Exhibit No.: MGE-628

Issue: Residential Rate Design
Witness: F. Jay Cummings
Type of Exhibit: Direct Testimony
Sponsoring Party: Missouri Gas Energy
Case No.: ER-2012-0175
Date Testimony Prepared: August 21, 2012

MISSOURI PUBLIC SERVICE COMMISSION

CASE NO. ER-2012-0175

DIRECT TESTIMONY

OF

F. JAY CUMMINGS

ON BEHALF OF

MISSOURI GAS ENERGY

August 21, 2012

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DIRECT TESTIMONY OF F. JAY CUMMINGS

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AUGUST 21, 2012

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is F. Jay Cummings. My business address is 3625 North Hall Street, Suite 750, Dallas, Texas 75219.

Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?

A. I am a Senior Economist with Ruhter & Reynolds, Inc., Consulting Economists.

Q. PLEASE SUMMARIZE YOUR EDUCATION AND EXPERIENCE.

A. I have a B.A. degree with a major in economics from Colgate University and a Ph.D. in economics from the University of Virginia. I have more than 27 years of utility regulatory experience gained through private and public sector positions. Since 2003, I have provided regulatory support services to the energy industry as a Senior Economist with Ruhter & Reynolds (2005 - present), an Executive Consultant with R. J. Covington Consulting, LLC (2003-2005) and as a Principal with Navigant Consulting, Inc. (2001-2003). Prior to Navigant Consulting, I was employed by Southern Union Company for more than 11 years. I joined Southern Union as Southern Union Gas' Director of Rates and Regulatory Affairs and became Vice President later that year. When my regulatory responsibilities for

Southern Union expanded to include its Missouri properties in 1994, I became Vice President, Pricing and Economic Analysis, a position I held until leaving Southern Union in 2001.

Prior to joining Southern Union, I was employed by the Arizona Corporation Commission for six years. I held positions as the Utilities Division Assistant Director (1988-1991); Chief, Economics and Research Section (1985-1988); and Chief, Economics and Rates Section (1985). My work with the Arizona Corporation Commission covered regulation of electric, gas, telecommunications and water utilities.

From 1973 through 1985, I was on the economics faculties of George Mason University (1973 - 1975) and the University of Texas at Dallas (1975 - 1985). My teaching and research focused on applied microeconomic analyses, which resulted in professional journal publications and conference and seminar presentations. I have submitted testimony in regulatory proceedings in Arizona, Arkansas, Massachusetts, Missouri, Oklahoma, Texas, and Washington.

1. TESTIMONY PURPOSE AND RECOMMENDATIONS

Q. SUMMARIZE THE PURPOSE OF YOUR TESTIMONY.

A. I have been retained by Southern Union Company, d/b/a Missouri Gas Energy ("MGE") to analyze the Residential rate designs of Kansas City Power & Light

Company Greater Missouri Operations ("KCP&L-GMO") - MPS ("GMO-MPS") and L&P ("GMO-L&P") and to provide recommendations regarding these rate designs to the Missouri Public Service Commission ("Commission") in this case. My analysis and recommendations pertain to (1) cost-based, revenue-neutral Residential rate adjustments at current revenue, (2) the availability of separate Residential Electric Space Heating schedules, and (3) the design of energy charges for Residential services.

Q. PLEASE SUMMARIZE YOUR RECOMMENDATIONS.

A. First, for both GMO-MPS and GMO-L&P, I recommend revenue-neutral adjustments in current rates on the Residential schedules based on GMO-MPS' and GMO-L&P's cost of service results. These revenue adjustments remove the seasonal inequities in the collection of current revenue by equalizing the Residential rates of return at current rates in the summer and winter. The adjustments also remove the current inequities in the collection of winter revenue from Residential customers taking service on different rate schedules by equalizing the winter rates of return at current revenue on the various Residential rate schedules.

Second, based on ratemaking and public policy considerations, I recommend that the separate Residential Electric Space Heating schedules be eliminated, and the customers served under these schedules be transferred to consolidated General

Use schedules.[1] In the alternative, I recommend that the Residential Electric Space Heating services be scheduled for elimination in a subsequent rate case and that current rates for these services be adjusted based on the recommended Residential revenue-neutral shift in this case. In addition to freezing the prospective availability of these services in this case, this alternative recommendation includes tariff language regarding availability to ensure the effectiveness of freezing the schedules and to simplify their subsequent elimination.

Third, I provide recommendations pertaining to the design of Residential energy charges based on (1) my revenue-neutral revenue adjustments and (2) the revenue change that is ultimately approved by the Commission. I recommend that the winter declining blocks be retained with the current rate differences among blocks, i.e., cents per kWh, for those schedules with blocked rates. If my recommendation to eliminate Electric Space Heating is accepted, the current Electric Space Heating rate blocks and rate block differences are used in the consolidated General Use schedules.[2] If my alternative recommendation to freeze Electric Space Heating is accepted, I recommend that the current winter rate differences among blocks, i.e., cents per kWh, be retained on the respective

[1] Both GMO-MPS and GMO-L&P offer the following Residential services: General Use, Electric Space Heating, and Other Use. GMO-MPS also offers a Time of Day service, and GMO-L&P has a Space/Water Heating-Separate Meter schedule that was frozen in June 1995.

[2] As explained later in my testimony, the rates associated with this recommendation cannot be developed for GMO-L&P because KCP&L-GMO has not provided the necessary billing determinants in response to MGE data requests. As a result, the consolidated GMO-L&P General Use schedule must be developed with a uniform winter energy charge for all usage.

schedules. I recommend no change in the summer rate structures, with all current energy charges adjusted by the same per kWh amount to reflect the summer revenue change required by the recommended revenue-neutral adjustments.

Regarding the Commission-approved base revenue change, I recommend that the base revenue change be assigned to the winter and summer to maintain the equalized seasonal rates of return for the Residential class resulting from my recommended revenue-neutral adjustments to current revenue based on GMO-MPS' and GMO-L&P's cost of service results. The portion of the base revenue change to be collected from energy charges in each season is divided by each season's kWh and added to my recommended current, adjusted energy charges in all Residential schedules.[3]

2. CURRENT AND PROPOSED KCP&L-GMO RESIDENTIAL RATES

Q. PLEASE DESCRIBE CURRENT GMO-MPS AND GMO-L&P RESIDENTIAL RATES.

A. Schedule FJC-1A, columns (b) - (e) provides the current Residential rates for GMO-MPS. Schedule FJC-1B, columns (b) - (e) provides the current Residential rates for GMO-L&P.

[3] My recommendations do not address Residential service charge changes to be implemented with the Commission-approved base revenue change. Rather, I address required energy charge changes after recognizing the revenue changes resulting from approved Residential service charge changes.

I describe General Use and Electric Space Heating rates that encompass virtually all of customers in GMO-MPS' and GMO-L&P's Residential class.[4] The summer energy rates are the same for General Use and Electric Space Heating for GMO-MPS and for GMO-L&P.[5] GMO-MPS has an inverted, three-block summer energy rate structure, while GMO-L&P has a uniform summer energy rate for all usage.

Summer energy charges are higher than winter energy charges in corresponding schedules. In the winter, General Use and Electric Space Heating for GMO-MPS and GMO-L&P have declining block energy charges. For GMO-L&P, Electric Space Heating winter energy charges are lower in each rate block than the General Use winter energy charges. For GMO-MPS, Electric Space Heating winter energy charges are lower than General Use winter energy charges in the rate blocks after the identically-priced first 600 kWh. Stated differently, average winter energy prices, i.e., the winter energy charge at a specific kWh usage based on the blocked rates divided that kWh usage, are lower for Electric Space Heating

[4] KCP&L-GMO Application, Appendix 2 provides the following average number of customers by schedule:

	Customers	Percent		Customers	Percent
GMO-MPS			GMO-L&P		
General Use	138,936	64.9%	General Use	35,519	62.4%
Electric Space Heating	74.478	34.8	Electric Space Heating	19,389	34.1
Other Use	706	0.3	Space/Water Heating-Separate Meter	51	0.1
Time of Day	0	0	Other Use	1,946	3.4

[5] For GMO-L&P, the monthly service charges are the same for General Use and Electric Space Heating. These charges are higher than the monthly service charge for Space/Water Heating-Separate Meter, which has been frozen since 1995. For GMO-MPS, the monthly service charges are the same for General Use and Electric Space Heating.

than for General Use for GMO-MPS and GMO-L&P (above 600 kWh for GMO-MPS).

Q. DOES KCP&L-GMO PROPOSE TO RETAIN THE LOWER AVERAGE WINTER ENERGY PRICES FOR ELECTRIC SPACE HEATING?

A. Yes. In fact, KCP&L-GMO requests an increase in the current winter energy price differences between Electric Space Heating and General Use through its proposed rates.[6] For example, GMO-MPS' current average winter energy price is 1.20 cents per kWh lower for Electric Space Heating than General Use at 1400 kWh.[7] This difference grows to 1.28 cents per kWh under its proposed rates. GMO-L&P's current average winter price is 1.63 cents per kWh lower for Electric Space Heating than General Use at 1800 kWh.[8] This difference grows to 1.77 cents per kWh under its proposed rates. This same pattern occurs at other kWh usage levels (more than 600 kWh for GMO-MPS).

Q. DO YOU HAVE ANY OBSERVATIONS REGARDING THE HISTORY OF KCP&L-GMO'S GENERAL USE AND ELECTRIC SPACE HEATING WINTER ENERGY CHARGES?

A. Yes. Residential rates set in KCP&L-GMO rate cases since 2004 generally resulted from stipulations and across-the-board increases. I have two

[6] KCP&L-GMO's proposed rates are contained in KCP&L-GMO Application, Appendix 1.

[7] For GMO-MPS, average winter usage is 1394 kWh for Electric Space Heating based on KCP&L-GMO's Response to Data Request MGE-4.

[8] For GMO-L&P, average winter usage is 1795 kWh for Electric Space Heating based on KCP&L-GMO's Response to Data Request MGE-5.

observations on the resulting historical pattern of rate changes. First, the winter declining block structure has become more pronounced, i.e., greater per kWh differences between rate blocks, over time for both General Use and Electric Space Heating. These results are shown on lines 1-4 of Schedule FJC-2A for GMO-MPS and of Schedule FJC-2B for GMO-L&P. Schedule FJC-2A, column g and Schedule FJC-2B, column h show that KCP&L-GMO's proposed rates continue this trend for both GMO-MPS and GMO-L&P.

Second, the rate advantage of Electric Space Heating over the General Use has generally increased over time.[9] These results are shown for GMO-MPS and GMO-L&P on lines 5-10 of Schedule FJC-2A and Schedule FJC-2B, respectively. The last column in each schedule shows that KCP&L-GMO's proposed rates continue this growing Electric Space Heating rate advantage.

[9] The Electric Space Heating schedule rate advantage has increased continually for GMO-MPS since 2004. For GMO-L&P, the continually increasing Electric Space Heating rate advantage was reversed somewhat with rates implemented in 2011. The 2011 changes include the effect of an approved rate case stipulation between KCP&L-GMO and MGE in which the first energy block rate for GMO-L&P's Electric Space Heating was increased 6 percent prior to application of the increase to residential energy charges (Non-Unanimous Stipulation and Agreement as to MGE Rate Design Issue, Case No. ER-2010-0356, February 17, 2011). However, the reversal of the continually increasing Electric Space Heating rate advantage for GMO-L&P in 2011 was short lived. As a result of GMO-L&P's June 25, 2012 rate change, the past pattern of a growing rate advantage for Electric Space Heating was restored. The 2011 GMO-L&P rates reflect the first phase of the rate increase approved in Case No. ER-2010-0356. The 2012 GMO-L&P rates are for the second phase of the rate increase and were approved in Case No. ER-2012-0024.

3. RESIDENTIAL SPACE HEATING AND GENERAL USE SCHEDULES

Q. WHAT JUSTIFICATION HAS KCP&L-GMO PROVIDED FOR THE USE OF LOWER WINTER ENERGY PRICES FOR RESIDENTIAL ELECTRIC SPACE HEAT COMPARED TO GENERAL USE AT CURRENT RATES?

A. In response to an MGE data request seeking this justification, KCP&L-GMO simply provided broad references to its class cost of service study and several general rate design general considerations and indicated that the Commission has approved the tariffs.[10] No Residential schedule-specific information, studies, analyses, or explanations were provided to support the current price differences.

[10] KCP&L-GMO's Responses to Data Request MGE-10 (GMO-MPS) and Data Request MGE-11 (GMO-L&P). Part (a) of Data Request MGE-10 and Data Request MGE-11 requested all justification, including studies, supporting data, cost bases, and explanations to support the current price differences between General use and Electric Space Heating. Part (b) of Data Request MGE-10 and Data Request MGE-11 requested justification, including studies, supporting data, cost bases, and explanations to support the increased price differences under proposed rates. The complete KCP&L-GMO Response to Data Request MGE-10 follows:

> a) and b) The Commission has approved tariffs. Additionally, refer to the class cost of service study provide (sic) in response to data request MGE-1 and see response to DR MGE-8 as it may pertain to rate design.

The same response was provided in KCP&L-GMO's Response to Data Request MGE-11. The complete KCP&L-GMO Response to Data Request MGE-8 follows:

> Mr. Rush did not rely on any single, specific study to support the rate design proposal offered in this case. The class cost of service study provided by Mr. Normand was reviewed and evaluated in conjunction with a few critical considerations. They are:
>
> Provide Revenue Stability and Risk Mitigation
> Implement Cost-based Rates
> Minimize Customer Dissatisfaction
> Simplify the Rate Structures
> Consider Technology Issues

Q. WHAT JUSTIFICATION HAS KCP&L-GMO PROVIDED FOR INCREASING THE AVERAGE WINTER ENERGY PRICE DIFFERENCES BETWEEN ELECTRIC SPACE HEATING AND GENERAL USE WITH ITS PROPOSED RATE CHANGE?

A. In response to an MGE data request seeking this justification, KCP&L-GMO provided the same responses it offered regarding current price differences (see footnote 10). No Residential schedule-specific information, studies, analyses, or explanations were provided to support the increased price differences at proposed rates.

Q. DO GMO-MPS' AND GMO-L&P'S COST OF SERVICE RESULTS SUPPORT THE CURRENT LOWER PRICE FOR RESIDENTIAL ELECTRIC SPACE HEATING SERVICES COMPARED TO THE GENERAL USE SERVICES AS KCP&L-GMO APPEARS TO SUGGEST IN ITS DATA REQUEST RESPONSES?

A. No.

Q. WHY IS THE COST OF SERVICE FOR A CUSTOMER CLASS AN IMPORTANT CONSIDERATION IN ASSIGNING REVENUE ON WHICH THE CLASS' RATES ARE SET?

A. Equity considerations require that each customer class pay the cost to serve the class. Achieving full equity among classes results in identical rates of return for each class based on the revenue produced from rates and the cost to serve each

class. If the equity objective is not met, a portion of the cost to serve one or more classes is borne by other class(es). The term "customer class" in this context should broadly be interpreted as tariff classifications. For example, Residential General Use is a different "customer class" than Electric Space Heating for purposes of measuring the fairness of the rates customers pay.

Such inequity exists in GMO-MPS' and GMO-L&P's current Residential rates. GMO-MPS' and GMO-L&P's cost of service results show that winter revenue produced from current Residential rates and the resulting winter rates of return for Electric Space Heating relative to General Use do not support the relatively lower priced Electric Space Heating Service in the winter. Currently, General Use customers are inequitably paying a portion of the cost to serve Electric Space Heating customers in the winter. In addition, GMO-MPS' cost of service results show that for the Residential class as a whole, current rates and the resulting revenue produce a higher rate of return in the summer than in the winter. For GMO-L&P, the Residential class summer rate of return is lower than the winter rate of return for the class as a whole.

Q. PROVIDE THE GMO-MPS AND GMO-L&P COST OF SERVICE RESULTS THAT SUPPORT YOUR CONCLUSION REGARDING THESE RESIDENTIAL SERVICE INEQUITIES AT CURRENT RATES.

A. The following table shows the seasonal rate of return differences for the Residential class and the substantially lower rate of return for Space Heating than for General Use schedule and for the entire Residential class in the winter for both GMO-MPS and GMO-L&P:[11]

	Annual	Summer	Winter
GMO-MPS:			
Residential – All	5.376%	5.905%	4.919%
General Use	5.836%	5.380%	6.304%
Space Heating	4.703%	6.854%	3.264%
Other Use	10.806%	9.559%	11.523%
GMO-L&P:			
Residential - All	4.085%	3.598%	4.448%
General Use	5.224%	3.936%	6.438%
Space Heating	2.941%	3.261%	2.754%
Other Use	2.882%	-1.054%	5.174%

As explained later in my testimony, KCP&L-GMO's proposed revenue spread exacerbates the inequality in winter rates of return between the General Use and Space Heating Schedules.

[11] Direct Testimony of Paul M. Normand, Case No. ER-2012-0175, Table 3A-MPS, page 25 and Table 3B-L&P, page 26. KCP&L-GMO's Response to Data Request MGE-3 indicates that, for GMO-L&P, Space Heating includes Water/Space Heating-Separate Meter in the cost of service.

Q. DID THE GMO-MPS AND GMO-L&P COST OF SERVICE RESULTS IN ITS LAST RATE CASE SUPPORT THE LOWER PRICED RESIDENTIAL ELECTRIC SPACE HEATING COMPARED TO GENERAL USE AT THAT TIME?

A. No. In Case No. ER-2010-0356, revenues from Electric Space Heating produced substantially lower winter rates of return than the rates of return for both the General Use schedule and for the entire Residential class. These results are shown below:[12]

	Annual	Summer	Winter
GMO-MPS:			
Residential - All	6.134%	5.290%	6.940%
General Use	6.287%	4.726%	8.013%
Space Heating	5.871%	6.384%	5.483%
Other Use	21.892%	18.813%	23.610%
GMO-L&P:			
Residential - All	6.560%	7.488%	5.915%
General Use	7.281%	7.142%	7.396%
Space Heating	5.393%	7.828%	4.027%
Other Use	20.732%	18.276%	21.690%

The continuing winter rate advantage of Electric Space Heating over General Use has been accompanied by a discrepancy between Electric Space Heating and General Use winter rates of return. In Case No. ER-2010-0356, GMO-MPS' winter rate of return for Space Heating was 2.53 percentage points lower than the winter rate of return for General Use at rates in effect at that time. This gap grows to 3.04 percentage points for GMO-MPS in this case with current rates. In Case No. ER-2010-0356, GMO-L&P's winter rate of return for Space Heating was

[12] Direct Testimony of Paul M. Normand, Case No. ER-2010-0356, Table 3A, page 20 and Table 3B, page 21.

3.37 percentage points lower than the winter rate of return for General Use at rates in effect at that time. This gap grows to 3.68 percentage points for GMO-L&P in this case with current rates.

Simply stated, Space Heating customers are inequitably paying less than their fair share of the cost to serve them relative to General Use customers, and this discrepancy has persisted for both GMO-MPS and GMO-L&P. These continuing inequities should be addressed in assigning revenue to tariff classifications and designing rates in this case.

Q. WHAT ARE THE WINTER PRICE CONSEQUENCES IF THE DISCREPANCY BETWEEN THE WINTER RATES OF RETURN FOR ELECTRIC SPACE HEATING COMPARED TO GENERAL USE ARE ELIMINATED?

A. At current rates, the winter energy charge revenue per kWh and resulting winter rate of return for General Use is higher than for Electric Space Heating. Equalizing the rates of return seasonally for the Residential class and among the Residential schedules in the winter based on the GMO-MPS and GMO-L&P cost of service results at current revenues would require higher winter energy charge revenue per kWh for Electric Space Heating and lower revenue per kWh for General Use. The winter energy charge revenue per kWh differences between General Use and Electric Space Heating are sharply reduced as a result of the required revenue shifts, from more than 2.14 cents per kWh to 0.96 cents per kWh

for GMO-MPS and from 2.53 cents per kWh to 1.17 cents per kWh for GMO-L&P. The required Residential revenue shifts seasonally and among the winter schedules and the resulting winter energy price consequences are developed on Schedule FJC-3A for GMO-MPS and on Schedule FJC-3B for GMO-L&P.

If both the General Use and Electric Space Heating customers were currently paying their fair share of the cost to serve them at current rates as indicated by the GMO-MPS and GMO-L&P cost of service results, the Space Heating price advantage would drop dramatically. The attractiveness of Space Heat to KCP&L-GMO's Residential customers today is due to the fact that it is underpriced.

Q. DO THE OTHER MISSOURI ELECTRIC UTILITIES HAVE SEPARATE ALL-ELECTRIC OR SPACE HEATING RESIDENTIAL RATES?

A. No. Schedule FJC-4 provides the current Residential rates for Ameren Missouri ("Ameren") and The Empire District Electric Company ("Empire District"). Neither of the other Missouri electric utilities offers a discounted Electric Space Heating service.

Q. HOW DO THE RESIDENTIAL SERVICE RATES FOR OTHER MISSOURI ELECTRIC UTILITIES COMPARE TO THOSE FOR KCP&L-GMO?

A. Both Ameren and Empire District have a fixed monthly charge and a single block summer energy charge. Ameren and Empire District have two-block, declining

energy rates in the winter with block breaks at 750 kWh and 600 kWh, respectively. The winter rate differential between the first and second block is 2.51 cents per kWh for Ameren and 1.99 cents per kWh for Empire District. Empire District does not have a summer/winter rate differential for the first block for Residential Service.

By comparison, GMO-MPS' General Use schedule effectively has a declining, two-block winter energy rate structure as shown in Schedule FJC-1A (i.e., three blocks with no rate difference between the last two blocks involving usage of more than 600 kWh), with a current rate differential of 3.43 cents per kWh between the first two blocks. GMO-L&P's General Use service has a declining, two-block winter energy rate structure as shown in Schedule FJC-1B, with a current rate differential of 2.62 cents per kWh between the two blocks. Based on these pricing considerations, GMO-MPS and GMO-L&P have a stronger potential to add winter load through their current General Use blocked-rate pricing than does Ameren or Empire District without the need for separate, significantly lower-priced Electric Space Heating schedules.

Q. DOES ELECTRICITY COMPARE FAVORABLY WITH NATURAL GAS FOR HEATING PURPOSES GIVEN GMO-MPS' AND GMO-L&P'S CURRENT WINTER RATES?

A. No. Based on the U.S. Energy Administration's Heating Fuel Cost Comparison calculator and MGE's current natural gas price to residential customers, electric prices would have to be no more than 1.52 cents per kWh in order for a customer to save money on monthly utility bills through an electric space heating furnace rather than a natural gas furnace.[13] This result and results for various natural gas furnace efficiencies and alternative electric heating options are shown in the top panel of Schedule FJC-5. The schedule also shows that GMO-MPS' and GMO-L&P's current winter energy charges are well above the electric prices needed to produce customer savings resulting from the choice of electricity rather than natural gas for space heating purposes. The electric heating option disadvantage for customers grows under KCP&L-GMO proposed rates.

[13]The fuel cost comparison calculator is available through www.eia.gov/neic/experts/heatcalc.xls (accessed on July 9, 2012). This calculation is based on U.S. Department of Energy northern region standard furnace efficiencies of 78% for electricity and 90% mid-efficiency furnace for natural gas and heat contents of 3,412 Btus/kWh for electricity and 102,300 Btus/Ccf for natural gas. Furnace standards are from U.S. Department of Energy, "Energy Conservation Program: Conservation Standards for Residential Furnaces and Residential Central Air Conditioners and Heat Pumps," 10 CFR Part 430, issued October 24, 2011. Natural gas and electricity heat content values are from U. S. Energy Administration, *Monthly Energy Review*, July 2012, pages 176 and 178. MGE's current gas prices are contained on Sheet No. 24.3, effective February 13, 2012.

Q. BASED ON YOUR ELECTRIC-GAS COMPARISON, WHY THEN WOULD CUSTOMERS CHOOSE ELECTRICITY OVER NATURAL GAS FOR HEATING PURPOSES?

A. Aside from possible one-time, equipment and installation cost differences, Electric Space Heating (single meter) provides lower-price winter energy not only for heating but also for all other uses of electricity, so that the winter bills savings from these other uses of electricity may be sufficient to offset the price advantage that natural gas has for space heating purposes. Customers may be naturally attracted to "discounted" rates too, regardless of whether that is really the wisest choice.

Q. IS THIS A REASONABLE RATEMAKING APPROACH?

A. No. Fairness considerations suggest that two residential customers should not pay different prices in the winter for lighting their homes, operating their televisions and refrigerators, and using other electric appliances just because one customer happens to heat his or her home with electricity and the other customer does not. Furthermore, the discounted Electric Space Heating services are underpriced based on the cost to provide them. These two fairness considerations are not met with the KCP&L-GMO's Residential service offerings today.

Q. DO YOU HAVE ANY OTHER OBSERVATIONS REGARDING THE AVAILABILITY OF RESIDENTIAL SPACE HEATING SERVICE?

A. Yes. Schedule FJC-6 shows that for a number of years, GMO-MPS' and GMO-L&P's Residential General Use customer bases have steadily declined at a time when their discounted Electric Space Heating customer bases have continually grown. Underpriced GMO-MPS and GMO-L&P Electric Space Heating services have contributed to this persistent imbalanced growth within the Residential class.

4. RESIDENTIAL RATE DESIGN RECOMMENDATIONS

4.1 CURRENT REVENUE SHIFT

Q. WHAT IS THE PURPOSE OF SHIFTING CURRENT RESIDENTIAL REVENUE SEASONALLY AND AMONG RATE SCHEDULES IN THE WINTER?

A. Current revenues are adjusted on a revenue-neutral basis based on the GMO-MPS and GMO-L&P cost of service results so that Residential customers seasonally and on different rate schedules in the winter contribute revenue through the rates they pay that reflect the cost to serve them. The recommended revenue shifts and the resulting energy charge adjustments correct the current seasonal inequities in Residential revenue collection and correct the current relative under pricing of the Electric Space Heating services in the winter.

Q. DOES KCP&L-GMO'S RECOMMENDATION TO SPREAD THE PROPOSED INCREASE AMONG THE RESIDENTIAL SCHEDULES ACHIEVE THIS SAME RESULT?

A. No. The KCP&L-GMO across-the-board recommendation based on current revenues without first adjusting Residential rates does not address Residential cost of service differences by season and within the rate schedules in the winter based on GMO-MPS' and GMO-L&P's cost of service results. In fact, an across-the-board recommendation accentuates the rate of return differentials and resulting inequities within the Residential class, as shown for GMO-MPS and GMO-L&P in Schedule FJC-7 with an illustrative 10 percent winter revenue increase.

Q. EXPLAIN HOW YOU USE THE GMO-MPS AND GMO-L&P COST OF SERVICE RESULTS TO ADJUST CURRENT RESIDENTIAL REVENUE.

A. I recommend that current Residential revenue be adjusted based on a revenue-neutral shift seasonally and among the rate schedules in the winter to equalize summer and winter rates of return and to equalize the winter rates of return among the rate schedules. The required seasonal revenue change and the winter revenue changes among the Residential services are developed in Schedule FJC-3A for GMO-MPS and in Schedule FJC-3B for GMO-L&P, schedules discussed earlier in my testimony. I explain my recommendations on how rates must be adjusted to reflect these required revenue changes in Section 4.3. First, I explain my recommendations pertaining to the prospective availability of Residential Electric Space Heating.

4.2 ELECTRIC SPACE HEATING SERVICE AVAILABILITY

Q. WHAT IS YOUR RECOMMENDATION PERTAINING TO THE PROSPECTIVE AVAILABILITY OF THE RESIDENTIAL SPACE HEATING SERVICES?

A. I recommend elimination of these rate schedules based the ratemaking considerations discussed in my testimony. The resulting Residential rates before the approved base revenue change, explained in Section 4.3, incorporate the recommended current revenue shifts, explained in Section 4.1.

Q. OTHER THAN THE RATEMAKING CONSIDERATIONS YOU HAVE DISCUSSED, ARE THERE PUBLIC POLICY REASONS THAT SUPPORT ELIMINATION OF THE RESIDENTIAL SPACE HEAT SERVICES?

A. Yes. In the 1970s, rising natural gas demand and declining production along with supply availability concerns provided public policy support for favoring the use of electricity over natural gas, including offering special space heating rates to encourage the installation of electric space heating equipment. Energy market conditions today no longer provide this public policy support for preferential treatment of electricity for space heating purposes. In their place, today's energy-related public policy focuses on promoting end-user energy conservation, limiting environmental impacts related to energy production and delivery, and encouraging efficiency in energy consumption. These environmental concerns

result from impacts on air quality, water use and pollution, and soil contamination. Efficiency in energy consumption considers both appliance efficiency and the full fuel cycle efficiency of alternative energy sources, i.e., the amount of energy delivered to end users taking into account energy used in the full cycle from extraction to processing to generation to transmission to delivery.

GMO-MPS' and GMO-L&P's Residential Electric Space Heating services are inconsistent with today's public policy objectives. Offering separate, discounted Residential Electric Space Heating services further blunts customer incentives to conserve electricity used for both heat and non-heat purposes in the winter.[14] Furthermore, the often-presumed benefits of winter electric load additions resulting from the availability of lower-priced Residential Electric Space Heating services ignore the environment impacts of the increased winter electricity use.

Finally, promotion of electricity through the Residential Electric Space Heating services fails to consider that natural gas is more efficient than electricity for space heating purposes. Based on U.S. Department of Energy efficiency standards for residential furnaces and heat pumps, the consumption efficiency, i.e., combined appliance and fuel cycle efficiency, for a natural gas furnace is 74-

[14] GMO-MPS and GMO-L&P General Use schedules have declining block winter energy charges that blunt customer conservation incentives and result in winter load additions that have environmental impacts. However, the availability of even lower-price Electric Space Heating services worsens efforts to encourage energy conservation and to limit environmental impacts. In addition, it is not in KCP&L-GMO's interest to encourage customers to use less electricity in the winter because its net revenue would fall with declining usage.

82 percent while the consumption efficiency is 50 percent for an electric heat pump and 23 percent for an electric furnace.[15]

Q. DO YOU HAVE AN ALTERNATIVE RECOMMENDATION PERTAINING TO THE PROSPECTIVE AVAILABILITY OF THE RESIDENTIAL ELECTRIC SPACE HEATING SERVICES?

A. While I recommend that these services be eliminated, I understand that the Commission may prefer to take a more gradual approach and schedule the elimination of the services for a subsequent rate case. To achieve this objective, I alternatively recommend that the Commission: (1) adjust current rates to incorporate the recommended GMO-MPS and GMO-L&P current revenue shifts among Residential schedules explained in Section 4.1; (2) indicate its intent to eliminate all Electric Space Heating services; (3) freeze the GMO-MPS and GMO-L&P Electric Space Heating schedules, as it did for the GMO-L&P Space/Water Heating-Separate Meter schedule in 1995; and (4) require tariff language regarding availability to ensure the effectiveness of freezing the

[15]These calculations are based on the following sources: (1) U.S. Department of Energy, "Energy Conservation Program: Conservation Standards for Residential Furnaces and Residential Central Air Conditioners and Heat Pumps," 10 CFR Part 430, issued October 24, 2011; (2) National Research Council, National Academy of Sciences, "Review of Site (Point-of-Use) and Full-Fuel-Cycle Measurement Approaches to DOE/EERE Building Appliance Energy-Efficiency Standards," May 15, 2009, page 6; and (3) U.S. Energy Information Administration, Fuel Cost Comparison Calculator available through www.eia.gov/neic/experts/heatcalc.xls (accessed on July 9, 2012). The calculations are based on the appliance efficiencies 81 percent and 90 percent for weatherized and non-weatherized natural gas furnaces in the region that includes Missouri, respectively, in (1) and on a single-package heat pump with an 8.0 Heating System Performance Factor from (1) with an adjustment for Missouri shown in (3). The fuel cycle efficiencies used the calculations, provided in (2), are 91 percent for natural gas and 30 percent for electricity based on coal-fired power plants. In 2011, KCP&L's electric generation consisted of 80 percent coal, 15 percent nuclear, 3 percent natural gas and oil, and 2 percent wind (Great Plains Energy Incorporated/Kansas City Power & Light Company's 2011 SEC Form 10-K, page 8). The consumption efficiency for each energy source is the product of the appliance efficiency and fuel cycle efficiency.

schedules and to simplify their subsequent elimination. Each of these parts of this alternative recommendation is necessary if the services are to be simply eliminated in a subsequent rate case. Merely freezing the prospective availability of the schedules in this case is not sufficient.

Q. EXPLAIN YOUR TARIFF LANGUAGE RECOMMENDATION IN THE EVENT THE COMMISSION FREEZES THE RESIDENTIAL SPACE HEAT SCHEDULES.

A. Freezing a rate schedule is intended to be a first step toward eliminating it in a subsequent rate case. Given this purpose, I recommend that the Commission require that the availability of the schedules as specified in the tariff be limited to existing customers at existing premises. If a customer moves from premise A to premise B, the service would not be available to the customer at premise B nor would the service be available to a different customer at premise A. My intent is not only to avoid the possible growth in customers served under the Residential Electric Space Heating schedules but also to ensure declining customer counts on the frozen schedules over time thereby simplifying their future elimination.

4.3 ADJUSTED RESIDENTIAL RATES AT CURRENT REVENUE

Q. EXPLAIN HOW ENERGY CHARGES AT CURRENT REVENUE ARE ADJUSTED TO REFLECT YOUR RECOMMENDED REVENUE SHIFT.

A. The rates are developed on Schedule FJC-8A for GMO-MPS and Schedule FJC-8B for GMO-L&P.[16] Line 9 provides the recommended winter revenue shift per kWh for each Residential schedule for GMO-MPS and GMO-L&P. These amounts are used to adjust GMO-MPS' and GMO-L&P's current winter energy charges.

If the Commission accepts my recommendation to eliminate Electric Space Heating, a single General Use schedule is developed for GMO-MPS and GMO-L&P. For GMO-MPS, the consolidated General Use schedule is based on the current Space Heating rate blocks and rate block rate differences (Schedule FJC-8A, lines 17-19).

[16]The rates shown in Schedule FJC-8B are based on the GMO-L&P cost of service results. However, Residential base revenue for GMO-L&P in the KCP&L-GMO Application differs somewhat from the Residential base revenue in the GMO-L&P cost of service study. If the KCP&L-GMO Application Residential base revenue for GMO-L&P is used in the GMO-L&P cost of service study, the following per kWh changes to the rates shown in Schedule FJC-8B are required:

	General Use	Space Heating	Other Use
Winter Energy Charge			
Eliminate Space Heat	(0.0000)		(0.0009)
Freeze Space Heat	(0.0004)	0.0003	(0.0009)
Summer Energy Charge	0.0001	0.0001	0.0001

While there is a very small difference between Residential base revenue for GMO-MPS in the KCP&L-GMO Application and the GMO-MPS cost of service study, no changes in Schedule FJC-8A rates result from using the KCP&L-GMO Application revenue in the GMO-MPS cost of service study because energy charges are rounded to four decimal places.

For GMO-L&P, the consolidated General Use schedule shown in Schedule FJC-8B shows a "recommended" uniform winter energy charge for all kWh (line 15). My preferred recommendation is to develop the consolidated GMO-L&P General Use schedule based on the current Electric Space Heating rate blocks and rate block rate differences, as I do for GMO-MPS, but KCP&L-GMO has not provided the requested billing determinants to enable the rate calculation on this basis.[17] If KCP&L-GMO provides the necessary billing determinants to develop the consolidated General Use schedule on this basis, my preferred recommendation should be used. In addition, the Space/Water Heating - Separate Meter schedule is not included in consolidated General Use schedule; however, there are only 51 customers on this schedule that has been frozen for 17 years.[18]

With either my primary or alternative recommendation, Line 9 revenue per kWh changes are used to adjust the GMO-MPS Other Use and Time of Day winter energy charges and the GMO-L&P Other Use winter energy charges. These winter energy charges are shown on lines 13-15, Schedule FJC-8A for GMO-MPS and on line 13, Schedule FJC-8B for GMO-L&P.

[17] KCP&L-GMO's Response to Data Request MGE-2-1. In KCP&L-GMO's Response to Data Request MGE-4-1, KCP&L-GMO confirmed that it is unwilling to provide the necessary billing determinants for GMO-L&P as part of the discovery process and indicated that it could develop reasonable estimates of these determinants.

[18] The average customer count is shown in KCP&L-GMO Application, Appendix 2.

If the Commission freezes Electric Space Heating availability, current winter energy charges are adjusted by the recommended revenue shift per kWh on each schedule, with no change in rate differences among blocks in the blocked schedules (Schedule 8-A, lines 21-23 and Schedule FJC-8B, lines 17-21).

The required summer energy charge change is shown on Schedule FJC-8A, line 24 for GMO-MPS and on Schedule FJC-8B, line 22 for GMO-L&P. These per kWh amounts are to be added to the current summer energy charges shown in Schedule FJC-1A for GMO-MPS and in Schedule FJC-1B for GMO-L&P. My recommendation maintains the current rate structures with identical summer energy charges for General Use and Electric Space Heating services.

Q. WITH THE ELIMINATION OF SEPARATE ELECTRIC SPACE HEATING FOR GMO-L&P, YOU INDICATE THAT YOU PREFER TO DEVELOP WINTER ENERGY CHARGES BASED ON THE CURRENT ELECTRIC SPACE HEATING RATE BLOCKS AND RATE BLOCK DIFFERENCES. WHAT BILLING DETERMINANT DATA MUST KCP&L-GMO PROVIDE TO DEVELOP THESE ENERGY CHARGES?

A. In order to develop rates on this blocked basis, GMO-L&P's General Use winter usage in the current Over 650 kWh block must be split between (1) usage from 651 through 1000 kWh and (2) usage of more than 1000 kWh. For illustrative purposes, based on an assumption that 25 percent of GMO-L&P's General Use

winter total falls in the more than 1000 kWh block, the resulting consolidated General Use winter rates at current revenue would be:

Service Charge	$9.75
First 1000 kWh	0.0844
Over 1000 kWh	0.0589

The 25 percent assumption is used because approximately 25 percent of KCP&L's General Use total winter usage falls in the Over 1000 kWh block in the current KCP&L rate case (Case No. ER-2012-0174).

4.4 RESIDENTIAL RATES WITH APPROVED BASE REVENUE CHANGE

Q. HOW WOULD YOUR RECOMMENDED RESIDENTIAL RATES BE ADJUSTED TO COLLECT ANY BASE REVENUE CHANGE APPROVED BY THE COMMISSION?

A. I recommend that the approved Residential base revenue change be assigned to the winter and summer seasons to maintain the equalized winter and summer Residential rates of return resulting from my revenue-neutral adjustments. I have no recommendation regarding Residential service charges. After determining the revenue change in each season due to approved service charge changes, I recommend that the remaining revenue in each season be collected with a uniform per kWh change in all energy charges in each season. These energy charge changes are to be added to my recommended energy charges at current revenue developed in Schedule FJC-8A for GMO-MPS and Schedule FJC-8B for GMO-L&P.

These calculations are shown in Schedule FJC-9A for GMO-MPS with an assumed Residential base revenue increase of about one-third of the GMO-MPS request and an assumed three percent increase in all Residential service charges. Schedule FJC-9B provides the calculations for GMO-L&P with an assumed Residential base revenue increase of about one-third of the GMO-L&P request and an assumed four percent increase in all Residential service charges. The resulting energy charge changes shown on line 12 in each Schedule are to be added to my recommended energy charges at current revenue in each Residential schedule (Schedule FJC-8A for GMO-MPS and Schedule FJC-8B for GMO-L&P).

Schedules FJC-9A and FJC-9B can be used to determine the energy charge changes from any base revenue increase that the Commission ultimately approves by inserting the approved base revenue increase in line 5, column d and the service charge revenue change in line 10 in each schedule. The resulting line 12 amounts are to be added to my recommended energy charges at current revenue in Schedules FJC-8A and FJC-8B.

5. REGULATORY COMMISSION DECISIONS REGARDING KCP&L

Q. HAS KCP&L PROVIDED RECOMMENDATIONS TO REDUCE RESIDENTIAL WINTER ENERGY PRICE DIFFERENCES BETWEEN GENERAL USE AND ELECTRIC SPACE HEATING SCHEDULES ELSEWHERE?

A. Yes. In its 2009 Kansas rate case, KCP&L, through its rebuttal testimony, explained that "Based on its cost data offered in the Normand study, Residential General Use rates in the winter are too high and Residential Heating rates in the winter are too low."[19] Based on this result, KCP&L provided a recommendation to "move Residential winter rates closer to cost with revenue-neutral adjustments" with the result of reducing "the differential between General Use and Heating within the Residential class."[20] The Kansas Corporation Commission ("KCC") adopted these KCP&L recommendations adjusted for the KCC-approved revenue requirement.[21]

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[19] Rebuttal Testimony of Tim M. Rush, Docket No. 10-KCPE-415-RTS, page 23, lines 6-8. The referenced Normand study showed the following Residential rates of return at rates in effect at that time:

	Annual	Summer	Winter
Residential - All	7.736%	7.726%	7.744%
Regular (General Use)	8.558%	7.485%	9.611%
Time of Day	7.108%	6.791%	7.384%
Water Heating ("WH")	6.851%	7.567%	6.309%
Separately Metered - WH	5.650%	8.209%	4.256%
Space Heating ("SH")	5.823%	8.547%	4.057%
Separately Metered - SH	7.226%	8.882%	6.241%

Direct Testimony of Paul M. Normand, Docket No. 10-KCPE-415-RTS, Table 3, page 19.

[20] Id, page 23, lines 13-14, 20. KCP&L indicated that it provided the recommendation in the event that the Kansas Corporation Commission decided to implement rate design changes in this docket.

[21] Order: 1) Addressing Prudence; 2) Approving Application, in Part; & 3) Ruling on Pending Requests Docket No. 10-KCPE-415-RTS, November 22, 2010, page 125.

Differences between Residential General Use and Electric Space Heat winter energy charges, i.e., cents per kWh, were dramatically reduced as a result of the KCC adoption of the KCP&L recommendation in Kansas as shown below:

	Residential Space Heat Rate Advantage Over General Use: Winter Rate Block Difference (Cents/kWh)[22]	
	Before Rate Charge	After Rate Change
Electric Space Heat		
First 1000 kWh	(2.83)	(0.73)
Over 1000 kWh	(4.10)	(1.57)
Electric Space Heat-Separate Meter Usage		
First 1000 kWh	(4.28)	(1.67)
Over 1000 kWh	(4.25)	(1.57)

As discussed earlier my testimony, KCP&L-GMO proposes to increase the current winter energy charge differences between the Space Heat and General Use schedules in this case in Missouri, contrary to the KCP&L recommendation and the KCC order in the KCP&L 2009 Kansas rate case.

In the Kansas case, KCP&L used its cost of service study results in developing its recommendation. In contrast, KCP&L does not recognize the GMO-MPS and GMO-L&P cost of service results in developing its proposed rates in this case.

[22] *Id.*, page 125 and Exhibit V, page 2 provide the following winter energy charges before and after the approved rate change:

	Present Rates			New Rates		
	General Use	Space Heat	Space Heat-Separate Meter	General Use	Space Heat	Space Heat-Separate Meter
First 1000 kWh	0.08037	0.05211		0.07312	0.06581	
Over 1000 kWh	0.08003	0.03908		0.07312	0.05746	
Separate Meter			0.03758			0.05746

The Space Heat-Separate Meter schedule has been frozen to new customers since January 1, 2007.

service results to reduce current Electric Space Heating-General Use winter energy charge differences so that Residential customers on these schedules pay the cost to serve them.

Q. DO YOU HAVE ANY OTHER OBSERVATIONS REGARDING THE KCC'S ORDER IN KCP&L'S 2009 RATE CASE?

A. Yes. The KCC opened a rate design docket because the "current rate structure must be redesigned to move customer classes closer to the principal of cost causation" and ordered that various factors including the following be used:

- Further simplification of rate structure for Residential Classes by reducing the number of subclasses.
- Eliminate rate structures with artificial incentives to encourage a customer to switch end-use equipment.
- Incorporate the Commission's energy efficiency and energy conservation goals.[23]

Q. HAS THE COMMISSION PREVIOUSLY ADDRESSED SEPARATE SPACE HEATING SERVICE FOR NON-RESIDENTIAL CUSTOMER CLASSES?

A. Yes. KCP&L-GMO does not offer separate space heating service to non-residential customers, other than a GMO-L&P separately metered service that was

[23]Order: 1) Addressing Prudence; 2) Approving Application, in Part; & 3) Ruling on Pending Requests Docket No. 10-KCPE-415-RTS, November 22, 2010, page 123, 124-25.

frozen in 1995.[24] However, in Case No. ER-2007-0291, the Commission addressed separate all-electric space and separately-metered space heating services to KCP&L general service customers in the City of Kansas City and other western Missouri communities. In that case, the Commission froze these services to existing customers' locations and reduced the price advantage of these services over the general service schedules, with findings and decisions that included:

- Waiting until anywhere from 2009 to 2012 to address the rate disparities that the separately-metered space heating and all-electric tariff customers pay compared to the general service tariff customers is waiting too long.

- Trigen's and Staff's argument that increasing all class' rates the same percentage would effectively increase the size of the general service-space heating discounts, and exacerbate the current problem, is compelling.

- In a future rate case, the Commission might be willing to consider eliminating the discounts altogether. Allowing even more customers to use those discounts flies in the face of a possible move, supported by Staff, towards eliminating them entirely.[25]

Q. DO YOU HAVE ANY OBSERVATIONS REGARDING THESE MISSOURI AND KANSAS DECISIONS REGARDING KCP&L?

A. Yes. Through my testimony, I examine Residential Electric Space Heating-General Use issues similar to those that that led the Commission to its 2007 decision regarding general service space heating services and that led the KCC to its 2010 decision regarding Residential space heating services. This examination

[24] For the test year, KCP&L-GMO Application, Appendix 2 shows and average of 67 general service customers receiving this service.

[25] Report and Order, Case No. ER-2007-0291, issued December 6, 2007, pages 77, 78, and 82. The Commission also froze Residential General Use and Space Heat - 2 Meters in this case.

supports my recommendations in this case regarding the pricing and availability of Residential Electric Space Heating services.

Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

A. Yes.

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the Matter of	)	
KCP&L Greater Missouri Operations Company's	)	
Request for Authority to Implement	)	File No. ER-2012-0175
General Rate Increase for Electric Service	)	

AFFIDAVIT

STATE OF TEXAS	)	
	)	ss
COUNTY OF DALLAS	)	

I, F. Jay Cummings, state that I am employed by Ruhter & Reynolds, Inc., Consulting Economists as a Senior Economist; that the Direct Testimony and schedules attached hereto have been prepared by me or under my direction and supervision on behalf of Southern Union Company, d/b/a Missouri Gas Energy; and, that the answers to the questions posed therein are true to the best of my knowledge, information and belief.

F. Jay Cummings

Subscribed and sworn to before me this 20th day of August, 2012.

Susan R Landis
Notary Public

My Commission Expires:

7/29/2015
(SEAL)

SUSAN R LANDIS
My Commission Expires
July 29, 2015

Schedule FJC-1A

Kansas City Power & Light Company Greater Missouri Operations
Case No. ER-2012-0175
GMO-MPS Current and GMO-MPS Proposed Residential Rates

		MPS Current Residential Rates (6/25/11)				GMO-MPS Proposed Residential Rates			
Line	Description	General Use MO860	Electric Space Heating MO870	Other Use MO815	Time of Day MO600	General Use MO860	Electric Space Heating MO870	Other Use MO815	Time of Day MO600
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
1	Rate Sheet	51	51	52	66	51	51	52	66
2	Service Charge	10.43	10.43	17.18	18.46	11.15	11.15	18.36	19.73
3	Energy Charge								
4	Summer								
5	First 600 kWh	0.1088	0.1088			0.1173	0.1173		
6	Next 400 kWh	0.1120	0.1120			0.1208	0.1208		
7	Excess	0.1176	0.1176			0.1268	0.1268		
8	Peak				0.1987				0.2135
9	Shoulder				0.1104				0.1191
10	Off-Peak				0.0663				0.0719
11	All kWh			0.1274				0.1373	
12	Winter								
13	First 600 kWh	0.1088	0.1088			0.1174	0.1174		
14	Next 400 kWh	0.0745	0.0586			0.0807	0.0637		
15	Excess	0.0745	0.0485			0.0807	0.0529		
17	Peak				0.1275				0.1374
18	Off-Peak				0.0509				0.0555
19	All kWh			0.1055				0.1138	

Source: Current rates from Electronic Filing Information System, Missouri Public Service Commission. Proposed rates from KCP&L-GMO Application, Appendix 1.

Kansas City Power & Light Company Greater Missouri Operations
Case No. ER-2012-0175
GMO-L&P Current and GMO-L&P Proposed Residential Rates

		GMO-L&P Current Residential Rates (6/25/12)				GMO-L&P Proposed Residential Rates			
Line	Description	General Use	Electric Space Heating	Space/ Water Heating - Separate Meter	Other Use	General Use	Electric Space Heating	Space/ Water Heating - Separate Meter	Other Use
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
1	Rate Sheet	18	19	22	21	18	19	22	21
2	Frozen			6/15/95				6/15/95	
3	Service Charge	9.75	9.75	5.21	10.75	10.62	10.62	5.68	11.71
4	Energy Charge								
5	Summer								
6	All kWh	0.1117	0.1117	0.1143	0.1634	0.1239	0.1239	0.1267	0.1802
7	Winter								
8	First 650 kWh	0.0993				0.1104			
9	Over 650 kWh	0.0731				0.0818			
10	First 1000 kWh		0.0776				0.0868		
11	Over 1000 kWh		0.0521				0.0590		
12	All kWh			0.0619	0.1194			0.0697	0.1323

Source: Current rates from Electronic Filing Information System, Missouri Public Service Commission. Proposed rates from KCP&L-GMO Application, Appendix 1.

Kansas City Power & Light Company Greater Missouri Operations
Case No. ER-2012-0175

Residential Winter Energy Charge Changes Since 2004 - GMO-MPS

Line	Description	Effective Date of Rates: April 22, 2004	March 1, 2006	May 31, 2007	September 1, 2009	June 25, 2011	Proposed
	(a)	(b)	(c)	(d)	(e)	(f)	(g)
1	**Winter Block Rate Difference (Cents/kWh):**						
2	**Second Block Rate Less First Block Rate**[1]						
3	General Use Schedule	(2.29)	(2.60)	(2.90)	(3.20)	(3.43)	(3.67)
4	Electric Space Heating Schedule	(3.34)	(3.79)	(4.23)	(4.67)	(5.02)	(5.37)
5	**Rate Advantage Electric Space Heating Schedule**						
6	**Compared to General Use Schedule (Cents/kWh) at:**[2]						
7	400 kWh	-	-	-	-	-	-
8	800 kWh	(0.26)	(0.30)	(0.33)	(0.37)	(0.40)	(0.42)
9	1400 kWh	(0.79)	(0.90)	(1.00)	(1.11)	(1.20)	(1.28)
10	2100 kWh	(1.10)	(1.25)	(1.40)	(1.54)	(1.66)	(1.78)

[1] The two blocks break at 600 kWh for both the General Use and Electric Space Heating schedules.

[2] Usage levels selected to bracket the General Use winter average of 784 kWh and the Electric Space Heating winter average of 1394 kWh.

Kansas City Power & Light Company Greater Missouri Operations
Case No. ER-2012-0175
Residential Winter Energy Charge Changes Since 2004 - GMO-L&P

Line	Description	Effective Date of Rates: April 22, 2004	March 1, 2006	May 31, 2007	September 1, 2009	June 25, 2011	June 25, 2012	Proposed
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)
1	**Winter Block Rate Difference (Cents/kWh):**							
2	**Second Block Rate Less First Block Rate**[1]							
3	General Use Schedule	(1.56)	(1.69)	(1.91)	(2.13)	(2.45)	(2.62)	(2.86)
4	Electric Space Heating Schedule	(1.87)	(1.33)	(1.50)	(1.68)	(2.37)	(2.55)	(2.78)
5	**Rate Advantage Electric Space Heating Schedule**							
6	**Compared to General Use Schedule (Cents/kWh) at:**[2]							
7	400 kWh	(0.41)	(1.69)	(1.91)	(2.13)	(2.03)	(2.17)	(2.36)
8	800 kWh	(0.12)	(1.37)	(1.55)	(1.73)	(1.57)	(1.68)	(1.82)
9	1800 kWh	(0.24)	(1.20)	(1.36)	(1.52)	(1.52)	(1.63)	(1.77)
10	2700 kWh	(0.40)	(1.24)	(1.40)	(1.57)	(1.66)	(1.79)	(1.94)

[1] The two blocks break at 650 kWh for the General Use schedule and at 1000kWh for the Electric Space Heating schedule.

[2] Usage levels selected to bracket the General Use winter average of 790 kWh and the Electric Space Heating winter average of 1795 kWh.

Kansas City Power & Light Company Greater Missouri Operations
Case No. ER-2012-0175
Cost of Service Required Residential Revenue Shifts and Resulting Energy Revenue Per kWh - GMO-MPS

Line	Description	Winter	Summer	Total	Sources/Explanation
	(a)	(b)	(c)	(d)	(e)
1	**Required Winter-Summer Revenue Shifts to Equalize Rates of Return**				
2	Net Operating Income	20,534,099	21,280,223	41,814,322	Lines 2-4: Schedule PMN-2A, pages 2, 4-5.
3	Rate Base	417,428,279	360,383,630	777,811,909	
4	Rate of Return	4.919%	5.905%	5.376%	
5	Net Operating Income at Equalized Rate of Return	22,440,490	19,373,832	41,814,322	Line 4, column d x line 3 for each class.
6	Rate of Return	5.376%	5.376%	5.376%	Line 5/line 3.
7	Required Revenue Shift	3,094,238	(3,094,238)	-	(Line 5 - line 2) x 1/(1 - tax rate). The tax rate of 38.389% provided in KCP&L-GMO's Response to Data Request MGE-1.

		General Use	Electric Space Heating	Other	Total	
		(b)	(c)	(d)	(e)	
8	**Required Winter Revenue Shifts to Equalize Rates of Return**					
9	Net Operating Income	14,261,015	6,229,415	43,669	20,534,099	Lines 2-4: Schedule PMN-2A, pages 2, 4-5.
10	Rate Base	226,206,076	190,843,225	378,978	417,428,279	
11	Rate of Return	6.304%	3.264%	11.523%	4.919%	
12	Net Operating Income at Equalized Rate of Return	12,160,593	10,259,524	20,373	22,440,490	Line 4, column b x line 10 for each class.
13	Rate of Return	5.376%	5.376%	5.376%	5.376%	Line 12/line 10.
14	Required Revenue Shift	(3,409,168)	6,541,217	(37,811)	3,094,238	(Line 12 - line 9) x 1/(1 - tax rate).
15	**Winter Energy Revenue per kWh**[1]					
16	Current	0.0958	0.0744			
17	After Required Revenue Shift	0.0919	0.0823			

[1] Test year winter kWh by schedule and rate block were provided in KCP&L-GMO's Response to Data Request MGE-4. Current winter energy charge revenue used in line 16 is calculated based on these kWhs and current rates in Schedule FJC-1A. Line 17 is calculated based on these kWhs, current winter energy charge revenue, and the revenue shift in line 14.

Kansas City Power & Light Company Greater Missouri Operations
Case No. ER-2012-0175

Cost of Service Required Residential Revenue Shifts and Resulting Energy Revenue Per kWh - GMO-L&P

Line	Description	Winter	Summer	Total	Sources/Explanation
	(a)	(b)	(c)	(d)	(e)
1	**Required Winter-Summer Revenue Shifts to Equalize Rates of Return**				
2	Net Operating Income	5,162,478	3,113,199	8,275,677	Lines 2-4: Schedule PMN-2B, pages 2, 4-5.
3	Rate Base	116,054,643	86,532,797	202,587,440	
4	Rate of Return	4.448%	3.598%	4.085%	
5	Net Operating Income at Equalized Rate of Return	4,740,821	3,534,856	8,275,677	Line 4, column d x line 3 for each class.
6	Rate of Return	4.085%	4.085%	4.085%	Line 5/line 3.
7	Required Revenue Shift	(684,386)	684,386	-	(Line 5 - line 2) x 1/(1 - tax rate). The tax rate of 38.389% provided in KCP&L-GMO's Response to Data Request MGE-2.

Line		General Use	Electric Space Heating	Other	Total	
		(b)	(c)	(d)	(e)	
8	**Required Winter Revenue Shifts to Equalize Rates of Return**					
9	Net Operating Income	3,366,480	1,710,473	85,526	5,162,478	Lines 2-4: Schedule PMN-2B, pages 2, 4-5.
10	Rate Base	52,286,960	62,114,773	1,652,910	116,054,643	
11	Rate of Return	6.438%	2.754%	5.174%	4.448%	
12	Net Operating Income at Equalized Rate of Return	2,135,917	2,537,382	67,521	4,740,821	Line 4, column b x line 10 for each class.
13	Rate of Return	4.085%	4.085%	4.085%	4.085%	Line 12/line 10.
14	Required Revenue Shift	(1,997,310)	1,342,146	(29,223)	(684,386)	(Line 12 - line 9) x 1/(1 - tax rate).
15	**Winter Energy Revenue per kWh**[1]					
16	Current	0.0896	0.0643			
17	After Required Revenue Shift	0.0807	0.0690			

[1] Test year winter kWh by schedule and rate block were provided in KCP&L-GMO's Response to Data Request MGE-5. Current winter energy charge revenue used in line 16 is calculated based on these kWhs and current rates in Schedule FJC-1B. Line 17 is calculated based on these kWhs, current winter energy charge revenue, and the revenue shift in line 14.

Kansas City Power & Light Company Greater Missouri Operations
Case No. ER-2012-0175
Current Residential Rates: Ameren Missouri and The Empire District Electric Company

Line	Description	Ameren Missouri (7/31/2011) Residential Service	Ameren Missouri (7/31/2011) Optional Time of Day Rate	The Empire District Electric Company (6/15/11) General Use
	(a)	(b)	(c)	(g)
1	Rate Sheet	28	28	1
3	Service Charge	8.00	16.81	12.52
4	Energy Charge			
5	Summer			
6	All kWh	0.1059		0.1070
7	Peak - All kWh		0.1539	
8	Off-Peak - All kWh		0.0630	
9	Winter			
10	First 750 kWh	0.07530		
11	Over 750 kWh	0.05020		
12	First 600 kWh			0.1070
13	Over 600 kWh			0.0871

Source: Current rates from Electronic Filing Information System, Missouri Public Service Commission.

Kansas City Power & Light Company Greater Misssouri Operations
Case No. ER-2012-0175

Electric Versus Natural Gas Space Heating Prices

Maximum Electric Price (Cents/kWh) Required for Customer Savings With Electric Space Heating Compared to Natural Gas Heating Service From Missouri Gas Energy

Line		Natural Gas		
		Low-Efficiency	Mid-Efficiency	High-Efficiency
		(a)	(b)	(c)
1		80%	90%	95%
2	Electricity			
3	Electric Furnace	1.72	1.52	1.44
4	Electric Heat Pump[1]			
5	HSPF < 8.5	3.61	3.21	3.04
6	HSPF > 8.5	3.93	3.49	3.31

Current Winter Energy Charges (Cents/kWh) - GMO-MPS and GMO-L&P

		General Use	Electric Space Heating
		(a)	(b)
7	**GMO-MPS**		
8	First 600 kWh	10.88	10.88
9	Next 400 kWh	7.45	5.86
10	Excess	7.45	4.85
10	**GMO-L&P**		
11	First 650 kWh	9.93	
12	Over 650 kWh	7.31	
13	First 1000 kWh		7.76
14	Over 1000 kWh		5.21

[1] Heating Season Performance Factors ("HSPF") and resulting efficiencies are for Kansas City in EIA's Heating Fuel Comparison Calculator.

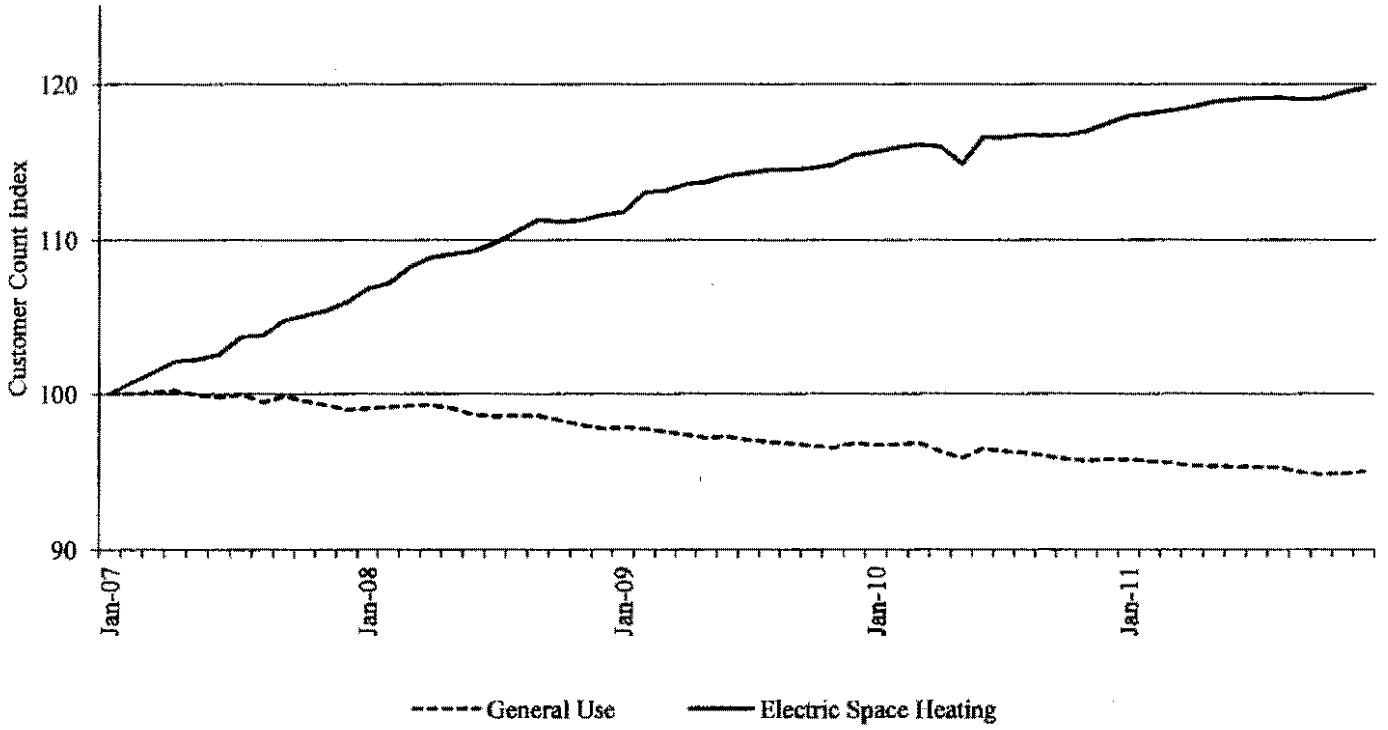
Kansas City Power & Light Company Greater Missouri Operations
Case No. ER-2012-0175
Average Annual Number of Residential Customers - GMO-MPS and GMO-L&P

Average Number Based on Monthly Actual Customer Counts[1]

Line	Description	2007	2008 [2]	2009	2010	2011
	(a)	(b)		(c)	(d)	(e)
	GMO-MPS					
1	**Number of Customers**					
2	General Use	145,230	143,731	141,504	140,180	138,777
3	Space Heating	65,026	69,033	71,810	73,344	74,940
4	Other Use	234	491	533	645	726
5	Time of Day	-	-	-	-	-
6	**Change in Number of Customers**					
	From Prior Period					
7	General Use		(1,499)	(2,227)	(1,324)	(1,403)
8	Space Heat		4,007	2,777	1,534	1,596
9	Other Use		257	42	112	81
10	Time of Day		-	-	-	-
11	**GMO-L&P**					
12	**Number of Customers**					
13	General Use	37,144	36,888	36,615	36,183	35,664
14	Space Heating	17,664	18,343	19,042	19,367	19,601
15	Water/Space Heating - Separate Meter	80	73	64	56	51
16	Other Use	1,847	1,886	1,936	1,964	1,952
17	**Change in Number of Customers**					
18	**From Prior Period**					
19	General Use		(256)	(273)	(432)	(519)
20	Space Heating		679	699	325	234
21	Water/Space Heating - Separate Meter		(7)	(9)	(8)	(5)
22	Other Use		39	50	28	(12)

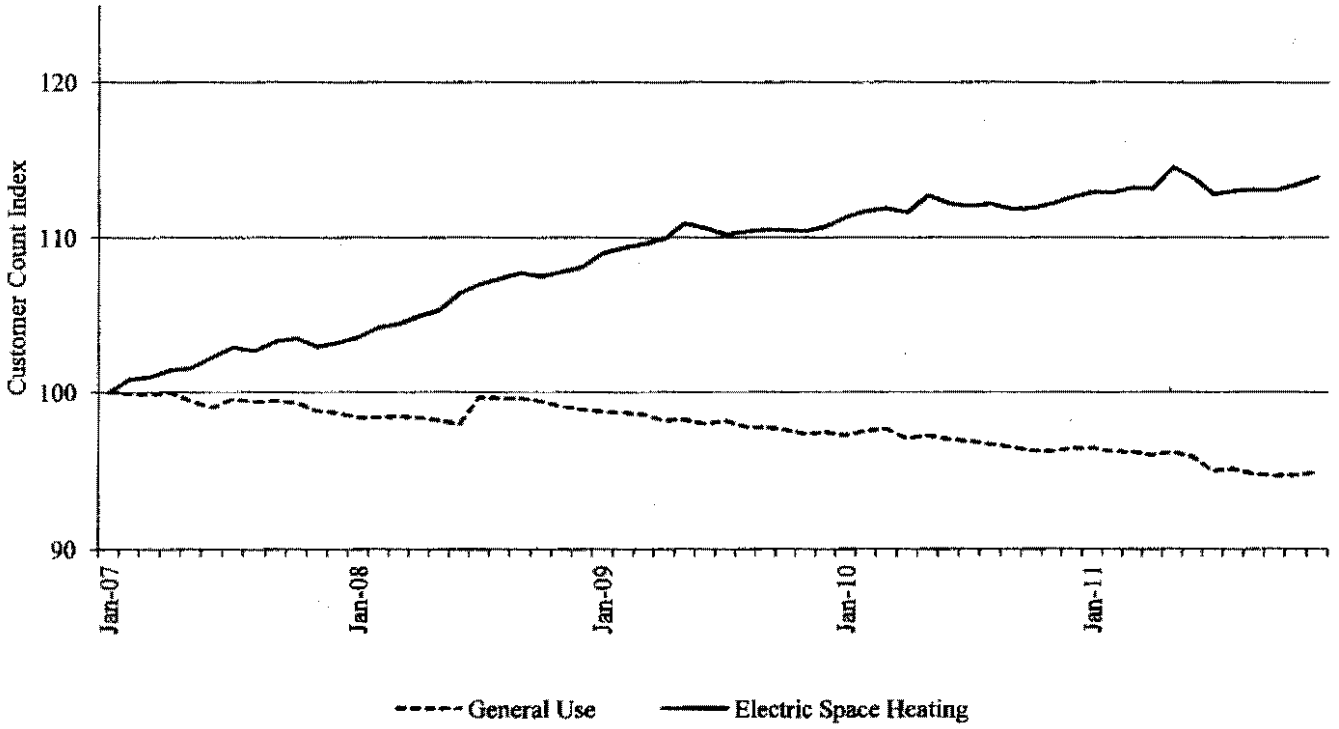
[1] Customer counts by month provided in KCP&L-GMO's Response to Data Request MGE-6 and Data Request MGE-7.
[2] Eleven month average excluding August 2008, a month with customer counts for each schedule that appear incomplete.

Kansas City Power & Light Company
Case No. ER-2012-0175
Residential General Use and Space Electric Heating Monthly Customer Count Indexes - GMO-MPS
(January 2007 Customers = 100)



Source: KCP&L-GMO's Response to MGE Data Request MGE-6. August 2008 index is average of July 2008 and September 2008 indexes.

Kansas City Power & Light Company
Case No. ER-2012-0175
Residential General Use and Space Electric Heating Monthly Customer Count Indexes - GMO-L&P
(January 2007 Customers = 100)



Source: KCP&L-GMO's Response to MGE Data Request MGE-6. August 2008 index is average of July 2008 and September 2008 indexes.

Kansas City Power & Light Company Greater Missouri Operations
Case No. ER-2012-0175
Average Annual Number of Residential Customers - GMO-MPS and GMO-L&P

Average Number From KCP&L-GMO Rate Case Applications[2]

Line	Description	2002	2004	2005	2007	2009 Test Year (12/31/2010)	Test Year Ending 9/30/2011
	(a)	(b)	(c)	(d)	(e)	(f)	(g)
	GMO-MPS						
1	**Number of Customers**						
2	General Use	146,936	146,900	146,460	145,121	141,854	138,936
3	Space Heating	42,051	51,853	58,046	65,386	72,036	74,478
4	Other Use	-	-	New	251	538	706
5	Time of Day	-	-	-	-	-	-
6	**Change in Number of Customers**						
	From Prior Period						
7	General Use		(36)	(440)	(1,339)	(3,267)	(2,918)
8	Space Heat		9,802	6,193	7,340	6,650	2,442
9	Other Use		-	-	251	287	168
10	Time of Day		-	-	-	-	-
11	**GMO-L&P**						
12	**Number of Customers**						
13	General Use	40,356	39,467	38,334	37,093	36,537	35,519
14	Space Heating	14,045	15,686	16,429	17,716	19,002	19,389
15	Water/Space Heating - Separate Meter	100	92	89	80	64	51
16	Other Use	1,534	1,672	1,756	1,851	1,932	1,946
17	**Change in Number of Customers**						
18	**From Prior Period**						
19	General Use		(889)	(1,133)	(1,241)	(556)	(1,018)
20	Space Heating		1,641	743	1,287	1,286	387
21	Water/Space Heating - Separate Meter		(8)	(3)	(9)	(16)	(13)
22	Other Use		138	84	95	81	14

[2] KCP&L-GMO Application, Case Nos. ER-2004-0034, ER-2005-0436, ER-2007-0004, ER-2009-0090, ER-2010-0356, and ER-2012-0175. For column (f), the date in parentheses is the date through which known and measurable changes are reflected in the test year customer counts as shown in the Application. The KCP&L-GMO Application in Case Nos. ER-2004-0034 and ER-2005-0436 provides separate Residential Electric Water Heating customer counts for 2002 and 2004, respectively. These counts are included with the General Use counts above.

Kansas City Power & Light Company Greater Missouri Operations
Case No. ER-2012-0175
Residential Winter Rates of Return With Illustrative 10 Percent Across-the-Board Revenue Increase - GMO-MPS and GMO-L&P

Line	Description	General Use	Electric Space Heating	Rate of Return Difference	Sources/Explanation:
	(a)	(b)	(c)	(d)	(e)
	GMO-MPS				
1	Current Revenue	94,702,991	67,282,623		Calculated from KCP&L-GMO's Response to Data Request MGE-4.
2	Current Net Operating Income	14,261,015	6,229,415		Schedule FJC-3A, line 9.
3	Rate Base	226,206,076	190,843,225		Schedule FJC-3A, line 10.
4	Current Rate of Return	6.304%	3.264%	-3.040%	Columns a and b: Line 2/line 3. Column d: Column c - column b.
5	Increased Revenue	9,470,299	6,728,262		Line 1 x 1.10.
6	Net Operating Income with Increase	20,095,761	10,374,765		Line 2 + line 5 x (1- tax rate), where the tax rate is 38.389%.
7	Rate of Return With Revenue Increase	8.884%	5.436%	-3.448%	Columns a and b: Line 6/line 3. Column d: Column c - column b.
	GMO-L&P				
8	Current Revenue	22,945,801	19,803,618		Calculated from KCP&L-GMO's Response to Data Request MGE-5.
9	Current Net Operating Income	3,366,480	1,710,473		Schedule FJC-3B, line 9.
10	Rate Base	52,286,960	62,114,773		Schedule FJC-3B, line 10.
11	Current Rate of Return	6.438%	2.754%	-3.685%	Columns a and b: Line 9/line 10. Column d: Column c - column b.
12	Increased Revenue	2,294,580	1,980,362		Line 8 x 1.10.
13	Net Operating Income with Increase	4,780,194	2,930,594		Line 9 + line 12 x (1- tax rate), where the tax rate is 38.389%.
14	Rate of Return With Revenue Increase	9.142%	4.718%	-4.424%	Columns a and b: Line 13/line 10. Column d: Column c - column b.

Kansas City Power & Light Company Greater Missouri Operations
Case No. ER-2012-0175
Recommended Residential Rates at Current Revenue -GMO-MPS

Line	Description	General Use	Electric Space Heating	Other	Time of Day	All Classes	Source /Explanation
	(a)	(b)	(c)	(d)	(e)	(f)	(g)
1	**Required Revenue Shift**						
2	Winter	(3,409,168)	6,541,217	(37,811)	-	3,094,238	Schedule FJC-3A, line 14.
3	Summer					(3,094,238)	Schedule FJC-3A, line 7, column c.
4	**kWh**						
5	Winter	867,956,909	822,122,958	1,536,008	-	1,691,615,876	Lines 5-6: KCP&L-GMO's Response to Data Request MGE-4.
6	Summer	673,387,974	402,974,807	622,500	-	1,076,985,281	
7	Total	1,541,344,884	1,225,097,765	2,158,508	-	2,768,601,157	Line 5 + line 6.
8	**Revenue Shift/kWh**						
9	Winter	(0.0039)	0.0080	(0.0246)	-		Line 2/line 5.
10	**Recommended Rates at Current Revenue After Revenue Shift**						
11	Service Charge	10.43	10.43	17.18	18.46		Schedule FJC-1A, line 2.
12	**Winter Energy Charges**						
13	Peak				0.1275		Line 9 + Schedule FJC-1A, line 17.
14	Off-Peak				0.0509		Line 9 + Schedule FJC-1A, line 18.
15	All kWh			0.0809			Line 9 + Schedule FJC-1A, line 19.
16	**Eliminate Electric Space Heating**						
17	First 600 kWh	0.1147					Lines 17-19: General Use and Electric Space
18	Next 400 kWh	0.0645					Heating consolidated with General Use, based on
19	Excess	0.0544					Schedule FJC-1A current rates incorporating line 9.
20	**Retain Electric Space Heat**[1]						
21	First 600 kWh	0.1049	0.1049				Lines 21-23: Schedule FJC-1A current rates +
22	Next 400 kWh	0.0706	0.0706				line 9, with adjustment to Space Heating first two
23	Excess	0.0706	0.0660				blocks to maintain same rate as General Use.
24	**Summer Energy Charge Change**					(0.0029)	Apply to all Schedule FJC-1A summer energy charges.

[1] Applying the revenue shift per kWh would result in a higher first block rate for General Use than for Electric Space Heating. The rates shown maintain the current identical first two block rates in the two schedules.

Schedule FJC-8B
Revised 8/22/2012

Kansas City Power & Light Company Greater Missouri Operations
Case No. ER-2012-0175
Recommended Residential Rates at Current Revenue - GMO-L&P

Line	Description	General Use	Electric Space Heating	Space/Water Heating - Separate Meter	Other	All Classes	Source /Explanation
	(a)	(b)	(c)	(d)	(e)	(f)	(g)
1	**Recommended Revenue Shift**						
2	Winter[1]	(1,997,310)	1,341,026	1,119	(29,223)	(684,386)	Schedule FJC-3B, line 14.
3	Summer					684,386	Schedule FJC-3B, line 7, column c.
4	**kWh**						
5	Winter	225,037,870	283,941,424	246,045	4,952,970	514,178,309	Lines 5-6: KCP&L-GMO's Response to Data Request MGE-5.
6	Summer	151,550,340	97,162,802	85,009	1,279,677	250,077,828	
7	Total	376,588,210	381,104,226	331,054	6,232,647	764,256,137	Line 5 + line 6.
8	**Revenue Shift/kWh**						
9	Winter	(0.0089)	0.0047	0.0045	(0.0059)		Line 2/line 5.
10	**Recommended Rates at Current Revenue After Revenue Shift**						
11	Service Charge	9.75	9.75	5.21	10.75		Schedule FJC-1B, line 3.
12	**Winter Energy Charges**						
13	All kWh				0.1135		Line 9 + Schedule FJC-1B, line 12.
14	**Eliminate Electric Space Heating**						
15	All kWh[2]	0.0742		0.0664			Consolidated column (b) and (c) schedules based on Schedule FJC-1A current rates incorporating line 9.
16	**Retain Electric Space Heat**						
17	First 650 kWh	0.0904					Lines 17-21: Schedule FJC-1B current rates + line 9.
18	Over 650 kWh	0.0642					
19	First 1000 kWh		0.0823				
20	Over 1000 kWh		0.0568				
21	All kWh			0.0664			
22	**Summer Energy Charge Change**					0.0027	Apply to all Schedule FJC-1B summer energy charges.

[1] The Electric Space Heating revenue shift in Schedule FJC-3B is spread to the two Electric Space Heating schedules in columns c and d based on relative winter energy charge revenue at current rates.
[2] It is not possible to consolidate the schedules and maintain a declining block structure because necessary billing determinants were not provided by KCP&L-GMO in Response to MGE-2-1.

Kansas City Power & Light Company Greater Missouri Operations
Case No. ER-2012-0175
Energy Charge Changes With Assumed Base Revenue Change - GMO-MPS

Line	Description	Winter	Summer	Annual	Sources/Explanation
	(a)	(b)	(c)	(d)	(e)
1	**Equalized Seasonal Return at Current Revenue**				
2	Required Net Operating Income	22,440,490	19,373,832	41,814,322	Schedule FJC-3A, line 5.
3	Rate Base	417,428,279	360,383,630	777,811,909	Schedule FJC-3A, line 3.
4	Current Rate of Return	5.376%	5.376%	5.376%	Line 2/line 3.
5	**Assumed Base Revenue Change**			7,723,451	Assumed base revenue change, or about one-third of request.
6	Resulting Net Operating Income			46,572,817	Line 1 + line 4 x (1 - tax rate), where the tax rate is 38.389%.
7	Resulting Rate of Return			5.988%	Line 6/line 2.
8	Revenue Change to Maintain Equalized Seasonal Returns	4,144,944	3,578,507		(Line 7, column d x line 3 - line 2) x 1/(1 - tax rate).
9	Resulting Rate of Return	5.988%	5.988%		(Line 8 x (1 - tax rate) + line 1)/line 3.
10	Service Charge Revenue Change	533,916	266,507		Assumed 3% increase in all service charges.
11	Required Energy Charge Revenue Change	3,611,028	3,312,000		Line 8 - line 10.
12	Energy Charge Change	0.0021	0.0031		Column b: Line 12, column b/Schedule FJC-8A, line 5, column f. Column c: Line 12, column c/Schedule FJC-8A, line 6, column f.

Kansas City Power & Light Company Greater Missouri Operations
Case No. ER-2012-0175
Energy Charge Changes With Assumed Base Revenue Change - GMO-L&P

Line	Description	Winter	Summer	Annual	Sources/Explanation
	(a)	(b)	(c)	(d)	(e)
1	**Equalized Seasonal Return at Current Revenue**				
2	Required Net Operating Income	4,740,821	3,534,856	8,275,677	Schedule FJC-3B, line 5.
3	Rate Base	116,054,643	86,532,797	202,587,440	Schedule FJC-3B, line 3.
4	Current Rate of Return	4.085%	4.085%	4.085%	Line 2/line 3.
5	**Assumed Base Revenue Change**			4,000,000	Assumed base revenue change, or about one-third of request.
6	Resulting Net Operating Income			10,740,117	Line 1 + line 4 x (1 - tax rate), where the tax rate is 38.389%.
7	Resulting Rate of Return			5.301%	Line 6/line 2.
8	Revenue Change to Maintain Equalized Seasonal Returns	2,291,448	1,708,552		(Line 7, column d x line 3 - line 2) x 1/(1 - tax rate).
9	Resulting Rate of Return	5.301%	5.301%		(Line 8 x (1 - tax rate) + line 1)/line 3.
10	Service Charge Revenue Change	179,618	89,727		Assumed 4% increase in all service charges.
11	Required Energy Charge Revenue Change	2,111,830	1,618,825		Line 8 - line 10.
10	Energy Charge Change	0.0041	0.0068		Column b: Line 8, column b/Schedule FJC-8B, line 5, column f. Column c: Line 8, column c/Schedule FJC-8B, line 6, column f.