The Impact of Federal and International Policy on Kentucky's Energy Future

A Review Conducted Pursuant to Executive Order 2005-120

by the Kentucky Public Service Commission

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INTRODUCTION

Executive Order 2005-120, issued by Governor Ernie Fletcher on February 7, 2005, directed the Kentucky Public Service Commission ("Commission") to "consider, investigate, and issue a report related to the role of the federal government and international institutions as they might bear on an energy policy for the Commonwealth of Kentucky." Further, the Executive Order stated that "The Report shall identify federal and international policies or actions that affect the ability of the PSC to establish in Kentucky electric and natural gas rates that are fair, just and reasonable. The report shall also identify how such policies or actions affect the ability of Kentucky based energy producers to export energy supplies in interstate and international markets."

In accordance with the Executive Order, the Commission conducted a comprehensive review of relevant statutes, treaties, and other source materials. This report summarizes the jurisdiction of federal government agencies and the Commission with respect to electricity and natural gas utilities and services, and the effect of recent federal statutory and regulatory changes on Kentucky's energy policy and the ability of the Commission to ensure fair, just, and reasonable utility rates for Kentuckians. The findings and conclusions of this report are based upon years of Commission expertise in regulating utilities within its jurisdiction and participating on behalf of the Commonwealth in federal regulatory proceedings, particularly at the Federal Energy Regulatory Commission ("FERC"). The statements contained in this report are intended as

general observations, and are not binding on the Commission in any pending or future proceeding.

Lastly, the role of the federal government and relevant international institutions is a fluid one. Consequently, this report reflects the status quo. Many relevant issues are presently before the courts, at the FERC and other federal agencies, and part of the World Trade Organization's ("WTO") ongoing negotiations regarding the General Agreement in Trade and Services ("GATS"). Moreover, the provisions of the Barton-Domenici Energy Policy Act of 2005, enacted on August 8, 2005, will be implemented over the coming years and will undoubtedly affect energy prices and utility rates in Kentucky. Where possible, this report attempts to summarize the potential effects of this legislation.

EXECUTIVE SUMMARY

Kentucky enjoys abundant supplies of affordable energy in the form of electricity and natural gas. Kentucky consumers, on average, pay the lowest electricity rates in the nation, while our natural gas rates are slightly below the national average. The wholesale price of natural gas is established by mature, interstate commodities markets regulated by the federal government and is passed through to consumers in the rates of distribution utilities. Interstate electricity markets and electric utility service are undergoing a period of rapid change and subject to both federal and state regulation.

The price Kentuckians pay for natural gas is largely determined by federal policies affecting supply, demand, and deliverability. Initiatives to increase the

availability of natural gas, in the form of new production and infrastructure, will benefit Kentucky ratepayers. As for electricity, Kentucky (unlike some states) closely regulates all aspects of electricity price and service to customers, whereas the federal government regulates the price and terms of service for bulk power sales to other utilities. Kentucky's extremely low electricity rates are the result of historic investments by Kentucky's utilities in large, coal-fired generating units, along with an abundant local fuel supply, sound utility management, and careful regulation. Federal policies regarding interstate wholesale power markets and environmental regulations will affect the price of electricity in Kentucky. Kentucky should consider appropriate policies to mitigate these risks.

On August 8, 2005, the President signed into law H.R. 6, the Barton-Domenici Energy Policy Act of 2005. In the Comprehensive Energy Bill just passed by Congress, contained in the voluminous Act are noteworthy changes to federal electricity and natural gas laws. The provisions of the Act, which include clarification of FERC jurisdiction with regard to interstate markets and RTOs along with economic incentives and tax reforms, are designed to improve electric reliability and spur investment in electricity and natural gas infrastructure. The new law also contains a number of tax reforms that may affect electricity and natural gas prices. Specifically, the Act amends the Internal Revenue Code to assign a seven-year depreciation recovery period to natural gas gathering lines; assigns a fifteen-years depreciation recovery period to natural gas distribution lines and certain electric transmission properties; expands the amortization period for certain pollution control facilities; and exempts certain prepayments of

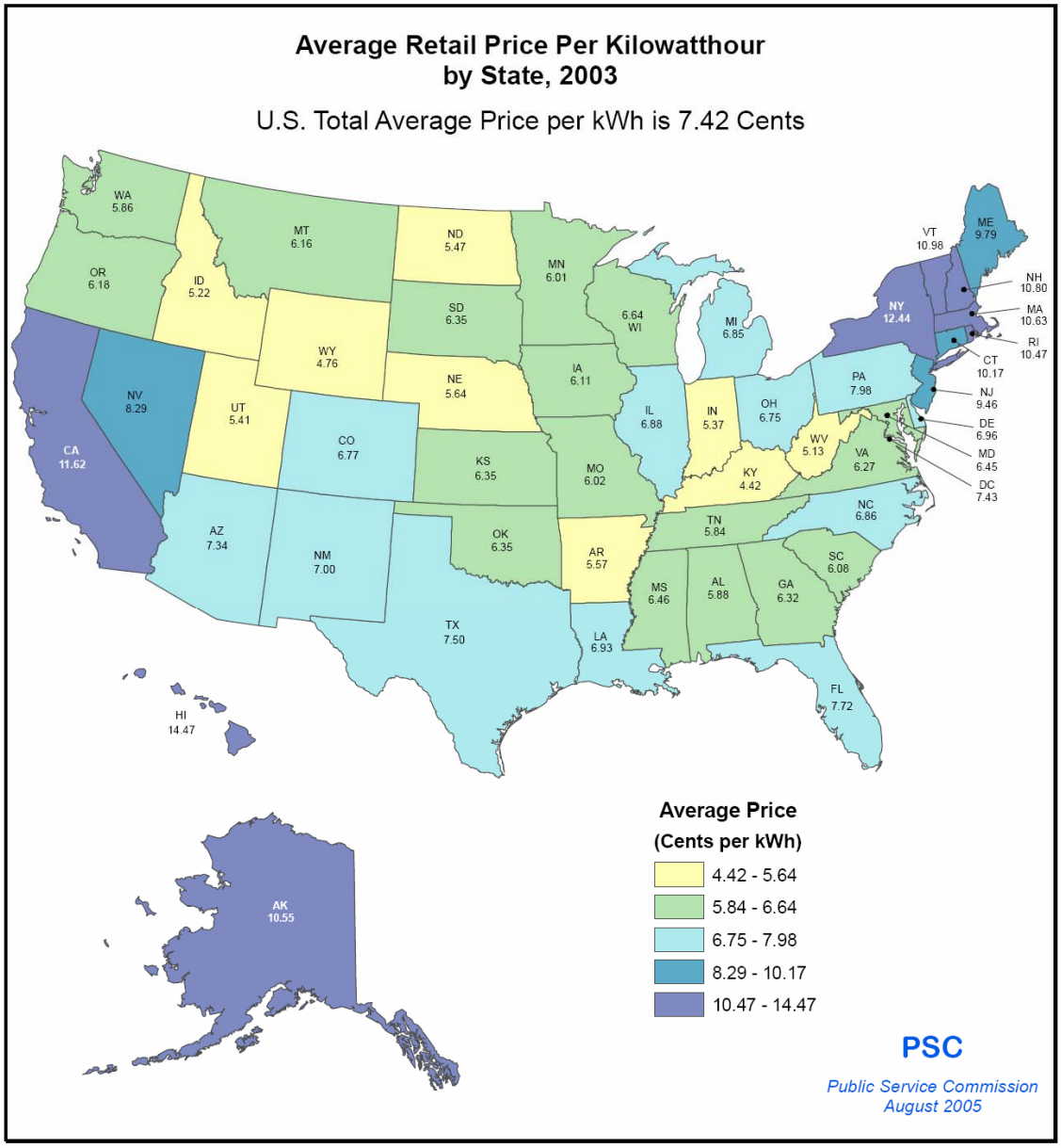
natural gas from arbitrage bond rules. Lastly, the new Act contains a number of provisions designed to improve our Nation's energy efficiency, which will help reduce future prices for electricity and natural gas. Among the provisions are efficiency standards for new products and appliances, new energy efficiency requirements for the Federal government, and a tax credit up to $2000 per year for 20% of expenditures for energy efficiency improvements made to existing residences before 2008.

Recent developments in international trade law do not appear to pose a threat to Kentucky energy prices and supplies. However, treaties potentially affecting international energy markets should be monitored carefully.

ELECTRICITY ISSUES

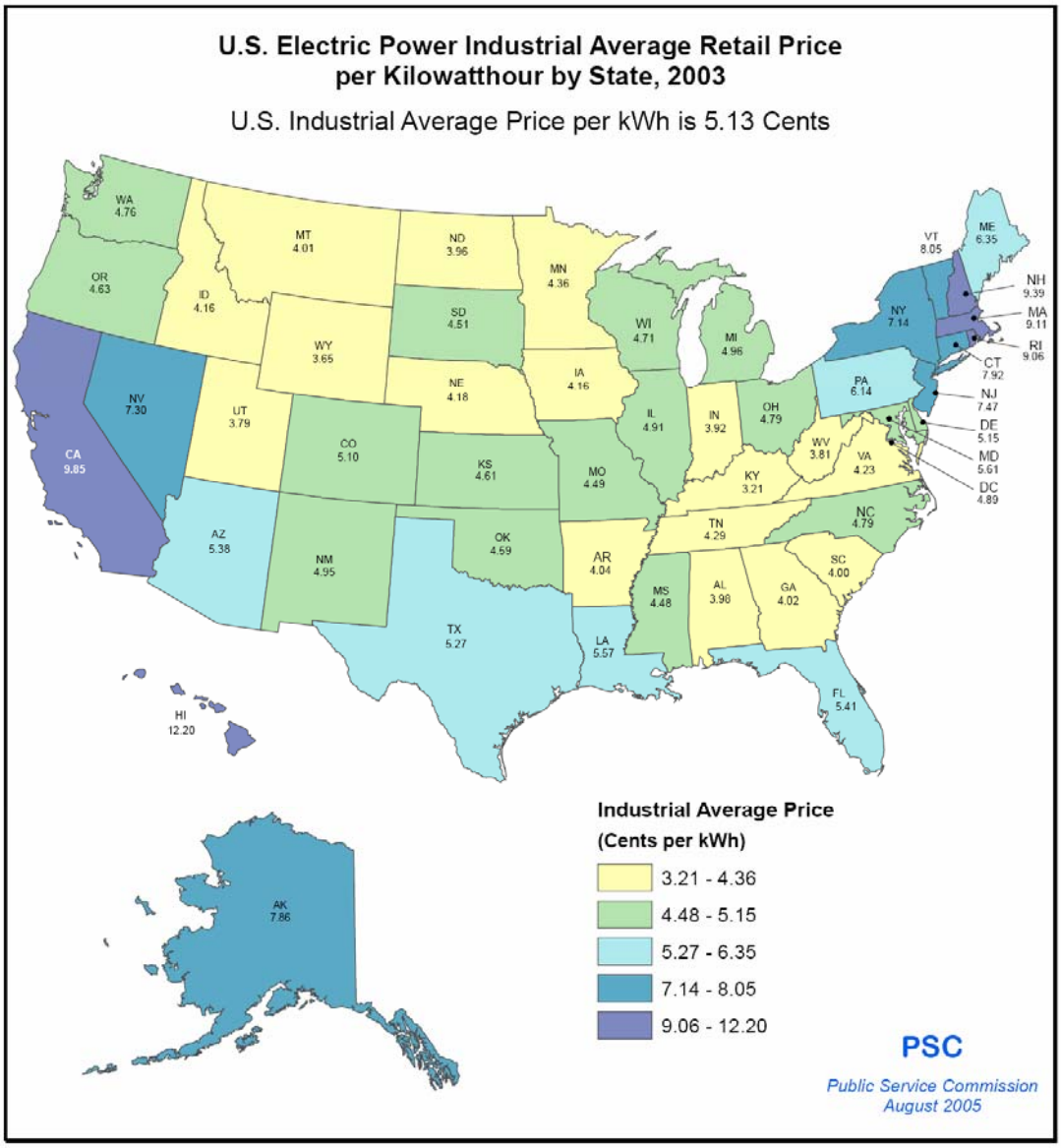
Kentucky currently is in an enviable position, enjoying the lowest retail electricity rates in the country. The reasons for Kentucky's low rates are varied, but primarily they derive from historic investments by utilities in large, coal-fired generating units, combined with an abundant local fuel supply, sound utility management, and a statutory system that ties the price utilities may charge for providing electricity service to the costs of providing that service. By and large, electric utilities in Kentucky are healthy and able to meet the needs of customers with their own generation or through long-term power supply contracts. Although interstate wholesale electricity markets are developing in states and regions to the east, north, and west of Kentucky, utilities in Kentucky are rarely dependent on these markets to meet their daily electricity supply needs.

Overall, Kentucky is a net electricity exporter. Anticipated profits from the sale of surplus power by Kentucky's regulated utilities to other utilities are typically factored into the retail electricity rates of their customers. Profits derived from these "off-system" sales are used to offset other operational and capital costs paid by Kentucky ratepayers. However, too much capacity may result in excessive costs that cannot be offset by off-system sales. Kentucky's jurisdictional electric utilities do not typically plan for a significant level of such sales. Generally, Kentucky's utilities plan generation resources to meet their native load and have a reasonable reserve margin. If Kentucky's utilities do



Source: Energy Information Administration, Form EIA-826, "Monthly Electric Utility Sales and Revenue Data".

Figure 1. Average Retail Electricity Rates



Source: Energy Information Administration, Form EIA-826, "Monthly Electric Utility Sales and Revenue Data".

Figure 2. Average Industrial Electricity Rates

not continue to balance generation capacity with demand, the resource imbalance will require Kentucky's utilities to rely on the wholesale energy market to either sell excess generation or to purchase additional supply resources at competitive market prices.

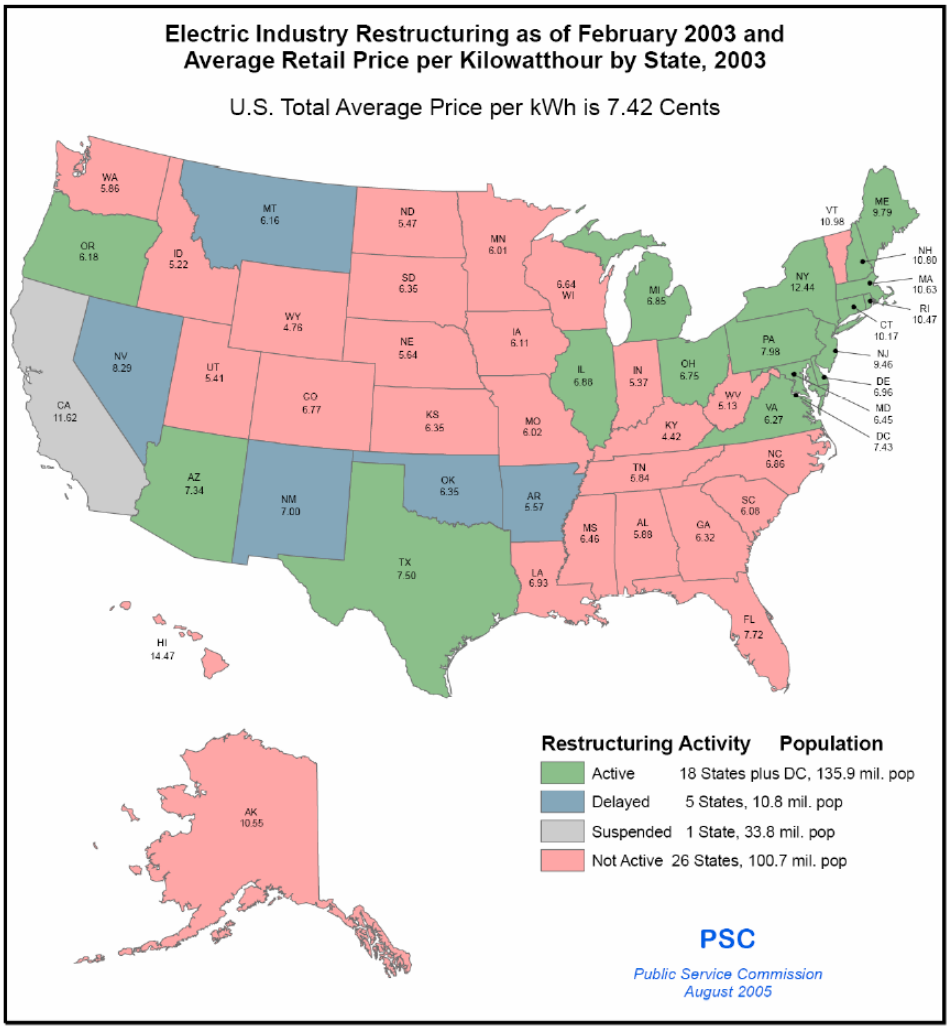
History of Electricity of Production

To better understand the outside forces that impact Kentucky's ability to retain low cost electricity while benefiting from off-system sales, it is necessary to review the history of how utility regulation has evolved.

Traditionally, in Kentucky and across the country, an electric utility provided all functions to its customers: generation, transmission, distribution and marketing. These utilities are referred to as "vertically integrated utilities" and are regulated as natural monopolies. State public utility commissions ("PUCs") or public service commissions ("PSCs") have historically determined where these utilities can operate, which facilities they can construct, what services they provide and what rates they charge their customers. Traditionally, these rates have been based upon the utilities' costs—both for capital infrastructure investments and the costs of operating, maintaining, and providing utility service. Regulation of electric utilities in Kentucky follows this traditional regulatory model.

In recent years, a number of states have attempted to "restructure" or "de-regulate" their electric utility industry. The formula varies from state to state, but the central concept is more or less the same: by statute or regulation, customers are given the ability to choose their electricity supplier; outside suppliers (other utilities or marketers) and incumbent utilities are authorized to contract with

customers to supply power; incumbent utilities continue to "deliver" or distribute the power to the customer; "market power" is mitigated by regulation and/or requiring divestiture of the incumbent utility's generating capacity; charges are imposed to allow the incumbent utility to recover previously-allowed, but now "stranded" costs; and mechanisms, such as rate freezes and suppliers-of-last-resort, are put in place to facilitate the transition to a "competitive" retail electricity market. Typically, "restructuring" has occurred in states with historically high electricity rates—the premise being that competitive forces will result in lower electricity rates. States pursuing restructuring have met with varying degrees of success, with California experiencing the most dramatic problems, and Pennsylvania often viewed as one of the most successful. One of the benefits of competitive markets touted by proponents is that investors, rather than ratepayers, bear the risk for bad investments. Detractors, however, point out that because of the natural monopoly characteristics of electricity generation, transmission and distribution; markets do a poor job of ensuring sufficient generating supply margins to meet electrical reliability needs. This is due to the seasonal nature of electricity demand and the high capital cost (hundreds of millions of dollars) of base load power plants.



"Active" States have either enacted enabling legislation or issued a regulatory order to implement retail access. Retail access is either currently available to all or some customers or will soon be available. In Oregon, no customers are currently participating in the State's retail access program, but the law allows nonresidential customers access.

"Delayed" States have either delayed the restructuring process or the implementation of retail access.

"Suspended" State (CA) has ordered suspension of direct retail access.

"Not Active" States are not actively pursuing restructuring.

Sources:

1. *Energy Information Administration, U.S. Dept. of Energy, webpage: www.eia.doe.gov, "Status of State Electric Industry Restructuring Activity as of February 2003".*
2. *Energy Information Administration, U.S. Dept. of Energy, Form EIA-826: "Monthly Electric Utility Sales and Revenue Data".*
3. *U.S. Department of Commerce, Census Bureau, Table 2: "Resident Population of the 50 States, the District of Columbia, and Puerto Rico: Census 2000," December 2000 release.*

Figure 3. Electric Industry Restructuring Activity

In Kentucky, six major electric utilities are regulated by the Commission. Louisville Gas and Electric Company ("LG&E") and Kentucky Utilities Company ("KU") are investor-owned utilities ("IOU's") that operate primarily in Kentucky,

while Kentucky Power Company, a subsidiary of American Electric Power ("AEP") and The Union Light, Heat and Power Company ("ULH&P"), a subsidiary of Cinergy, are IOU's that are part of multi-state holding companies. East Kentucky Power Cooperative ("EKPC") and Big Rivers Electric Cooperative ("BREC") are non-profit generation and transmission cooperatives. The Commission also regulates distribution cooperatives, but does not regulate municipal electric utility systems, or the Tennessee Valley Authority ("TVA") or its distribution utilities. The Commission has no jurisdiction over electric power sales by Independent Power Producers ("IPPs") (often referred to as merchant generators or merchant plants) that generate electricity for sale to other utilities or in the wholesale market. However, the Kentucky State Board on Electric Generation and Transmission Siting regulates the siting of IPPs and merchant transmission lines (i.e., those transmission lines proposed to be built in Kentucky by entities not regulated by the Commission).

Federal Regulation of Electricity

Just as the state PUCs and PSCs have traditionally regulated the retail operations of utilities within their borders, the FERC has jurisdiction over and responsibility for regulation of: (1) wholesale electric power sales, (2) interstate transmission rates, (3) mergers and acquisitions of utility companies and certain facilities, and (4) hydroelectric power projects. In addition to FERC regulation, utilities also are regulated by other federal entities, such as the Federal Trade Commission ("FTC") and/or the Department of Justice ("DOJ"), with regard to anti-trust matters. Under the Public Utility Holding Company Act ("PUHCA") and

other securities law, electric utilities and their holding companies are also regulated by the Securities and Exchange Commission ("SEC"). Note, however, that the recently enacted Barton-Domenici Energy Policy Act of 2005 repeals PUHCA and expands FERC jurisdiction to include review of holding company mergers and acquisition by utilities of power plants. Finally, the other major federal regulatory agencies impacting the utility industry are the Department of Energy ("DOE"), especially in manners dealing with energy infrastructure security coordination, research and development, and the Environmental Protection Agency ("EPA") with regard to compliance with environmental laws.

Historically, the Federal Power Act of 1935 gave the Federal Power Commission (now known as FERC) jurisdiction over interstate electricity service of "public utilities" while leaving intrastate and retail electricity regulation to individual states. At that time, electricity generation service was provided by vertically integrated utilities operating as regulated monopolies, which were only allowed to charge cost-based rates, including cost-based sales of power to other utilities. Over time, FERC began allowing utilities to charge "market-based" rates for sales from one utility to another (wholesale transactions). FERC only allows utilities to charge market-based rates if the utility has demonstrated that it does not possess undue market power (i.e., the ability to artificially manipulate the wholesale price of power). FERC has limited jurisdiction over the rates and terms of service of cooperatively-owned utilities, municipal electric utilities, and federally-owned utilities, such as TVA and the Power Marketing Administrations.

In 1935, PUHCA gave regulation of utility holding companies to the SEC. In 1978, The Public Utility Regulatory Policies Act ("PURPA") established a class of non-utility generators referred to as qualifying facilities ("QFs"). Utilities were required to connect QFs and buy power at prices not to exceed the avoided cost of generating that power themselves. The intent of this legislation was to encourage small renewable generators and cogeneration (the production of electricity and another form of useful energy such as heat or steam). Indirectly, this led to a new class of independent power producers, and set a precedent for utilities being required to interconnect to non-utility generators.

In 1992, the Energy Policy Act ("EPAct") established a new category of non-utility generators, exempt wholesale generators ("EWGs"). (*Exempt* refers to their exemption from holding company provisions of PUHCA). The EPAct expanded the Federal Power Act by authorizing FERC to require utilities to transmit or "wheel" other suppliers' power across their transmission systems. FERC implemented this open access requirement in Orders 888 and 889 in 1996, which was intended to prevent utilities from discriminating against other suppliers when providing access to transmission service. Order 888 also introduced the concept of an Independent System Operator ("ISO"), which is an independent entity that would operate transmission systems to ensure that utilities provide for open access to their transmission systems. In December 1999, FERC issued Order 2000, which outlined minimum functions of a Regional Transmission Operators ("RTOs") (very similar to ISOs) and required utilities to file a proposal to join or form an RTO. RTOs are regional entities responsible for

providing transmission services and ensuring open access to the transmission system of multiple utilities. While Order 2000 required utilities to file their intentions to join an RTO, FERC did not explicitly mandate that utilities join an RTO.

Originally intended to implement open access requirements, RTOs have evolved into also serving as trading platforms for wholesale electricity markets. Two RTOs have members in Kentucky: the Midwest Independent Transmission System Operator ("MISO"), of which ULH&P (through its parent company Cinergy) and LG&E/KU are members; and PJM Interconnection, Inc. ("PJM"), of which Kentucky Power ("AEP") is a member. However, the Commission currently has an open investigation of LG&E and KU's membership in MISO. MISO and PJM are not only providing those services outlined in Order 2000 (primarily ensuring non-discriminatory access and scheduling transmission on the bulk power system), but are also running FERC-approved regional wholesale electricity markets, with day ahead and real time markets for power.

With the passage of the EPAct in 1992 and subsequent FERC Orders aimed at developing regional wholesale power markets, the line of demarcation between state and federal regulation has been shifting. Similarly, the role of the state PUCs and PSCs has been changing. Roughly half of the states have, in some fashion, restructured their electricity service to provide for retail access to competitive electricity providers in an effort to take advantage of lower priced electricity available in the wholesale market. These states have increased their reliance on the wholesale market and therefore RTOs to facilitate delivery of bulk

power to utilities. The PSCs or PUCs in these states have shifted their regulatory focus toward retail market oversight, and rely on FERC for oversight of wholesale markets. Although several of Kentucky's utilities are members of RTOs, the Commission continues to regulate these utilities under a traditional model, which focuses on ensuring that each utility is able to meet its supply needs through self-generating power from plants they own or by entering into long-term power supply contracts.

A more recent effort by FERC to promote development of interstate electricity markets was the Standard Market Design ("SMD") Order, issued on July 31, 2002, which proposed to strengthen and expand the RTO model. SMD would have mandated that utilities give up control of their transmission systems by either joining an RTO or employing an independent operator. The proposed order set forth a specific vision for the development of regional electricity markets and proposed extensive changes to the calculation of interstate transmission rates, the rules governing interstate electricity markets, and utility resource planning. In the face of significant opposition from utilities and states, FERC attempted to soften the proposed changes with the issuance of the SMD White Paper in April of 2003, which modified the original proposals and further discussed FERC's rationel. Under new leadership and in the face of continued opposition (as manifested in the electricity title of the recently enacted federal energy bill), FERC has suspended work on SMD, formally terminating the proceeding on July 19, 2005. However, portions of FERC's proposed SMD have

already been adopted by MISO and PJM and Kentucky's retail customers are impacted as a result.

Regional Transmission Organizations

In the stakeholder forums at MISO and PJM, as well as at the FERC, the Commission finds itself in the minority when positions are taken and policies implemented that place a burden or an additional cost on Kentucky ratepayers while benefiting those who rely more heavily on wholesale markets. In multiple filings at FERC, the Commission has repeatedly outlined its concerns with the cost implications of RTOs and the encroachment upon state jurisdiction. In summary, these concerns revolve around the increasing costs of RTOs and the blurring of the distinction between state and federal responsibility for electricity service.

The costs associated with RTOs are recovered in wholesale transmission rates or other fees approved by FERC. Under the "filed rate doctrine," because these costs are lawfully established under federal law, a state must allow them to be passed through in utility rates. In Kentucky, these costs must be paid by the utility's "native load" customers, i.e., those customers historically served by the utility at rates designed to reflect the cost of the utility's system plus a return on investment. Since Kentucky's utilities traditionally self-generate or otherwise procure their own electricity supplies, delivering that electricity over their own transmission facilities, by paying RTO-related costs, native load customers are being asked to pay for a service for which they may receive limited benefits. From Kentucky's perspective, if one only looks at the issue of purchasing

wholesale power to meet the power demands of our largest utilities, there is little obvious economic benefit to utilities in Kentucky of participating in RTOs. However, utilities may be able to recoup the costs by increasing their "off system" sales as a result of RTO membership. Unless our large utilities are able to purchase power from another supplier for less than the cost at any given time of self-generating power, they can and should generate that power themselves.

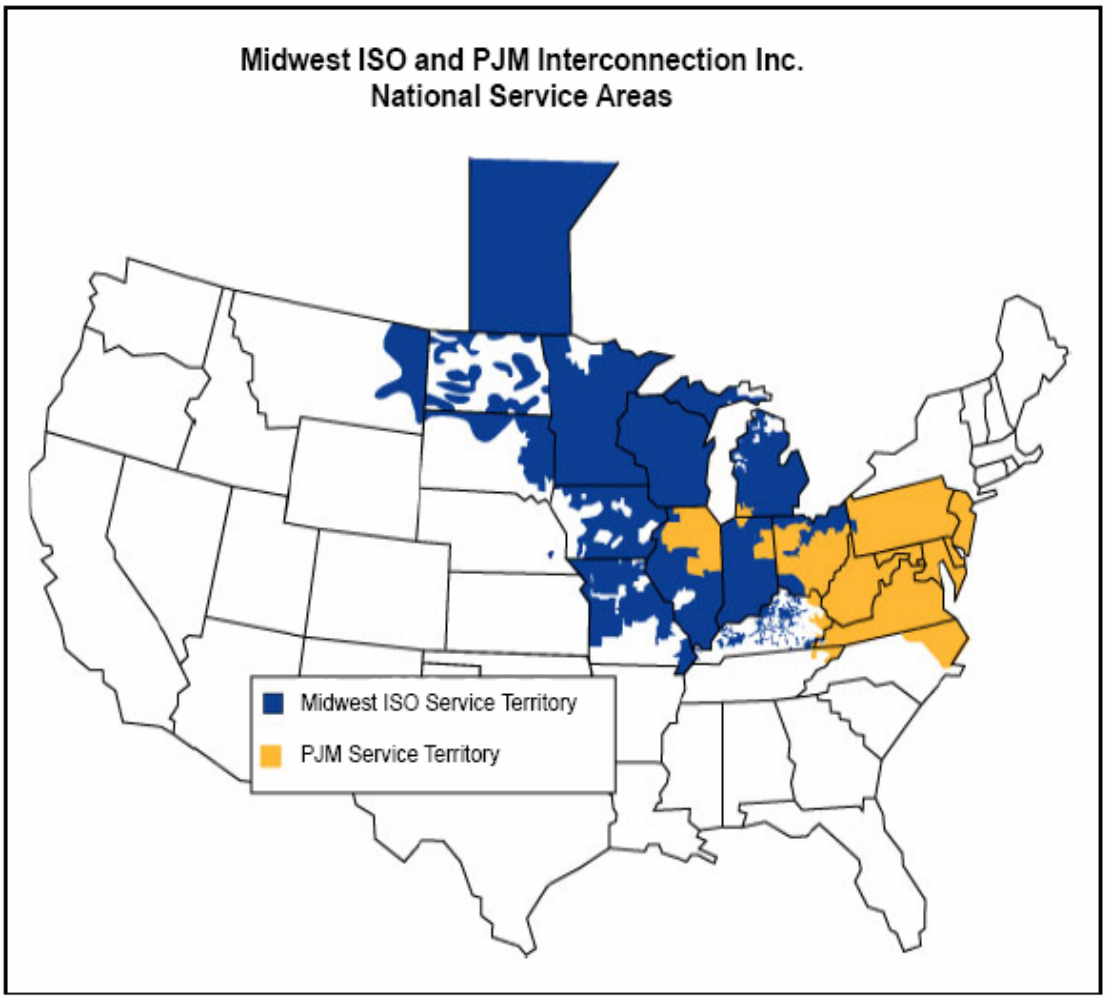


Figure 4. MISO and PJM Footprints

Another major area of concern is the increasing scope of RTOs and blurring of the line between FERC-regulated functions and state-regulated

functions. Of particular concern are issues involving generation adequacy and the allocation of costs associated with transmission upgrades. The Commission, through its Integrated Resource Planning ("IRP") process, ensures that the utilities are forward looking and have plans in place to meet native load growth. To obtain a Certificate of Public Convenience and Necessity ("CPCN") to construct any facilities or power plants, utilities must show that the facility is necessary to meet the needs of its customers and is the best alternative available considering cost and all other relevant factors. Kentucky's utilities would not be able to obtain a CPCN for investment beyond that needed to serve their native load customers. Though not certain at this time, there are proposals at both PJM and MISO to look at generation resources from a regional perspective. Some argue that this could lead to requirements for Kentucky's utilities to build generation that is needed regionally, but not needed to serve Kentucky's native load customers.

For example, at both PJM and MISO there are regional planning efforts to identify needed transmission upgrades. It is not clear at this time how the costs of any upgrades in Kentucky would be allocated. Naturally, Kentucky ratepayers should only pay their share of any cost associated with upgrade of transmission lines to the extent they benefit. The difficulty in assigning costs to those that benefit is in determining who benefits and by how much. FERC has taken the perspective, broadly stated, that expansion of electric infrastructure makes the interstate system more robust and therefore benefits all users of the grid. Many states argue that projects designed to facilitate long-distance transfers of power

should not be paid for by local ratepayers. While lines built to facilitate interstate transfers of electricity would provide a marginal benefit to Kentucky's native load customers, they may not be necessary to serve them. Of the numerous recently proposed transmission expansion projects in Kentucky, all are seeking to be justified on the basis of meeting the growing electricity needs of Kentucky native load customers.

Proponents of RTOs argue that there are other factors that affect the wholesale price of power, such as deliverability, and other important benefits of RTOs, such as increased reliability, clearer market signals for investment in generation and transmission, and access to larger markets for utility sales of excess power. By having the ability to match buyers and sellers over a larger area, RTOs can schedule transactions and re-dispatch generators in order to relieve congestion on the grid. Proponents also point out the reliability benefits of RTOs. Since RTOs are responsible for monitoring the bulk transmission systems of multiple utilities, they are better able to detect and isolate incidents which could lead to widespread outages.

From an investor perspective, some analysts support RTOs because they are able to identify economic sites to construct regional infrastructure, such as merchant power plants and transmission lines. They argue that this also supports regional reliability by identifying weak points in the interstate system. From the perspective of traditional, vertically-integrated utilities, RTOs may also represent more robust markets for sales of surplus power. Given the rate structure of some utilities in Kentucky, which rewards customers by sharing a

portion of the profits from such sales, RTOs may indeed benefit Kentuckians. Utilities that benefit from greater sales of surplus power, however, must be wary of market power issues at FERC. If a utility is determined to have undue market power, FERC may take away the utility's authority to sell wholesale power at market-based rates. One of the ways in which utilities have successfully shown mitigation of alleged market power is by having an independent entity controlling transmission services, such as an RTO.

ULH&P, a subsidiary of Cinergy Corp., and LG&E/KU are charter members of the MISO. As previously noted, the Commission is currently investigating the propriety of LG&E/KU's continued membership in MISO. In the case, LG&E/KU are asking that they be allowed to withdraw from MISO. Any withdrawal would have to be approved by FERC, and an exit fee paid, pursuant to the original agreement creating MISO. Among other arguments, LG&E/KU argue that the costs exceed benefits received, while MISO argues that the benefits outweigh the costs. The lengthy case file can be found on the Commission's Website, www.psc.ky.gov.

Kentucky Power, Kentucky's subsidiary of AEP is a member of PJM. PJM has grown quickly in budget, scope and geographic footprint as well. Given AEP's multi-state footprint and size, the Commission found that there were positive net benefits to membership in PJM, including opportunity for increased off system sales. However, AEP has expressed concern over the Resource

Adequacy model as proposed by PJM and its implications on its Kentucky operations.[1]

Kentucky's two generation and transmission ("G&T") cooperatives, BREC and EKPC, are not members of any RTO at this time. However, at the June 14, 2005 public hearing in the 2005-00090 case, the CEO of EKPC commented that their operations have been negatively impacted by the April 1, 2005 start-up of the MISO market. They commented that EKPC was being forced to run higher cost generation because of increased load on the transmission system.

In summary, Kentucky is in a unique place with respect to RTOs. Most of Kentucky's utilities are low-cost producers that do not rely on market purchases to meet their power needs. While there are significant costs associated with RTO participation, it is unclear to what extent the existence of organized markets, and Kentucky's participation in those markets, increases Kentucky ratepayers' ability to benefit from off-system sales. Any future restriction, however, on the ability of Kentucky's utilities to finance and construct new power plants to meet their future energy needs will necessitate a greater reliance on market-based purchases.

[1] See written comments of Tim Mosher in PSC Case No. 2005-00090.

Barton-Domenici Energy Policy Act Electricity Provisions

Title XII, The Electric Reliability Act of 2005, is devoted to electricity. Among its significant changes to federal law are the following:

- Gives FERC authority to oversee the establishment of mandatory reliability standards for the electric power industry (Sec. 1201)
- Gives FERC limited "backstop" authority to site previously identified critical interstate transmission lines where states fail to take action (Sec. 1221)
- Establishes a new office and programs at the DOE devoted to electricity research and development (Sec. 1225-1227)
- Grants FERC limited jurisdiction over the transmission systems of non-jurisdictional utilities (co-ops, municipalities, etc.)(Sec. 1231)
- Expresses the sense of Congress that RTO participation should be voluntary (Sec. 1232)
- Remands FERC's proposed SMD Order and prevents any similar order until December 31, 2006 (Sec. 1235)
- Preserves the ability of traditional utilities to use their transmission to first meet "native load" customer needs, while preserving some current RTO policies (Sec. 1236)
- Directs FERC to establish "incentive rates" to reward investment in more efficient and beneficial transmission projects (Sec. 1241)
- Eliminates the mandatory purchase requirement of PURPA under certain conditions (Sec. 1253)
- PUHCA, gives states greater access to the books and records of holding companies, and expands FERC authority to review utility mergers and acquisitions (Sec. 1263-1276)
- Directs FERC to establish rules to facilitate more transparent markets, increases FERC penalty authority, and adds new consumer protections (Sec. 1281-1286)

How the changes to federal electricity law will affect Kentucky ratepayers is yet to be determined and will depend in large part on how the federal government implements the changes. For example, any cost incurred to comply with new reliability standards will likely be passed through to Kentucky

ratepayers. However, the benefit of fewer outages and the savings derived therefrom will benefit ratepayers. It is unlikely that Kentucky will be affected in the short term by the expanded FERC "backstop" siting authority, since Kentucky law already provides a mechanism for timely consideration and permitting of proposed utility transmission projects. A conflict would arise if the federal government designated a "national interest electric transmission corridor," and utilities or merchants did not seek or were not granted a transmission certificate.

Based on engineering studies performed in 2001 and 2005, the Commission has concluded that there are transmission limitations to North and South power flows in Kentucky. MISO has reported similar findings. It is possible, therefore, that the DOE may designate Kentucky as having one or more "national interest electric transmission corridors." The concern would then be who pays for the designated transmission upgrades and how do state and local interested parties participate in siting the transmission line. It will be important for Kentucky to participate in any designation process at the DOE.

This raises another important issue, however, and that is the TVA "fence" which Kentucky straddles. Under federal law, TVA is prohibited from selling power outside of its territory, and other utilities are prohibited from selling to distributors within TVA. As a result, there are weak transmission interconnections between TVA and neighboring utilities in Kentucky limiting the North and South power flows mentioned above. It is unclear whether DOE would look to these weak points when considering national interest designations while the "fence" is still in place.

Taking down the "fence" will require changes in federal law, and such proposals have been put forth again recently. It is noteworthy that several Kentucky-based TVA distributors have given notice to TVA that they are leaving the TVA system and will be obtaining power from other suppliers at the end of five years. Transmission expansion in Kentucky may be required to facilitate this transition and better interconnect the former TVA distributors to Kentucky's jurisdictional utilities and outside suppliers. Any costs associated with supplying power to a former TVA cooperative will have to be recovered in the cooperative's Commission-approved electricity rates. Therefore, it is in Kentucky's interest to ensure that any distributors that choose to leave TVA can do so at the lowest cost to the distributor and to remaining TVA customers in Kentucky. Interestingly, FERC recently ordered TVA to provide interconnection service to a Kentucky utility attempting to serve a TVA distributor that had previously given notice. For the moment, the cost details are left to the parties. Because of the implications for Kentucky, for both customers of utilities seeking to leave TVA and those choosing to stay, policy makers should closely monitor these developments.

Other Federal Regulatory Issues

Environmental regulation by the EPA can impact the cost of electricity, especially in a state such as Kentucky whose generation fleet is primarily coal fired generation. Recently, the Clean Air Impact Rule, a multi pollutant strategy was issued by the EPA to address sulfur dioxide and nitrous oxide, which contribute to fine particle pollution and ground level ozone. The EPA estimates

that by 2015 these rules will have a cost associated with them of $3.6 billion (1999$) and estimates health benefits of $85-100 billion and visibility benefits of $2 billion.[2] The cost to Kentucky's retail electric consumer was estimated to be 3.4 mills/kWh by 2015.[3]

The Clean Air Mercury Rule ("Mercury Rule") was also released in March of 2005. This rule makes the United States the first country to regulate mercury emissions from coal-fired power plants. According to EPA estimates,[4] when fully implemented, these rules will result in a 70 percent reduction in utility mercury emissions. This is expected to be done in a cap and trade, market-based manner.

According to Kentucky Environmental and Public Protection Cabinet ("EPPC") testimony in Commssion Case No. 2005-00090, economic growth, greater efficiency and a move to meet/address higher electricity demands are expected to continue over the next two decades. Real economic growth is forecast to increase by an average of 3.1 percent per year through 2025. Reflecting greater efficiency, the use of energy will grow by a slower 1.4 percent per year on average or by a total of 35.5 percent. Consumption of all sources of energy will increase: petroleum by 39 percent, coal by 34 percent and renewable energy by 37 percent.[5]

Even though there have been improvements in environmental quality while increasing use of coal, this increased demand for coal-fired electricity will

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[2] *http://www.epa.gov/cair.*
[3] *http://www.epa.gov/cair/state/ky.html.*
[4] *http://www.epa.gov/air/mercuryrule/.*
[5] PSC Case No. 2005-090, EPPC Comments, page 4.

demand newer, more advanced clean coal technology. Investments in such technology will allow Kentucky coal to be utilized as an important energy resource, while protecting the environment.

According to testimony from the EPPC, "power plants utilizing Integrated Gasification Combined Cycle ("IGCC") generation can significantly reduce air emissions, water consumption and solid waste production, and offer the potential of a technical pathway for cost effective separation and capture of carbon dioxide emissions and for co-production of hydrogen." Should there be greenhouse gas rules, such as limits on carbon dioxide emissions, this will become increasingly important, and investment now will reduce investment needed in the future, should existing plants have to be retrofitted in order to meet carbon sequestration rules.

According to EPPC testimony, there are other regulatory programs such as the Clean Water Act and the federal Resource Conservation and Recovery Act that impact electricity generation in Kentucky. It is expected that these will become more stringent and more costly and will place upward pressure on the price of electricity in the nation and in Kentucky as well.

Increased environmental regulation for coal-fired plants relative to other technologies could impact Kentucky's low cost electricity advantage. Kentucky should actively seek available federal funds for research and development including demonstration projects for cleaner energy production technologies. Kentucky should seek to become a national leader in energy production technology.

The way in which FERC and the RTOs plan and price the infrastructure additions, such as transmission lines, is of concern. There is potential for retail ratepayers to subsidize the building of this infrastructure and to receive limited benefit from its development. In addition to concerns regarding the financing of transmission lines, siting of transmission lines is difficult, often taking years to complete a line's permitting and construction. In addition to necessary environmental and regulatory hurdles there is a strong "not in my backyard" feeling among citizens and landowners.

NATURAL GAS ISSUES

Progress toward natural gas deregulation began in 1979 with the Natural Gas Policy Act. As a result of further action by the FERC and the Well-Head Decontrol Act of 1989, natural gas was fully deregulated as of January 1, 1993, allowing market forces of supply and demand to determine the wholesale price of natural gas. As the wholesale market matured, natural gas prices became more volatile and in general have increased over the last few years. In fact, current natural gas prices are more than double the price of five years ago, as wells operating at a lower marginal cost are depleted, and higher marginal cost wells supply more of the natural gas in the market. It is in this environment that local distribution companies ("LDCs") and state regulators must now operate.

Public Service Commission Jurisdiction

The Commission oversees five investor-owned LDCs, as well as more than 25 smaller LDCs. Those companies together have about 654,000 residential

customers and nearly 70,000 commercial and industrial customers. The Commission regulates these companies with regard to safety and price.

The Commission oversees the rates charged by Kentucky LDCs. The Commission sets the rates for delivery of natural gas to customers but, because of deregulation, has no control over the wholesale price of gas. The Commission must allow LDCs to pass through the wholesale cost of gas, within reason, to customers. Although the Commission is limited in its ability to affect the final bill to the customer, it has taken some measures recently to ensure that the gas costs are fair, just and reasonable.

Because the gas cost is a large portion of the total customer bill, the Commission conducted a management audit in 2002 to investigate the natural gas purchasing practices of the five major LDCs in Kentucky. The audit was conducted by The Liberty Consulting Group and resulted in a report filed with the Commission in November 2002. While Liberty suggested some changes in order to fine tune the practices of the LDCs, the report was overall very complimentary of the LDCs and their practices.

Another avenue that the Commission has explored in order to help mitigate the effect of price volatility on customers is to approve hedging plans proposed by four of the five major LDCs. These plans lock in or cap the price paid for a certain volume of the gas purchases, which is then averaged in with the price of stored gas and market purchases. Stored gas itself acts as a form of hedging, with LDCs buying gas when the price is lower and withdrawing from storage in the winter when the price is higher. While these hedging activities will

not guarantee the lowest price to the customer, they have proven helpful in decreasing volatility in a customer's gas cost.

The Commission also approved a customer choice program for one of its major LDCs, Columbia Gas of Kentucky ("Columbia Gas") in 2000. This program allows customers to choose their own natural gas supplier from a list of approved marketers or to stay with Columbia Gas as the supplier. This choice allows the customer to choose from a menu of options offered by the marketers such as a fixed price, a discount from Columbia Gas's rate, or a market price. Customers are usually required to sign up for a specified period of time, but can change to another marketer with proper notice or on the anniversary date of the contract. Results filed by Columbia Gas show that, in most cases, customers who participated in the program were able to realize savings on their gas costs.

Pipeline Safety

The United States Department of Transportation ("DOT") has jurisdiction over pipeline safety. The DOT has delegated the authority to regulate intrastate pipeline safety to the Commission, including municipal gas companies and other pipeline owners not otherwise regulated by the Commission.

Pipeline safety is a concern as infrastructure ages. Governor Fletcher has appointed an advisory committee and charged them with examining where regulatory changes may be needed, at the state and federal levels, to improve pipeline safety. This advisory committee may file comments to the Secretary of DOT. Pursuant to the Federal Pipeline Safety Improvement Act of 2002, the

Secretary of DOT must respond to these comments, setting forth what action, if any, the Secretary will take on recommendations.

Kentucky Natural Gas Production

Kentucky ranks 18th among the states in natural gas production. There are undeveloped gas reserves, particularly in eastern Kentucky, and the volume of available gas is likely to increase as coal bed methane is discovered and technology for extraction is improved. A key obstacle to developing many of those reserves is a lack of pipeline capacity. Just as interstate electricity transmission is under the jurisdiction of FERC, interstate natural gas pipelines are under FERC's jurisdiction. In order to increase exports of Kentucky natural gas as well as to facilitate intrastate sales, it is necessary to inject natural gas into the pipeline. With this lack of pipeline capacity, it is difficult to take advantage of our reserves. FERC must give federal regulatory approval for new pipeline capacity.

The lack of pipeline capacity can affect both well owners and the tax revenues of a state such as Kentucky. If well owners are unable to access interstate pipelines, they are unable to sell their gas and must forego revenue; therefore, the state loses tax revenue. This lack of pipeline capacity can lead to well owners being "shut-out" if they have interruptible transportation service with the pipeline, which allows the pipeline to curtail accepting the gas when firm transportation customers need the capacity. As coal bed methane production and LNG terminals increase their use of the pipeline, this decrease in pipeline capacity will become more of an issue. Constructing additional pipelines in

Kentucky would help alleviate the problem; however, this type of construction is expensive and must obtain regulatory approval from the FERC.

Natural Gas for Electricity Production

Also of concern to the Commission with respect to natural gas is the abundance of natural gas fired electricity. In Kentucky, these units have traditionally served as "peaking units," providing electricity when needed and not being used when base load coal-fired generation is less expensive. In many other states gas is used for intermediate combined cycle units and base load units. Impacts on Kentucky from this are twofold, natural gas that is used for electricity generation replaces coal as a fuel source, which impacts Kentucky as a coal producing state. At the same time, this increased demand for natural gas for electricity generation results in a higher cost for consumers who rely on natural gas for heat because of the forces of supply and demand in the natural gas market.

Barton-Domenici Energy Policy Act Natural Gas Provisions

Title III of the new Energy Policy Act is devoted to oil and natural gas, and contains provisions that are designed to provide for greater FERC oversight of natural gas markets, and increase natural gas production and pipeline capacity. As noted previously, the commodity price of natural gas is established in markets under federal jurisdiction and is largely driven by supply (production and storage) and demand forces, along with deliverability constraints. However, there have also been documented instances of gas market price manipulation in recent years. Presumably, the new changes in law intended to increase gas production,

expand pipeline capacity, and to better police interstate markets will have a positive effect on future wholesale natural gas prices. Since LDCs must pass through to customers the wholesale price of natural gas, any steps to lower this price benefits Kentucky natural gas consumers.

Noteworthy changes made by this Title are as follows:

- Extends FERC jurisdiction over the import and export of natural gas in foreign commerce and liquefied natural gas terminals (Sec. 320)
- Prevents regulation under the Safe Drinking Water Act of underground injection used for hydraulic fracturing in oil and natural gas production (Sec. 327)
- Designates FERC's record as the official record for federal administrative appeals relating to interstate pipeline construction; strengthens the penalties and enforcement of gas market manipulation and requires additional reporting of market information (Sec. 332, 333)
- Requires federal agencies to cooperate regarding oil and gas leasing on public lands (Sec. 344)
- Allows states to regulate coalbed methane production (Sec. 358)

THE WORLD TRADE ORGANIZATION AND ENERGY MARKETS

In addition to the federal and regional forces impacting Kentucky's utility industries, current negotiations regarding international trade agreements may impact Kentucky's utilities. In February 2000, the member states of the WTO began negotiating the GATS. In addition to services such as banking, construction, insurance, tourism and transport, the negotiations have included services typically provided as public services, such as education, health care and utilities. The provisions that included energy services could threaten regulated utilities.

The process is very fluid and the final impacts are uncertain at this time. If implemented as was proposed in earlier drafts, the Agreement would impact both state and federal regulation of electricity. The rules as proposed would apply to more than cross border trade; they would also affect state and federal regulations of utilities or domestic electricity markets. It is unclear as to how Kentucky entities could be impacted. If implemented, these rules would impact state and federal utility regulation in the following ways: (1) The GATS Agreement would prohibit monopolies for services "incidental to distribution of electricity," which would impact our utilities because of dedicated service territories; (2) The Agreement would require that third parties such as independent wholesalers or generators have access to transmission facilities even if such facilities were reserved to serve native load; and (3) State regulatory commissions would be limited to regulations that are no more burdensome than necessary to ensure the quality of service. If these rules are implemented, that would result in a fundamental change in electricity regulation in states such as Kentucky, eliminating the ability of the Commission to ensure fair, just and reasonable rates for electricity. This would likely result in higher rates to customers.

As mentioned, this process is in the negotiation stages and is very fluid. The United States Trade Representative ("USTR") is the negotiator on behalf of the United States in a process set forth in 1994 by the member nations of the WTO. The process is one of "offers" and "counter-offers" by member nations. The latest USTR "offer," dated May 31, 2005, did <u>not</u> include the earlier

proposals regarding electricity. At this stage, it is uncertain as to whether this alleviates concerns.

The latest "offer" includes pipeline transportation of fuels and storage facilities. There remains concern that this could impact state and federal natural gas and liquefied natural gas terminals. While the threat on electricity regulation may be alleviated at this point, given the potential implications for Kentucky, these negotiations merit close attention.

CONCLUSION

Kentucky enjoys an enviable position in the nation, having the lowest electricity rates in the country. In order to preserve this distinction which is crucial to attract industry, attention must be paid to RTO and other wholesale market policies at the FERC, as well as any force which would attempt to force de-regulation of Kentucky's regulatory model which has worked so well, whether it be federal policies or international treaties such as GATS.

With regard to environmental regulation, a balance must be maintained between environmental and economic health. Kentucky must be forward looking and be able to meet more stringent environmental standards, while maintaining its relative price advantage with regard to electricity.

If Kentucky is to maintain its low-cost advantage, its utilities must continue to invest wisely in meeting the future generation and transmission needs of customers. At the same time, Kentucky must critically assess the likelihood that environmental or other restrictions will limit the ability of Kentucky's utilities to construct needed electricity infrastructure in the future. Policy makers and

utilities should continue to consider cost-effective initiatives that will help to mitigate this risk.

Finally, given the continued focus at the federal level on interstate electricity market development, Kentucky should continue to consider the costs and benefits of participation in these markets. Factors to consider include the potential impacts of increased sales of surplus power by utilities as well as the economic impact of IPPs locating in Kentucky along with additional costs that may be imposed upon ratepayers. Kentucky can help shape electricity policy developments by remaining active and engaged at the regional, national, and international level. If federal policies ultimately require increased participation by Kentucky's utilities in interstate markets, then state policies must evolve to ensure that Kentucky consumers benefit and are protected.

With regard to natural gas, while the wholesale cost of natural gas and the national forces of supply and demand control a large portion of what Kentucky ratepayers face, LDCs must continue to ensure safe and reliable service. Aging infrastructure must be addressed in order to ensure the safety of Kentuckians. Where able, the LDCs must continue to take action to mitigate the wholesale market impact by wisely using storage and hedging mechanisms. The Commission must continue to monitor purchasing practices. Pipeline capacity must be increased if Kentucky is to take advantage of its natural gas reserves, including coal bed methane. This lack of pipeline capacity is impacting owners of reserves because it results in lost revenue and impacts the state and local governments because of the resulting reduced tax revenue.