

**BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI**

In the Matter of the Application of Kansas City)
Power & Light Company for Approval to Make)
Certain Changes in its Charges for Electric) Case No. ER-2010-0355
Service to Continue the Implementation of its)
Regulatory Plan.)

In the Matter of the Application of KCP&L)
Greater Missouri Operations Company for) Case No. ER-2010-0356
Approval to Make Certain Changes in its)
Charges for Electric Service)

MISSOURI GAS ENERGY’S INITIAL POST-HEARING BRIEF

COMES NOW Southern Union Company d/b/a Missouri Gas Energy (MGE), and, as its Initial Post-Hearing Brief, states as follows to the Missouri Public Service Commission (the “Commission”):

I. Introduction.

Demand side management (“DSM”) and energy efficiency programs have historically focused on appliance efficiency. A more robust DSM and energy efficiency approach should also focus on fuel choice. The choice of fuel can have significant implications beyond solely the measurement of end-use appliance efficiency. The targeted fuel switching program proposed here offers the Commission an innovative way to reduce electricity use by targeting appliances in which the use of electricity is least efficient. The proposed fuel switching program promotes the “right fuel for the right use” by lowering barriers that can inhibit customers from using the most efficient energy for end-use applications.

The fuel switching program proposed by MGE will put more accurate information in the hands of consumers, thereby allowing them to make more informed energy choices. This fuel switching program would serve as just one of many DSM and energy efficiency programs offered by the utility to reduce electric use. An innovative program like this would send a

particularly appropriate message in a rate case driven by a coal-fired plant costing well over a billion dollars – a coal-fired plant necessitated by increased electric demand. Like any other DSM program, a fuel switching program offers tangible benefits to both customers and KCP&L/GMO by reducing electric demand and extending the time needed to build additional electric generating facilities.

This targeted fuel switching program is also consistent with the Commission's encouragement of energy efficiency initiatives for utilities – incentive programs which reduce barriers to consumer purchases of more energy efficient appliances. A fuel switching program would leverage the energy efficiency efforts of KCP&L/GMO and MGE to the benefit of the companies, customers, and the environment.¹ Fuel switching programs have started to gain traction among various State Commissions and have been successful with both combination electric/natural gas utilities as well as stand-alone electric companies across the country.² This proposed fuel switching program should be adopted now for KCP&L/GMO.

II. Fuel Choice and the Full Fuel Cycle.

The choice of whether to use electricity or natural gas for certain appliances has profound implications for consumers, the environment, and for policymakers. MGE's proposed program solely targets the most inefficient electric appliances – electric water heaters and electric resistance space heating.³ As both Staff witness Rogers and MGE witness Reed agree,

¹ There is precedent for a combined energy efficiency program in Missouri, as both MGE and KCP&L/GMO work together on the Home Performance with Energy Star Program ("HPWES Program). The HPWES Program coordinates residential energy assessment audits and offers bill credits from both KCP&L/GMO and MGE. Like the proposed fuel switching program in this case, the HPWES program is designed to improve energy efficiency and comfort while helping to protect the environment. (See KCPL Tariff Sheet No. 43T <http://www.kcpl.com/about/MORates/Sched43.pdf>, GMO Tariff Sheet beginning at No. R-64.01 <http://www.kcpl.com/about/MoERules.pdf>, and MGE Tariff Sheet beginning at No. 102 found at <http://d352119.win159.gsi-host.net/Tariffs/TFPromotionalPractices.pdf>).

² Fuel switching programs have been approved in Washington, Oregon, Texas, Idaho, and Pennsylvania, among other states. See KCP&L Exhibit 2201 and GMO Exhibit 2201 at p. 20. (Reed Direct Testimony). In addition, a data request completed by KCP&L/GMO witness Goble shows that 13 of 14 states that considered fuel switching programs authorized them. See Hearing Exhibit KCP&L/GMO 2206.

³ See Exhibits KCP&L 2201 and GMO 2201 at p. 19. The proposed fuel switching program would not include KCP&L/GMO customers who use an electric heat pump.

there is growing momentum at the national level and within some states for adopting the “full-fuel-cycle” approach as the appropriate method for evaluating the relative advantages of a particular fuel for certain end-use applications.⁴ Providing customers with information on the full fuel cycle approach allows them to choose the most efficient fuel source for their home appliances.

A. The Full Fuel Cycle.

The relative efficiencies of fuel choice are best illustrated by the “full fuel cycle” method. Traditionally, appliance efficiency measurements have been “site based,” in that they only consider the energy efficiency at the site where the energy is consumed.⁵ In contrast, the full fuel cycle approach measures energy consumption over the entire cycle of energy use –from extraction/production to transmission, distribution, and finally at the site where the energy is used (as in an appliance).⁶ The full-fuel cycle approach considers all of the energy consumed to power the end use application including greenhouse gas emissions.⁷ A pending recommendation to the Department of Energy is that the full fuel cycle approach be adopted nationally to provide more comprehensive information to consumers through labels and other means.⁸ The full fuel cycle approach is particularly effective in allowing comparisons between appliances that use more than one fuel source, such as natural gas water heaters vs. electric water heaters.⁹

The full fuel cycle approach allows consumers to base their fuel choice decisions using the following information:

⁴ See KCP&L Exhibit 2203 and GMO Exhibit 2203 both at p.3 (Reed Surrebuttal Testimony).

⁵ See KCP&L Exhibit 2201 and GMO Exhibit 2201 at p. 5 (Reed Direct), quoting “A Comparison of Energy Use, Operating Costs, and Carbon Dioxide Emissions of Home Appliances,” American Gas Association Energy Analysis, EA 2009-3, Oct. 20, 2009.

⁶ See KCP&L Exhibit 2201 and GMO Exhibit 2201 at pp. 5-6 (Reed Direct).

⁷ *Id.* at p. 6.

⁸ See KCP&L Exhibit 2201 and GMO Exhibit 2201 p. 6-7, citing “Review of Site (Point of Use) and Full-Fuel-Cycle Measurement Approaches to DOE/EERE Building Appliance Energy Efficiency Standards,” National Research Council, May 15, 2009, p. 10.

⁹ *Id.*

- For electricity, there are energy losses of about 70% to 75% in acquiring the primary fuel and in generation, transmission, and distribution.¹⁰ Some studies show that electricity on average delivers to the consumer only 31.9% of the energy produced.¹¹
- Coal fired electric generation is even less efficient than that average, delivering only 29.3% of the energy produced to the end-use customer.¹²
- Natural gas is approximately 91.9% efficient from wellhead to meter. For every 100 MMBTu of energy produced, almost 92 MMBtu is delivered to the consumer.¹³
- The energy losses with electricity result in natural gas being far more efficient than electricity for certain end-use applications based on the full fuel cycle analysis.¹⁴
- A site-based approach to energy efficiency may claim that an electric water heater is 90% efficient and that a natural gas water heater is 70% efficient. This does not, however, tell the complete story of energy losses from generation/extraction to use.¹⁵
- When electric energy losses of 70-75% are factored in for electricity appliances, the overall energy efficiency of that appliance plummets to 27% while a 70% efficient natural gas appliance remains high – at 64% efficient.¹⁶

While the full fuel cycle analysis would be highly informative and beneficial for consumers, it is not necessary for the Commission to adopt the full fuel cycle method in order to permit the limited fuel switching initiative proposed by MGE.¹⁷ The full fuel cycle approach is not a prerequisite to the adoption of this program. MGE presents the full fuel cycle analysis to provide a context for the Commission, to show that this methodology provides better information to consumers, and to show the relative merits of natural gas for certain appliances.

B. Economic Benefits of Fuel Switching for Consumers.

Natural gas water heating and space heating appliances offer tangible economic benefits to consumers. This is premised on the simple fact that it is more efficient to directly heat water or air with natural gas rather than using electric resistance heat to do so. As

¹⁰ See KCP&L Exhibit 2201 and GMO Exhibit 2201 at p. 7, citing the National Research Council review cited in FN 8.

¹¹ KCP&L Exhibit 2201 and GMO Exhibit 2201 at p. 9.

¹² Id.

¹³ Id.

¹⁴ See FN 10-13.

¹⁵ See KCP&L Exhibit 2201 and GMO Exhibit 2201 at p. 7.

¹⁶ Id.

¹⁷ See KCP&L Exhibit 2203 and GMO Exhibit 2203 at pp. 14-15 (Reed Surrebuttal). Mr. Reed notes that Connecticut, Texas, and Washington did not adopt the full fuel cycle method before permitting fuel switching programs for certain utilities.

illustrated in Mr. Reed's testimony, using natural gas rather than electricity in certain appliances can result in significant cost savings to consumers under the full fuel cycle analysis. A consumer switching from electricity to natural gas would save approximately \$606 (GMO)¹⁸ and \$536 (KCP&L)¹⁹ for space heating and up to \$200 (GMO)²⁰ and \$172 (KCP&L)²¹ per year for water heating. Providing this information to consumers as part of this program will permit them to make wise energy choices that will result in tangible savings.

C. Environmental Benefits of Fuel Switching.

A fuel switching program also makes sense in an era of increased attention to greenhouse gas emissions. Natural gas is the cleanest burning fossil fuel. As Mr. Reed explains, carbon dioxide emissions are about 36 percent lower for natural gas residences compared to an all-electric home²² and annual CO2 emissions for natural gas appliances are significantly lower than electric appliances.²³ In addition, the CO2 emission rate for coal is almost twice that of natural gas for the generation of electricity in Missouri.²⁴ By encouraging targeted fuel switching to natural gas, this program would contribute to the reduction of CO2 emissions by reducing the amount of electric generation required and reducing the emissions associated with that generation.²⁵ This is particularly true for companies like KCPL/GMO which produce 80% of its electricity with coal.²⁶

¹⁸ GMO Exhibit 2201, p. 12.

¹⁹ KCP&L Exhibit 2203, p. 23. As noted in Mr. Reed's surrebuttal testimony, there was a calculation error in his direct testimony that was subsequently corrected in his surrebuttal testimony. Replacement schedules were also filed in his surrebuttal testimony.

²⁰ GMO Exhibit 2201 at p. 12.

²¹ KCP&L Exhibit 2203 at p. 23. As noted in Mr. Reed's surrebuttal testimony, there was a calculation error in his direct testimony that was corrected in his surrebuttal testimony. Replacement schedules were also filed in his surrebuttal testimony.

²² See KCP&L Exhibit 2201 and GMO Exhibit 2201 at p. 12, citing "A Comparison of Energy Use, Operating Costs, and Carbon Dioxide Emissions of Home Appliances," American Gas Association, Energy Analysis, EA 2009-3, October 20, 2009, p.4.

²³ *Id.*, citing to p. 11 of the AGA report cited in FN 22. CO2 emissions were 6.4 metric tons for natural gas appliances and 10.1 metric tons for electric appliances.

²⁴ See KCP&L Exhibit 2201 and GMO Exhibit 2201 at p. 14, citing to the EPA's eGrid 2007 database.

²⁵ See KCP&L Exhibit 2201 and GMO Exhibit 2201 at p. 15.

²⁶ *Id.*

D. Fuel Switching Program will Assist with Extending Generation Requirements.

While no DSM program serves as a complete fix to decrease electric demand, this program would serve as one of many programs encouraged by the Commission and offered by KCP&L/GMO to decrease the use of electricity. Like other DSM programs, a fuel switching program has strong potential to assist with reducing or deferring KCP&L/GMO's capital investments in transmission and generation capacity.²⁷

III. Why the Commission Should Get Involved.

While there are demonstrated benefits of a targeted fuel switching program for consumers and the environment, consumers may be reluctant to switch from electricity to natural gas appliances due to higher up-front costs (including the cost of installing natural gas interior piping, additional ductwork, as well as the higher cost of natural gas appliances) instead of focusing on lower operating costs and environmental benefits.²⁸ This program provides an opportunity for Commission involvement because consumers have imperfect information; consumers are not sufficiently aware of the financial benefits from switching to natural gas, and they may not understand the broader environmental impact of using an inefficient fuel source.²⁹ The Commission's approval of this program will equip consumers with better information, enabling them to make informed energy choices that will save them money.

In this regard, a targeted fuel switching program is very similar to programs currently offered by utilities to encourage consumers to switch to higher efficiency appliances. These programs address the higher cost of those appliances by providing consumer incentives that

²⁷ Id., at p. 30-31, which describes this and other benefits of the proposed program to KCP&L/GMO.

²⁸ Id. at p. 15-17.

²⁹ See KCP&L and GMO Exhibits 2203 at p. 12-13. The National Regulatory Research Institute report cited in Mr. Reed's surrebuttal testimony provides a good overview of circumstances in which regulators should get involved to help promote rational and efficient customer choices. "Electric to Gas Substitution, What Regulators Should Do," National Regulatory Research Institute, Ken Costello, May 29, 2001 at p. 8-9. See also pp 15-17 of KCP&L and GMO Exhibits 2201 (Mr. Reed's direct testimony), citing a July 2009 McKinsey and Company study which describes barriers to customer participation in energy efficiency and conservation programs, including up-front costs, customer behavioral issues, and misaligned incentives.

reduce the up-front cost of those appliances. Like the proposed fuel switching program, utilities are permitted to promote their energy efficiency programs in an effort to raise customer awareness and to encourage the use of more energy efficient appliances. The proposed fuel switching program here is designed to use similar methods and harness the capabilities of two utilities in an effort to promote energy efficiency and environmental conservation.

IV. The Proposed Fuel Switching Program.

Under the proposed program, both KCP&L/GMO and MGE would offer financial incentives with the aim of converting inefficient electric appliances with fuel-efficient natural gas replacements. KCP&L/GMO would offer financial incentives in the form of rebates or bill credits to residential and multi-family customers to encourage fuel switching from electric resistance and water heating to natural gas.³⁰ The fuel switching program would be available to current MGE customers as well as customers in MGE's service area who currently do not have natural gas service.³¹ In turn, MGE would continue to offer financial incentives to customers for the purchase of energy efficient natural gas appliances through its existing energy efficiency programs.

The KCP&L/GMO rebates/bill credits would serve to defray some of the cost of installing interior piping and ventilation ductwork and other installation costs of new appliances. The proposed rebates follow:³²

³⁰ GMO Exhibit 2201 at pp. 21-22 and KCP&L Exhibit 2201 at p. 22. As noted in MGE's testimony, if a customer does not have gas service and does not have a natural gas line to their home, MGE's currently effective tariff provisions regarding facilities extensions would be used. Under this tariff, customer contributions may be required if the extension exceeds 60 linear feet. See KCP&L Exhibit 2201 and GMO Exhibit 2201 at pp. 22-23.

³¹ Id.

³² See KCP&L Exhibit 2201 at pp. 23-24 and GMO Exhibit 2201 at p. 23. The amounts are designed to defray a portion of the installation costs.

Appliance	KCP&L/GMO Rebate
Water Heater	\$700
Space Heater	\$1,000
Water Heater and Space Heater	\$1,200

These rebate amounts are consistent with those offered by other utilities with fuel switching programs.³³ Other companies have offered between \$250 and \$950 for water heater conversion costs, \$500 - \$2,500 for furnace conversion costs, and up to \$3,950 for both.³⁴

MGE would also offer incentives, currently available through various MGE energy efficiency programs, to encourage customers to install energy efficient appliances when they switch from electricity to natural gas appliances. Combined with KCP&L/GMO’s conversion rebates, this program will offer a powerful incentive for consumer change that will ultimately reduce the use of electricity and will improve the environment. MGE’s current incentive levels are as follows:³⁵

Appliance	MGE Incentives
Water Heater-Tank	\$40
Water Heater-Tankless	\$200
Gas-fired Furnace	\$200

MGE’s estimates for the market potential of a fuel switching program were determined by using participation rates of another utility with a similar program. MGE estimates that 800 customers may participate for GMO³⁶ and 400 customers may participate from the KCP&L

³³ See KCP&L Exhibit 2201 at p. 25 and GMO Exhibit 2201 at p. 24, referring to rebates offered by Puget Sound, Avista, and TECO.

³⁴ Id.

³⁵ See KCP&L Exhibit 2201 and GMO Exhibit 2201 at p. 25.

³⁶ See GMO Exhibit 2201, p. 27.

service territory.³⁷ GMO's total annual program spending for this fuel switching program is estimated at \$596,000 and MGE's spending is estimated at \$51,200 for energy efficiently appliance incentives plus the cost to install 800 service lines (approximately \$1,416,000).³⁸ KCP&L's program spending for this fuel switching program is estimated at \$298,000 and MGE's spending is estimated at \$25,600 for energy efficient appliance incentives plus the cost to install 400 service lines (approximately \$708,000).³⁹ The service line estimate may be high, considering that customers may already have service lines or may already be MGE customers. For KCP&L and GMO, these estimated program expenditures are ** ____%** (KCP&L) and ** ____%** (GMO) of the program budget for their existing demand response, energy efficiency, and affordability programs.⁴⁰ MGE fully supports rate recovery for KCP&L and GMO for any funds spent under these proposed programs.

V. KCP&L/GMO Witness Goble's Testimony Should be Discounted.

The Commission should heavily discount the testimony of KCP&L/GMO witness Goble, as he displayed a remarkable lack of understanding of key issues in the case and his testimony contained material misstatements and omissions.

- In the hearing, Mr. Goble clearly had no idea that MGE does not have a volumetric rate structure for residential customers – the very customers that would be offered incentives under the fuel switching program.⁴¹
- Mr. Goble conducted no analysis of – and seemed unaware of - KCP&L's or GMO's other DSM programs.⁴² This omission is particularly puzzling given Mr. Goble's dire warning that Commission adoption of MGE's proposed fuel switching program would "seriously undermine" existing DSM programs and would "stifle development and implementation" of new programs.⁴³ It is

³⁷ See KCP&L Exhibit 2201 at p. 27.

³⁸ See GMO Exhibit 2201 at pp. 27-28.

³⁹ See KCP&L Exhibit 2201 at pp. 27-28.

⁴⁰ See KCP&L and GMO Exhibits 2201 at p. 28.

⁴¹ Transcript at p. 3038-40. Note there were transcription errors appearing on these pages. The terms "strict rate design" should read "straight fixed variable rate design," "low building" should read "load building" and "volume metric" should read "volumetric."

⁴² Transcript at p. 3042, lines 12-17. The Q & A follows: Q. If there have been savings from DSM programs? A. I would assume there had been. Q. But you don't know? A. I haven't analyzed the DSM programs, the other DSM programs that the company has, no." Mr. Goble contradicted his own testimony on this topic later in the hearing on p. 3043 of the Transcript, lines 11-19 in which he stated that he "generally" looked over "some of the programs."

⁴³ See KCP&L and GMO Exhibits 2201 at p. 37.

reasonable for the Commission to wonder what basis Mr. Goble had in making these statements if he had no knowledge of KCP&L's DSM programs.

- Mr. Goble's testimony contained the misleading statement that "[a]lthough a number of other state regulatory commissions have addressed the subject of electric- to-gas substitution, Mr. Reed fails to mention *that most have examined the subject and have chosen to reject electric-to-gas substitution*"⁴⁴ (emphasis added). For example,
 - Mr. Goble clearly made the statement in his written testimony that most states that have considered fuel switching have rejected it. By his own response to a data request⁴⁵ and his testimony at the hearing,⁴⁶ this is clearly not the case. In fact, only one state out of fourteen had rejected a fuel switching program proposal while the other thirteen states authorized the programs.⁴⁷ In his written testimony, Mr. Goble attempted to leave the Commission with the opposite impression of actual facts. The difference between most Commissions "rejecting" fuel switching compared to the reality – that most Commissions that have considered it have allowed it – is large enough for the Commission to hesitate at the remainder of Mr. Goble's testimony in these cases.
- In the hearing, when asked whether he read the reports cited in Mr. Reed's testimony, Mr. Goble stated, "No, not all in their entirety. Some."⁴⁸ It is difficult to give Mr. Goble's testimony serious consideration if he did not bother to read the testimony and exhibits to which he was responding.
- Mr. Goble was completely unaware of MGE and KCP&L's collaborative energy efficiency efforts with the Home Performance with Energy Star Program.⁴⁹ MGE's collaborative efforts with KCP&L/GMO in another program should have given Mr. Goble some assurance that non-combination utilities can work constructively and successfully in energy efficiency efforts.
- Mr. Goble failed to provide any quantitative support or other documentation for many of his calculations in his testimony,⁵⁰ leading the reader/fact finder to wonder how he reached his conclusions. Accordingly, his conclusions simply are not verifiable nor do they provide evidence upon which the Commission can rely. When he provided some calculation through data requests, it became apparent that Mr. Goble used the sort of "hide-the-ball" approach that makes his analysis suspect. For example, when Mr. Goble compared the cost of operating

⁴⁴ See KCP&L Exhibit 26 and GMO Exhibit 14 at p. 7-8.

⁴⁵ Hearing Exhibit No. 2206, (MGE DR 7-8) which asked Mr. Goble to identify those State Commissions which rejected fuel switching proposals.

⁴⁶ Transcript at 3050-3051.

⁴⁷ Hearing Exhibit No. 2206.

⁴⁸ Transcript, p. 3066 at lines 11-13.

⁴⁹ Transcript, p. 3073 at lines 13-20.

⁵⁰ In KCP&L Exhibit 26 and GMO Exhibit 14, Mr. Goble refers to a "crude TRC test" that he calculated (p. 26), Ratepayer Impact Tests, and Total Participant Tests with no supporting calculations.

water heaters, he included the full gas distribution monthly fixed charge, without any consideration of the electric customer charge.⁵¹ This biased approach obviously and unduly favors the electric appliance and skewed the results.⁵² His testimony simply does not supply the sort of evidence that the Commission needs to rely upon in this matter.

VI. CONCLUSION

The provisions of the Public Service Commission Law are to "be liberally construed with a view to the public welfare, efficient facilities and substantial justice between patrons and public utilities."⁵³ Based upon the evidence presented to the Commission, the fuel switching program proposed by MGE is in the public interest and should be approved by the Commission.⁵⁴

Further, the Missouri Energy Efficiency Investment Act⁵⁵ states that "it shall be the policy of this state to value demand side investments equal to traditional investments in supply and delivery infrastructure and allow recovery of all reasonable and prudent costs of delivering cost-effective demand-side programs."⁵⁶ In that Act, the legislature has encouraged electric companies to make significant expenditures on energy efficiency and conservation measures and has given the Commission the authority to implement demand-side programs.⁵⁷ This proposed fuel switching program would further this goal to ensure that utility financial incentives are aligned to help customers use energy more efficiently.

The proposed fuel switching program promotes the "right fuel for the right use" by lowering barriers that can inhibit customers from using the most efficient energy for end-use

⁵¹ See KCP&L Exhibit 2203 at p. 27 and GMO Exhibit 2203 at p. 30.

⁵² *Id.*

⁵³ Mo. Rev. Stat. Section 386.610.

⁵⁴ See also Missouri Public Service Commission Case No. EM-2007-0374, *In the Matter of the Joint Application of Great Plains Energy Incorporated, Kansas City Power and Light Company, and Aquila, Inc., for Approval of the Merger of Aquila, Inc., with a Subsidiary of Great Plains Energy Incorporated and Other Related Relief*, July 1, 2008 (describing the public interest standard), cited in KCP&L Exhibit 2201 and GMO Exhibit 2201 at p. 42.

⁵⁵ Mo. Rev. Stat. Section 393.1075

⁵⁶ *Id.* at 393.1075.3.

⁵⁷ *Id.* at 393.1075.4., "The commission shall permit electric corporations to implement commission-approved demand-side programs proposed pursuant to this section with a goal of achieving all cost-effective demand-side savings."

CERTIFICATE OF SERVICE

I hereby certify that copies of the foregoing have been mailed, hand-delivered, transmitted by facsimile, or electronically mailed to all counsel of record this 10th day of March, 2011.

/s/ Todd J. Jacobs
Todd J. Jacobs