

ENERGY EFFICIENCY:

Missouri's Best Defense Against High Natural Gas Prices

Missouri spends \$11.7 billion annually on imported energy in the form of natural gas, coal and petroleum.

A 1% reduction in natural gas use could reduce wholesale natural gas prices by up to 13%.

The Midwest region, in general, lacks indigenous fossil fuel resources. Missouri's situation is worse than most, as Missouri is almost totally dependent on fossil fuels imported from other states and countries. At current prices, more than \$11.7 billion leaves the Missouri economy to pay for imported energy including natural gas, coal and petroleum. Almost one-quarter of this drain (\$2.7 billion) on Missouri's economy is due to the high price of natural gas. Missouri essentially imports 100% of the natural gas typically used for home heating, electricity generation and to power manufacturing facilities.



Natural Gas Crisis

While natural gas prices in Missouri are lower than several surrounding states, the natural gas crisis in Missouri is real — wholesale natural gas prices reached and sustained close to \$7 per Mcf during the winter of 2004, more than double the average price only four years ago.¹ Then, in the post-Katrina period, wholesale prices reached \$12 per Mcf in September 2005, and natural gas customers expected to see utility bill increases of more than 50% during the 2005-06 winter.² In addition to the families and businesses who suffer from these high natural gas prices, the state's overall economy suffers as well.

The reason for high and volatile natural gas prices is a matter of simple economics. In the past, supply has been consistently greater than demand,



Midwestern States Can Join Together to Increase Energy Efficiency Resulting in Decreased Demand AND Lower Prices.

keeping prices relatively low. Over the past several years, demand has increased faster than the available supply, creating a smaller cushion between the two. Due to the extremely tight balance between natural gas supply and demand, prices rise and become unstable.

There are two options to ease this tension and reduce prices:

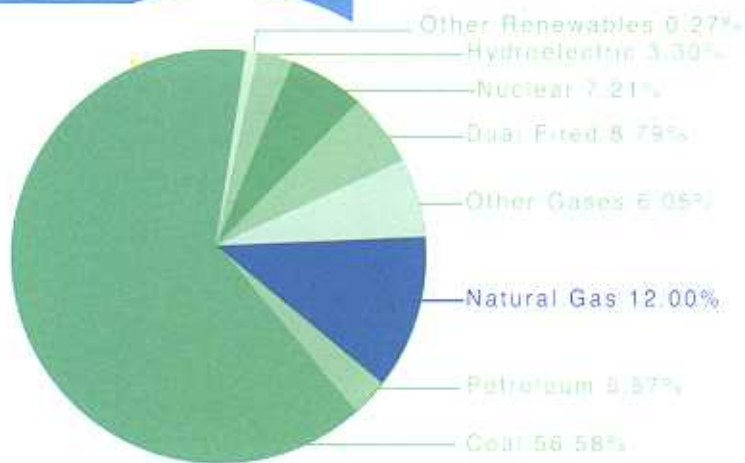
- Increase supply OR
- Decrease demand

Increasing supply is a long-term and potentially inadequate solution to the problem; current supplies are dwindling and new supplies take years to develop and bring to the market — and they are often more costly. In addition, increasing supplies from other areas of the country will only add to the \$2.7 billion dollar drain Missouri is already experiencing. On the other hand, decreasing demand is easy, cost-effective and can have an impact almost immediately.

¹ Kushler, M., D. York, and P. Witte. 2005. Examining the Potential for Energy Efficiency to Help Address the Natural Gas Crisis in the Midwest. Washington, DC: American Council for an Energy-Efficient Economy.

² Energy Information Administration. 2005. September 7th. Short-Term Energy Outlook.

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Regional Electric Industry Generating Capability by Primary Energy Source, 2002

Natural Gas vs. Electric Efficiency

When using energy efficiency as a tool to mitigate natural gas prices, it is important to include electric energy efficiency. Because natural gas is cleaner than more traditional forms of generating electricity, almost all new electric generating plants (94% nationally) built during the last five years are fueled by natural gas.¹ This has significantly increased the demand for natural gas, which drives prices even higher. Although natural gas accounts for a relatively small portion of Missouri's overall electricity generating capacity, the power plants that supply peak summer power generally rely on natural gas for fuel. Therefore, addressing both natural gas and electric efficiency will have a greater impact on natural gas prices than natural gas efficiency investments alone.

Energy Efficiency Investment

Achieving the benefits of a comprehensive energy policy requires consistent and stable funding. To achieve the savings discussed here, ACEEE recommends that Missouri's electric utilities invest \$55 million per year and natural gas utilities invest \$12 million per year. This is approximately 1% of annual electric utility revenue and 1% of natural gas utility revenue. By contrast, Missouri utilities currently are not required to invest in energy efficiency programs; last year, they voluntarily invested less than \$2 million.

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The answer for Missouri is clear — improve energy efficiency. This will not only provide direct energy and dollar savings, but will also decrease demand and reduce natural gas prices. Economic principles indicate that by reducing demand throughout the state, Missouri can help drive prices down. Those same economic principles also mean that if other states in the Midwest work together to achieve energy savings, the downward pressure on prices will be even greater. A 2005 report by the American Council for an Energy-Efficient Economy (ACEEE) documented that a reduction in natural gas and electricity use of just 1% per year could reduce wholesale natural gas prices by up to 13%.² These reductions in energy consumption are aggressive but achievable and would accomplish significant savings over several years.

Missouri is one of eight Midwest states encouraged to collaborate to reduce natural gas consumption and drive down prices. The Midwest Natural Gas Initiative aims to reduce regional consumption of natural gas by one percent per year for at least five years. Each participating state will convene an advisory group to examine ways the state can increase energy efficiency over the next five years. Governor Blunt has already created the Missouri Energy Task Force, chaired by PSC Chairman Davis.

¹ See Kuehler above.

² Cambridge Energy Research Associates, 2004 Press release, July 12, Cambridge, MA.

ENERGY EFFICIENCY

2011 Cumulative Energy Savings Per Missouri Household

\$393

Energy efficiency can directly save Missouri consumers & businesses \$630 million over 5 years.

Energy Efficiency Benefits

Missouri will benefit substantially from a well-planned and consistently funded energy efficiency program, and achieving the goals of the Midwest Natural Gas Initiative will have a significant impact on Missouri's \$2.7 billion natural gas dollar drain. Energy efficiency investments produce a variety of positive economic, environmental, social and security benefits for consumers and businesses:

Economic Benefits

Increasing energy efficiency throughout Missouri will have an immediate impact on the pocket books of families and businesses in the state. Energy efficiency improvements will reduce homeowners' and businesses' energy bills because they will be using less energy to achieve the same level of comfort or output. A moderately aggressive⁵ energy efficiency program can directly save consumers and businesses nearly \$630 million dollars on their natural gas and electric bills over the next five years.⁶ Investing in energy efficiency keeps money in Missouri and local economies because money is not being exported to other states and countries to pay for fuels.

Using less natural gas and electricity will have a direct impact on natural gas prices in Missouri. ACEEE estimates that if the Midwest actively invested in energy efficiency programs, Missouri natural gas consumers would save an additional \$230 million by 2011 because the cost of natural gas will decrease.⁷

Energy efficiency programs across the country continually prove their cost-effectiveness. A statewide program in Wisconsin conservatively estimates that for every \$1 invested in the program, the state receives \$3 in direct energy savings.⁸

The Midwest Natural Gas Initiative

The Midwest Natural Gas Initiative is a cooperative effort by 8 Midwest states to develop a multi-state energy efficiency initiative to decrease natural gas consumption by 1% per year for five years.

The Initiative is aimed at developing a regional plan for increasing energy efficiency while accommodating the diversity in policies and programs of individual states.

www.mwnaturalgas.org



⁵ A moderately aggressive energy efficiency program is designed to achieve a 1% per year reduction in consumption for at least 5 years.

⁶ See Kushler above.

⁷ See Kushler above.

⁸ State of Wisconsin, Focus on Energy Public Benefits Evaluation, Semiannual Summary Report, March 8, 2005.

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When other economic and environmental benefits are included, the benefits are estimated to be \$6 for every \$1 invested in the state. With good planning and additional investments in energy efficiency, Missouri can achieve similar results.

Environmental and Other Benefits
Energy costs can represent more than 40% of income for low-income families.⁹ With rising energy costs, these individuals are especially susceptible to shutoffs and disconnections. In 2004, energy bills for low-income families in Missouri were \$301 million more than what is generally accepted as affordable. Providing energy efficiency programs is an effective way to manage energy costs and reduce disconnections. In addition to individual consumers benefiting from these programs, the utility and its customers benefit from reduced costs resulting from fewer disconnections and unpaid bills.

Saving energy is the best way to avoid building new power plants, which are a major source of air pollution in the Midwest. In Iowa, where utilities have consistently invested in energy efficiency for the past 15 years, utilities have saved more than 1,400,000 MWh of electricity and six million Mcf of natural gas annually.¹⁰ This is enough electricity to power 140,000 homes for one year and enough natural gas to heat 60,000 homes for one year. These savings reduce pollution by 3,300 tons of nitrogen oxides (NOx), which causes smog; 1,000 tons of sulfur oxides (SOx), which causes acid rain; and 990,000 tons of carbon dioxide (CO2), which is attributed to global climate change. In other words, it is the equivalent of moving 144,500 cars from the road and planting 2.95 million trees.

Reliability and Security Benefits
Once it is created, electricity cannot be easily stored; if it is not used immediately, it is lost forever.

Every \$1 invested in energy efficiency creates \$6 in benefits.

As a result, the electricity infrastructure or "grid" is large and interconnected and requires constant monitoring to balance the supply of electricity with the demand by consumers. When demand is greatest, (usually on hot summer days) more electricity passes through the grid, which strains the transmission wires and potentially causes damage. Reducing demand through energy efficiency means that less electricity is traveling on the grid, which increases the grid's ability to deliver power safely, consistently and effectively.

Energy efficiency resources can bring additional benefits to areas where higher voltage transmission lines are needed due to increased demand or where a substation is reaching its maximum capacity. High voltage transmission lines carry electricity from the power plant to a substation in the local geographic area that it is needed. A substation lowers the voltage to a safe level and sends the electricity out to consumers on smaller distribution lines. Construction of new transmission lines faces many hurdles including extensive planning periods, a lengthy permitting process, and often, significant public opposition. Substations are expensive and require ongoing maintenance. Energy efficiency can delay or eliminate the need to make these upgrades, allowing more time to plan for and make these costly improvements when they are necessary.

**Missouri
natural gas
consumers
can save
more than
\$230
million by
2011 as a
direct result
of lower
natural gas
prices.**

⁹ Fisher, Sheehan and Cotton, *On the Brink*, 2005, Belmont, MA, 2005
¹⁰ Iowa Utilities Board website: <http://www.iuba.us.gov/etmrm.com/ubb/ee.html>

Conclusion

A strong Missouri policy supporting energy efficiency and backed by stable, consistent funding is the first step towards realizing the benefits of energy efficiency. However, a much greater impact can be made when states work together.

The Midwest has a history of collaborating to address challenges facing the region. The natural gas crisis is an opportunity for states to increase the impact of their energy efficiency investments. Collaborating at the regional level, through the Midwest Natural Gas Initiative, to develop and implement a comprehensive energy efficiency plan is the only action the Midwest region can take that will have an impact on the energy crisis in the short term.

During these tough economic times of high and volatile natural gas prices, declines in manufacturing jobs and state budget crunches, promoting energy efficiency will lead to:

- Lower energy bills for homes and businesses
- Greater economic activity and improved productivity
- Cleaner air and water
- Greater energy security
- Less dependence on foreign energy sources

Energy efficiency is a critical resource that policymakers can use to reduce natural gas prices. Missouri must take the appropriate steps to ensure that energy efficiency is a priority for the future of its businesses and citizens.

Policy Solutions

In order to realize the significant savings and benefits previously described, Missouri must take immediate action to implement a sound energy efficiency plan. The following policies could help Missouri achieve those savings:

• Establish a statewide energy efficiency program

- Create a stable, protected source of funding for energy efficiency based on a model that works for Missouri's regulatory and political atmosphere
- Require both natural gas and electric utilities to participate in the program
- Ensure program offerings for all utility customer classes (residential, commercial and industrial)
- Provide appropriate cost-recovery mechanisms for participating utility companies and consider offering incentives to those utilities that exceed their efficiency goals

• Increase energy efficiency in new and existing buildings

- Establish statewide commercial and residential energy codes to meet the ASHRAE 90.1-2001 and the 2004 International Energy Conservation Code (IECC) at a minimum
- Provide incentives to meet higher commercial and residential building standards including ENERGY STAR® and Leadership in Energy and Environmental Design (LEED)
- Adopt minimum efficiency standards for common appliances not covered by national standards

• Support Missouri DNR Energy Center Programming

- Support Energy Service Company (ESCO) Activities with State Facilities and Schools throughout the state
- Increase capitalization of the state's Energy Efficiency and Renewable Energy Set-Aside Loan Fund
- Adopt a Clean Energy Portfolio Standard for Missouri Utilities that utilizes indigenous energy resources including biomass
- Increase the state's matching funding for the Federal Low-Income Weatherization Assistance Program

• Lead by example

- Commit to reducing energy usage in all state facilities by implementing energy efficiency standards for buildings, equipment purchases and vehicle fleets
- Extend this concept to all facilities that are funded by state dollars and all facilities where utility bills are paid by taxpayers

About MEEA

The Midwest Energy Efficiency Alliance (MEEA) is a collaborative network whose purpose is to advance energy efficiency in the Midwest in order to support sustainable economic development and environmental preservation.

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