



October 18, 2010

Utility Industry White Paper

a). **Needs Assessment: Opportunities & Challenges Facing Missouri's Economy.**

Today's electric utility industry is faced with the convergence of multiple issues that will have a direct impact on the security of Missouri's energy future, as well as the state's ability to compete for new business investment and economic growth for decades to come. At the highest level, these issues include uncertainty on the future of federal clean air legislation and impending environmental regulation; new investment in renewable energy resources and construction of necessary transmission infrastructure to access these new sources; the integration of emerging 'smart grid' technologies to promote energy efficiency and demand-side management, while securing the integrity of the 'open infrastructure' system and access to capital in order to make prudent investments in the next generation of power production and distribution. In addition to the macro economic issues facing this industry at the national level, Missouri's utilities work to meet customer expectations for the generation and delivery of reliable, low-cost, energy to power homes and businesses throughout the state. The single consistent factor during such times of unprecedented industry challenge is the fact that electric utilities are an engine for economic development within the state and are uniquely connected to the economic health and vitality of the communities it serves by providing critical services and infrastructure that help drive new investment and job growth in the state's economy. Transformation within this industry is an effort to put the right infrastructure and technology in place across the entire power industry value chain from the more traditional transmission, generation, and distribution projects to innovative new technology initiatives and renewable energy investments.

According to the Edison Electric Institute, electric utility industry jobs total nearly 400,000 with the industry representing roughly 3% of the nation's Gross Domestic Product. What these numbers don't show is the multiplier effect of increases in reliability and efficiency in the electric utility sector on other parts of the economy. Electric power drives every element of our economy.

Utilities are in the midst of a capital investment cycle on a magnitude not seen in nearly four decades. The last cycle of utility build was in the late 1960s through the 1970s. In that period, investment was due to a variety of factors, one including the increased number of air conditioning installations for homes, schools and businesses. The basic premise of today's investments are to modernize the electrical system with the intent to provide infrastructure that will encourage growth in renewable energy sources, empower consumers to reduce their energy use and lay the foundation for sustained, long-term economic expansion. U.S. Energy Secretary Steven Chu said "America cannot build a 21st Century energy economy with a mid-20th Century electricity system."¹ The scope of these projects is similar to the Interstate Highway System plan authorized by President Dwight D. Eisenhower in 1956 because of its size, its projected large impact on the country's commerce and its framing on a national development plan that will likely take decades to become fully operational.

While future investments in Missouri energy infrastructure may be significant, so also are the economic benefits of the project. Importantly, in the context of Missouri being a low-cost state, nearly every utility in virtually every state is faced with the prospect of similar investments. As a result of simultaneous investments across the country, Missouri will continue to be a low-cost state. As highlighted in this paper, reasonable changes to Missouri's regulatory process and framework can make the investments cost less for customers.

Missouri benefits from having electric rates that are consistently among the lowest in the nation provided by utilities recognized for their high reliability. In addition to helping power the growth and retention of Missouri's diverse industrial and commercial base, Missouri's utilities deliver reliable service to the state's emerging industries like plant/life sciences, information technology, and advanced manufacturing that are helping to drive the economy of the 21st century. Low-cost electric power is a key driver for companies when deciding to locate to Missouri. A September 2010

presentation by the Missouri Tax Credit Commission listed several traits that make Missouri an attractive business climate. The first listed was “Energy Cost Index’ (SBE Council) noting Missouri was ranked third nationally in this category.

That being said, Missouri is facing a number of major challenges to these low rates including federal EPA rules, regulations and legislation, and aging infrastructure including generation facilities. Today, Missouri businesses and residences receive nearly 90 percent of their electricity from plants that are more than 25 years old. It takes years, if not a decade or longer, to build new baseload electric generation stations. The need to make these strategic decisions for the next phase of power plant construction is now.

In addition to aging power plants, many of the poles, wires, substations and transformers serving Missouri customer have surpassed their useful life. Michael T. Burr, in his recent article entitled *Avoiding a Train Wreck* (Fortnightly September 2010) wrote, “Underinvestment has kept prices artificially low for too long. In many parts of the country, we’re still running utility infrastructure that outlived its intended life sometime last century.” This is true in parts of Missouri as well. In short, the rate and pace of replacements will need to increase.

The EPA has at least eight different rules that would affect coal power plants around sulfur, mercury, water, ash, carbon, and others. EPA actions around new rules in the next 36 to 60 months could force some coal plants to either shut down requiring equivalent electricity to be purchased from the market or shifted to other potentially more expensive sources, or require major investments to be made in environmental controls. If investments in environmental equipment are made, it is already estimated to cost billions of dollars across Missouri’s electric industry. These investments could be in coal plants that, in some cases, are over 45 years old.

Perhaps the electrical power with the most value is the power that does not need to be generated. The U.S. Department of Energy reports data showing that the average American family spends approximately \$2,000 a year on home energy bills, with one-quarter to one-third of that energy wasted via air leaks through windows, ducts and poor insulation, and older appliances using too much power.²

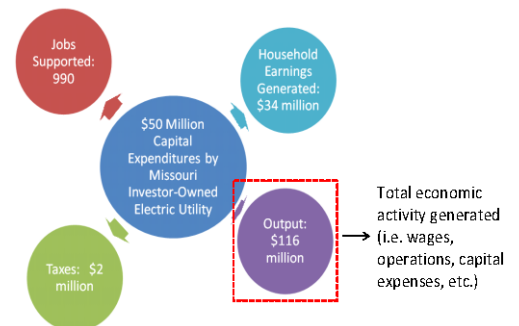
Another opportunity for Missouri is in driving energy efficiency programs. The way in which consumers utilize energy is a key component of our future economy. Regulatory support for cost recovery for energy efficiency and demand response programs is important as well as exploring the opportunities that exist through “smart grid” projects. Programs targeted to residential weatherization and energy efficiency programs, new construction and retrofitting existing commercial buildings to use less energy in their operations can both reduce business costs and potentially create new jobs. These kinds of programs provide opportunities for technology and innovation throughout Missouri’s economy.

Utilities are embarking on simultaneous efforts to: (1) modernize interstate transmission networks with extra-high voltage (EHV) capability, allowing for the integration of renewable energy resources (such as solar and wind) that may be located in remote areas; (2) incorporate digital communication technologies to reduce vulnerability to cyber attack and cascading power outages; (3) efficiently utilize electricity by directing it to where it is needed, while integrating multiple renewable power sources; and (4) utilize smart meters and two-way communication to dramatically improve automated demand management and electric grid control, saving consumers and businesses billions of dollars per year on their electricity bills.³

b).Significance of the Problem & Opportunity, Consequences if Not Addressed.

The availability and cost of energy continually ranks among the top five location factors for new business site selection each year, as based on results of the 24th Annual Corporate Survey of Business Executives conducted by Area Development Magazine in August, 2009. The capacity of Missouri’s utilities to retain its low cost energy advantage, while maintaining quality service delivery will have a significant impact on Missouri’s ability to attract

Job Creation for a \$50 million investment



Assumes 12% of capital expenditures goes toward payroll based on actual AmerenUE data; construction multiplier applied

and retain investment in ‘basic’ industry sectors and its ability to stimulate new job creation opportunities for the future. Missouri utilities continue to provide a key factor of production helping to power Missouri industry and technology.

As an industry sector itself, electric generation, transmission and distribution are an engine of capital investment and job creation right here in Missouri. In its Economic Impact Study completed in March 2010, Development Strategies Inc measured the economic output, household earnings and Missouri jobs supported as a result of electric utility based expenditures in plant operations, electric line maintenance and business operations. According to the U.S. Bureau of Economic Analysis, capital and operating expenditures in the power generation and supply industry stimulate further economic activity within Missouri. Industry-specific multipliers represent the per dollar impact of direct utility spending in Missouri’s economy. In other words, for every \$1.00 spent in Missouri’s power generation and supply industry, an additional \$1.75 in total new or added economic activity at all points of the production process is created in the state’s economy.

As the graphic on the previous page illustrates, every \$50 million investment in new capital plant and equipment made by a Missouri investor-owned electric utility helps support \$116 million in total economic activity, 990 direct and indirect jobs and approximately \$2.0 million in new tax revenue - proof that a healthy and vital energy industry is critical to Missouri’s long term economic success.

c). *Data further Validating Extent of the Problem.*

Currently Missouri’s investor-owned, cooperative and municipal electric service providers are developing a statewide impact study of the EPA’s proposed regulations. This study will be available prior to the end of 2010 but is not completed yet. Initial calculations indicate that the capital investments necessary to comply with these regulations between now and 2020 could exceed \$5 billion.

d). *Identification of Best Practices Related to the Issue.*

In 2008, New Jersey recognized the need for jobs and in-state investment to stimulate their economy. They also recognized that their utilities, just like Missouri utilities, have billions of dollars of system investments that need to be made. New Jersey’s governor, regulators, utilities and policy makers worked together to identify specific projects and allow contemporaneous rate recovery for these projects. Edward Graham, chairman, president and CEO of South Jersey Gas said, “It’s important to highlight that this program will have negligible effect on our customers’ bills. All it does is accelerate projects that we would have done anyway, and it’s arguable that doing these projects now will result in some cost benefits, so it’s questionable where in the long run it’s costing customers at all.” As a result of the project, PSE&G posted on April 16, 2009, “PSE&G extends offers to first of 900 people to work on electric and gas infrastructure projects.” In addition to New Jersey, other states including Colorado are looking at similar programs.

In 2008 AmerenUE filed an application with the Nuclear Regulatory Commission (NRC) for a second power plant at the Callaway County Missouri site. The investment would have been a major piece in mitigating a number of the above listed energy challenges. In addition, it would have been a ‘shot in the arm’ to the Missouri economy. For example, according to study data from Development Strategies, the plant would have generated between 3,000 and 4,000 construction jobs for nearly five years with about 400 permanent jobs after construction. During construction it would have provided more than a \$1 billion annual boost to Missouri’s economy. Taxes due during construction were estimated at more than \$125 million with an in service tax increase of nearly \$20 million per year. Policy issues stopped this project - every vertically regulated utility who applied to build a nuclear power plant has a funding plan outlined in state statute; except Missouri. Missouri’s prohibition to a state funding plan is called Construction Work in Progress or CWIP. It was prohibited by initiative petition in 1976 as a means to stop the funding of Callaway I. This type of plan allows for interest to be passed to rate payers during construction only after the utility has borrowed the money, spent the money and the regulatory authority has approved the expenditure. By paying as you go, customers save money. In the case of a large base load power plant, the savings can be in the billions of dollars. And, impact on rates is low. Ameren Missouri estimated that rate impact for 60 percent ownership of Callaway II would have been less than a 10 percent rate increase; this increase would probably be less than increases from other sources. This rate increase analysis is similar to other states like Georgia, who is moving forward with two nuclear plants. In a February 16, 2010 Bloomberg Business week summary, it said about the

Georgia project, “rates will gradually step up until ratepayers are paying an additional \$9.10 a month in 2017.” That equates to less than a 10% rate increase; likely less than other resource options.

One example of a smart grid investment is occurring in Kansas City through the KCP&L SmartGrid Demonstration project. The project serves as an industry blueprint for future smart grid implementation and will accelerate a realization that the “utility of the future” safely delivers reliable electricity with greater efficiency and improved environmental performance. This project will test new smart grid technologies and products including battery storage and study how the different system parts and options best integrate to benefit customers and the utility. By demonstrating an end-to-end smart grid, KCP&L will be able to test, evaluate and report on a complete suite of smart grid benefits - greater energy efficiency, reduced cost, improved reliability, more transparent and actionable information and a reduced environmental footprint. Many of the jobs required for this project require new skill sets for developing large scale battery storage, electric vehicle charging stations, and installation of solar panels in addition to energy efficiency auditors, weatherization contractors and meter installers.

e). *Outline of Proposed Solutions / Actions to Address Need, Problem, Opportunity.*

1. ***Acknowledge reality.*** A realization that Missouri is faced with an aging electric infrastructure that is approaching a period when it will need to be replaced. Failure to realize this fact and take necessary action will result in significant increases in costs and weaken one of Missouri’s key competitive advantages for attracting new business growth and investment.
2. ***Understand utilities’ role in Missouri’s economy.*** Electric utilities are more than a significant factor in site location decisions; they also serve as a major economic engine for new investment and job creation in Missouri. For every \$50 million a utility invests, nearly 1,000 jobs are created and \$2 million in tax revenue generated.
3. ***Understand the impact of pending EPA regulations.*** Proposed new environmental regulations may accelerate the closure of power generation facilities and require new investment in base load capacity and environmental controls. Such issues have the potential of placing Missouri’s energy future at risk.
4. ***Short- and long-term solutions.*** Now is the time to engage in productive public/private dialogue on strategies to address Missouri’s energy future. Consider the following:
 - a. A Missouri version of the New Jersey Model. Having a stakeholder driven process that identifies specific utility investments and provides for a fair, yet accelerated rate recovery process that encourages investment in infrastructure and new generation facilities, and helps stimulate new job creation here in Missouri.
 - b. Address key policies to improve utility bond rating. Improving bond ratings would increase investments and lower borrowing costs, thus saving rate payer cost in the process. Some concepts to improve utility bond rates and minimize or improve utility rates would be:
 - i. Address construction work in progress, or CWIP. This funding tool is recognized as one key to allowing investments and lowering overall costs to customers. If Missouri can’t invest in the lowest cost base-load power plants, the alternatives may be more costly in the long run.
 - ii. Extend a proven infrastructure tool to electric utilities. In 2003, the Missouri General Assembly approved an Infrastructure Replacement Surcharge which allowed natural gas companies and the state’s only investor owned Water Company to pass certain pipe replacement and upgrade expenses on to rate payers between rate cases. This process has worked well in terms of creating and maintaining jobs, maintaining system investment and improving reliability and service. Extending this proven tool to electric utilities in Missouri would have the same results.
 - iii. Shorten rate case cycles in Missouri to reduce the accompanying cost of capital issues associated with the extended process. Missouri has one of the longest rate case cycles in the country and shortening that process would allow for monies to be reinvested in the energy and water systems faster.
 - c. Continue to collaborate with the utility industry on new technologies that could lead to investment and job creation.
 - i. Missouri utilities are collaborating more than ever across public, private and business lines. Within a supportive regulatory framework, Missouri utilities are well suited to play a lead role in innovation and modernizing the state’s electric infrastructure through smart grid projects. In

addition to improving customer communication, these efforts will help improve reliability, create investments and jobs.

- ii. Develop a concerted effort within the state between utility groups and higher education to commercialize energy innovation through research and development opportunities.
- d. Establish policies that support significant investment in energy efficiency. Under a model that allows utilities to provide targeted energy efficiency rebates to customers, Missouri be can meet new demand in a cost effective manner that also produces local economic development. Energy efficiency rebates and incentives help the utility and all utility customers, but they specifically help end recipients. In the case of small and large utility customers, rebates allowing efficiency investments can lower energy bill and improve productivity.

Footnotes:

1 U.S. Department of Energy, “Secretary Chu Presents Smart Grid Vision and Announces \$144 Million in Recovery Act Funding to Transition to the Smart Grid,” news release, August 30, 2009, <http://www.energy.gov/news2009/8030.htm>.

2 Jim Tankersley, “Seeing green in energy efficiency,” Chicago Tribune, March 23, 2009.

3 Energy Future Coalition, The National Clean Energy Smart Grid: An Economic, Environmental, and National Security Imperative, <http://www.energyfuturecoalition.org>.