, PJM is a tested, proven institution that brings substantial benefits to its customers. Substantially changing its rules would carry tremendous downside potential. Given the challenges of historic proportions that are now facing the industry nationally and in Pennsylvania, now is not the time to undercut the structure of the market and chill necessary investment in demand response, renewables and infrastructure enhancements. Continuing to fine tune the proven model is clearly the best public policy.

³⁶ PJM, *PJM Efficiencies Offer Regional Savings*

³⁷ Testimony of Joseph E. Bowering, Independent Market Monitor for PJM, *Public Hearing on the Current and Future Wholesale Electricity Markets*, Pennsylvania Public Utility Commission, October 23, 2008 at 11.

APPENDIX A



COMPETE

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Competitive Power Ventures, Inc.
Comverge, Inc.
ConectiSys Corporation
Conergy
ConocoPhillips Company
Consolidated Edison Energy
Constellation Energy
ConsumerPowerline
Cornell University
Corpus Christi Housing Authority
Costco Wholesale
Covidien
Crescent Real Estate Equities

America: Powered by Competition

The Cruthirds Report
 CSI International, Inc.
 Current Group, LLC
 Cushman & Wakefield
 Customized Energy Solutions Ltd.
 CVS/pharmacy
 The Danella Companies, Inc.
 David B. Zabetakis, LLC
 DC Energy
 Direct Energy
 Distributed Energy Financial Group, LLC
 Dollar General
 Dollar Tree Stores, Inc.
 Douglass & Liddell
 DPL Energy
 Duquesne Light Energy, LLC
 Dynalectric
 EC Power
 Economic Development Corp., Fresno
 County
 Economic Growth through Competitive
 Energy Markets Coalition
 Edge Inspection Group, Inc.
 Einstein Noah Restaurant Group
 El Pollo Loco
 Electric Power Generation Association
 Electric Power Supply Association
 Empower Energy Solutions Corp.
 Endeum
 EnergyConnect, Inc.
 Energy Curtailment Specialists
 Energy Markets Coalition
 EnergyNext, Inc.
 Energy Photovoltaics, Inc.
 EnergyRebate, Inc.
 Energy Services Group, Inc.
 Energy Systems of America Inc.
 Energy Trust, LLC
 Enermetrix
 EnerNOC
 Enerwise Global Technologies, Inc.
 Engineerworx
 Enmass, Inc.
 ePsolutions
 Eurus Energy America
 Exelon Corporation
 Fellon-McCord & Associates
 FTI Consulting
 GAP Pollution & Environmental
 Control Inc.
 Gearhart McKee Inc.
 Gestalt LLC
 Glacial Energy
 Goldman Sachs
 Golub Corporation-Price Chopper
 Grocery Chain
 GoGreenSolar.com
 The Great Atlantic & Pacific Tea
 Company, Inc.
 GreenSun Energy Solutions
 Hanson Building Materials America
 Henkels & McCoy, Inc.
 Hess Corporation
 Hillsdale Policy Group
 Hines – Southwest Region
 Hollywood Entertainment
 Howard University
 HQ Energy Services (US)
 Illinois Energy Association
 Illinois Energy Professionals Association
 iMonitorEnergy
 Independent Power Producers of
 New York
 Infrasource Inc.
 Indeck Energy Services, Inc.
 InStep Software
 InterGen North America
 Intermountain Wind, LLC
 International Finance, LLC
 Itron, Inc.- Enterprise Energy
 Management Group
 Jay Packaging Group
 J.C. Penney Corporation, Inc.
 Johnson Controls, Inc.
 KEMA, Inc.
 Kenny Construction Company
 Keres Consulting, Inc.
 Kimball Resources, Inc.
 Kirby Electric, Inc.
 Kohl's Department Stores
 Kraft Foods
 Leggett & Platt, Inc.
 Lewis-Goetz & Co., Inc.
 Liberty Power
 Linens 'N Things
 Little's Dental Lab

Lodestar Corporation
 Lowe's Home Centers, Inc. /
 Lowe's HIW, Inc.
 LS Power Development, LLC
 Lumen Group, Inc.
 Macy's Inc.
 Manufacturing Alliance of Connecticut
 Martin Linskey Communications
 Meade Electric Company, Inc.
 Midwest Strategy Group, LLC
 The Miriam Hospital
 Mistras Holding Group
 Morgan Stanley
 Motive Power & Equipment Solutions,
 Inc.
 National Center for Policy Analysis
 National Electrical Manufacturers
 Association (NEMA)
 National Grid
 National Power Source
 Nationwide Energy Partners LTD
 Navigant Consulting, Inc. (NCI)
 NBC Universal
 New Era Cap Company
 New England Power Generators
 Association
 Ninyo & Moore
 North America Power Partners
 Nova Machine Products Inc.
 Obsidian LLC
 Olbrych Realty Inc.
 OurEnergy
 Pacific Technical Resources, Inc.
 Papa John's International
 Patriot Energy
 PCM, Inc.
 PETCO
 Petrochem Insulation, Inc.
 PetSmart, Inc.
 Polytop Corp.
 PowerGrid Systems, Inc.
 Power Management Company
 Power Management Company New
 England, LLC
 PPL Corporation
 Prenova, Inc.
 Priority Power Management
 Public Energy Solutions
 Public Service Enterprise Group
 QuikTrip Corporation
 R & L Development Company
 Ra-Energy
 RadioShack Corporation
 Rapid Power Management
 Realgy, LLC
 Recurrent Energy
 Red Robin Gourmet Burgers
 Reliant Energy
 Retail Energy Supply Association
 Retail Industry Leaders Association
 Rhode Island Resource Recovery
 Corporation
 Safeway Inc.
 St. George's School
 Satori Energy
 SaveOnEnergy.com
 SCD Energy Solutions
 School Project for Utility Rate Reduction
 Scott Specialty Gases
 SEM, LP (Solutions for Energy
 Management)
 Sempra Energy
 Seven-Utility Management
 Consultants, Ltd.
 Shell Trading Gas and Power Company
 Shoe Carnival, Inc.
 Sierra Energy Group
 Silicon Valley Leadership Group
 Site Controls, Inc.
 SMC Business Councils
 Solarpowergetics, Inc.
 Spark Energy
 Staffing One, Inc.
 Staples Inc.
 StarTex Power
 Strategic Energy Advisors, Inc.
 Strategic Energy, LLC
 Strategy Integration, LLC
 Sunbelt Sower/Direct Marketing
 Network
 Sunoco, Inc.
 Svanda Consulting
 System Source Inc.
 Systems West Computer Resources
 Target Corporation
 Telga Corporation

Texas Competitive Power Advocates
Texas Electric Professionals Association
Texas Energy Aggregation
Texas Energy Options, Inc.
Thomas Dodge Builders
Thorco, Inc.
TJX Companies
Tradition Energy
Traffic Control Services, LLC
TRC Companies Inc.
TXU Energy

U.S. Gas & Electric, Inc.
Usource
Wal-Mart Stores, Inc.
Warwick Public Schools
Western Power Trading Forum
Western Retail Energy
Westshare Services, Inc.
Wind Energy Corporation
WindPole
World Energy
Yuasa Battery, Inc.

APPENDIX B

Illustrative List of FERC Dockets Addressing Market Design or PJM Markets

Docket No	Title
RM95-8 & RM94-7	Promoting Wholesale Competition Through Open Access Non-Discriminatory Transmission Services by Public Utilities; Recovery of Stranded Costs by Public Utilities and Transmitting Utilities (Order 888)
RM99-2	Formation of Regional Transmission Organizations
RM01-12	Remedying Undue Discrimination Through Open Access Transmission Service and Standard Electricity Market Design
RT01-2	PJM Interconnection, L.L.C., <i>et al.</i> (RTO Status)
EL03-236	PJM Interconnection, L.L.C. (Reliability Compensation Policy)
PL04-2	Compensation for Generating Units Subject to Local Market Power Mitigation in Bid Based Markets
RM04-7	Market Based Rates for Wholesale Sales of Electric Energy, Capacity and Ancillary Services by Public Utilities
RM05-17 & RM05-25	Preventing Undue Discrimination and Preference in Transmission Service (Order 890)
ER05-1410 & EL05-148	PJM Interconnection, L.L.C. (Reliability Pricing Model)
RM06-8	Long Term Firm Transmission Rights in Organized Electricity Markets
AD07-8	Review of Market Monitoring Policies
RM07-19 & AD07-7	Wholesale Competition in Regions With Organized Electric Markets (Order 719)
AD08-9	Future State of Regional Wholesale Markets
EL08-34 & EL08-47	Maryland Public Service Commission v. PJM Interconnection, L.L.C. & PJM Interconnection, L.L.C. (Three Pivotal Supplier Test)

APPENDIX C

COMPETE

What People Are Saying About Electricity Competition

Competition Benefits Customers

"Competitive organized energy markets allow Safeway to save tens of millions of dollars each year. These are savings that can be reinvested in the price we charge for our goods and services as well as key corporate initiatives like our Greenhouse Gas Reduction and Sustainability Program – all of which benefit our customers, employees, investors and the communities we serve."

George Waidelich, Vice President, Energy Operations, Safeway (commercial food and drug retailer with 1,738 stores across the U.S. and Canada)

"Competitive markets produce price transparency that provides end-use consumers more choices than those from the vertically integrated energy delivery construct. Competitive markets not only provide consumers the options that can mitigate price volatility but those markets also inherently improve reliability through regional transmission organizations on the supply-side and increase efficiency and technology options on the demand-side. Make no mistake about it. Competitive electricity markets are working."

Steve Elsea, Director of Energy Services, Leggett & Platt, Inc. (diversified manufacturing company with over 180 facilities in the U.S.)

Competition Promotes Renewables

"Competitive electricity markets provide two key advantages to wind energy development; clear prices to value the energy produced with the wind and a diverse grid of resources that can fill in the gaps during periods of little wind. Competitive markets offer the best environments in the US today for the further development of renewable energy resources such as wind."

Jeffrey M. Bladen, Vice President, Market Planning & Strategy, Gamesa Energy USA

Competition Promotes Demand Response

"The transparency and pricing mechanisms found in competitive markets uniquely benefit the growth of demand response."

Dr. Eric C. Woychik, Vice President, Regulatory Affairs, Comverge, Inc.

Competition Complements Market Approaches to Climate Change

"Competitive markets and climate change legislation go hand in hand. Competitive markets allow for lower barriers to innovation and the proper investment discipline needed to lead the way towards our energy future."

John E. Shelk, President and CEO, Electric Power Supply Association

Competition Alleviates Transmission Congestion

"When you have Obama and T. Boone Pickens saying the same thing, then you've got the right focus. Congestion is the problem, but competitive markets can address and defeat it."

Larry Bruneel, Vice President - Federal Affairs, ITC Holdings, Inc.

Competition Empowers Consumers

"Competitive markets yield transparent price signals that convey critical information to consumers and investors who can then respond to market forces. Research has shown that competitive electricity markets do provide more liquidity and better price signals, as well as better incentives for cost minimization."

Dr. Catherine D. Wolfram, Associate Professor of Business Administration, Haas School of Business, University of California, Berkeley