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MISSOURI PUBLIC SERVICE COMMISSION

CASE NO. ER-2012-0175

SURREBUTTAL TESTIMONY

OF

F. JAY CUMMINGS

ON BEHALF OF

MISSOURI GAS ENERGY

October 10, 2012

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Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is F. Jay Cummings.

Q. ARE YOU THE SAME F. JAY CUMMINGS WHO FILED DIRECT TESTIMONY IN THE PROCEEDING ON AUGUST 21, 2012 AND REBUTTAL TESTIMONY ON SEPTEMBER 12, 2012?

A. Yes.

1. TESTIMONY PURPOSE

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. I address the parties' rebuttal testimony, filed on September 12, 2012, related to the issues I discussed in my direct and rebuttal testimony. The analysis and recommendations made in my direct testimony and further supported in my rebuttal testimony pertain to: (1) the need for cost-based, revenue-neutral Residential current rate adjustments; (2) the elimination of specially-priced Residential Space Heating ("Space Heating") schedules; and, (3) recommendation

for the design of energy charges for Residential services should my recommendations be adopted.[1]

Q. WHICH PARTIES ADDRESS THESE RESIDENTIAL RATE ISSUES IN THEIR REBUTTAL TESTIMONY?

A. Tim M. Rush on behalf of Kansas City Power & Light Company Greater Missouri Operations ("KCP&L-GMO") - MPS ("GMO-MPS") and L&P ("GMO-L&P"). Michael S. Scheperle on behalf of the Missouri Public Service Commission Staff ("Staff") address these issues in rebuttal testimony. I address the Staff and KCP&L-GMO rebuttal testimony in the remainder of this testimony.

2. KCP&L-GMO REBUTTAL TESTIMONY

2.1 RATE DESIGN RECOMMENDATIONS

Q. DO YOU AGREE WITH KCP&L-GMO WITNESS RUSH'S INTRODUCTORY EXPLANATION OF YOUR RECOMMENDATIONS REGARDING RESIDENTIAL SPACE HEATING SERVICES?

A. No. I disagree with several statements made in his introductory explanation. First, his argument that I recommend an adjustment solely to equalize the seasonal

[1] My primary recommendation eliminates Residential Space Heating services in this case. My alternative recommendation would schedule these services for elimination in a subsequent rate case by freezing their availability and adding tariff language to simplify their future elimination. Direct Testimony of F. Jay Cummings (hereafter, "Cummings Direct"), Case No. ER-2012-0175, page 21, line 1 - page 24, line 17.

Residential rates of return is incorrect.[2] In fact, based on KCP&L-GMO's own class cost of service ("CCOS") studies, my revenue-neutral shift would also equalize the rates of return among the various Residential schedules in the winter to remove current inequities in the collection of winter revenue from GMO-MPS and GMO-L&P customers served on various schedules.

Q. WHY IS YOUR RECOMMENDED CURRENT WINTER REVENUE ADJUSTMENT IMPORTANT?

A. This adjustment, which KCP&L-GMO witness Rush does not mention, corrects the continuing problem that, for both GMO-MPS and GMO-L&P, Residential General Use customers pay not only the cost to serve them but also a portion of the cost to serve Space Heating customers who receive special rates in the winter.

Q. DO YOU HAVE OTHER DISAGREEMENTS WITH KCP&L WITNESS RUSH'S INTRODUCTORY EXPLANATION OF YOUR RECOMMENDATIONS?

A. Yes. KCP&L witness Rush incorrectly indicates that I propose "a series of scenarios to revise the MPS and L&P Residential rate blocking."[3] Rather than being a "series of scenarios," my recommended rates were developed using GMO-MPS' and GMO-L&P's current rate structures. If my recommendation to eliminate Space Heating service is approved for GMO-MPS, I recommend the

[2] Rebuttal Testimony of Tim M. Rush (hereafter, "Rush Rebuttal"), Case No. ER-2012-0175, page 7, lines 5-6.

[3] *Id.*, page 7, lines 8-9.

current Space Heating winter rate blocks and rate block differentials be used to design rates for the consolidated General Use schedule.[4] If my recommendation to eliminate Space Heating service is approved for GMO-L&P, I explain that I would prefer to design the consolidated General Use schedule based on the current Space Heating winter rate blocks and rate block differentials, but KCP&L-GMO did not provide the necessary billing determinants to design rates in this manner.[5] As a result, rates must be based on a uniform winter energy charge.

If my alternative recommendation to freeze the availability of specially-priced Space Heating services is approved for GMO-MPS and GMO-L&P, I recommend that the current winter rate blocks and rate block differences in the General Use and Space Heating schedules be used to design rates for those schedules.[6] In both instances, this recommended rate design is used both for the collection of revenue resulting from my recommended revenue shift at current revenue and the collection of revenue resulting from the approved revenue increase.[7] In addition, my recommendation retains the current summer rate structure in designing rates.[8]

[4] Cummings Direct, page 25, lines 11-15.

[5] *Id.*, page 26, lines 3-9.

[6] *Id.*, page 27, lines 1-4.

[7] *Id.*, page 28, lines 16 - page 29, line 10 and Schedules FJC-8A, FJC-8B, FJC-9A, and FJC-9B.

[8] *Id.*, page 27, lines 6-11.

Q. WHAT OTHER RESPONSES DO YOU HAVE TO KCP&L-GMO WITNESS RUSH'S INTRODUCTORY EXPLANATION OF YOUR RECOMMENDATIONS?

A. KCP&L-GMO witness Rush states that I provide no study that "would justify the proposed changes in rate design."[9] No study is needed because, as I explain above, my recommendations retain the current rate designs. As explained in my direct testimony, KCP&L-GMO proposes to change the current Residential rate designs by increasing the rate block differentials and relative winter price differences between Residential General Use and Space Heating services without any study to support KCP&L-GMO's proposed rate design change.[10]

Finally, KCP&L-GMO witness Rush alleges that "MGE made modifications to the Company billing determinates [sic] to formulate their proposal."[11] This statement is incorrect. The rates shown in Schedules FJC-8A and FJC-9A for GMO-MPS and in Schedules FJC-8B and FJC-9B for GMO-L&P included with my direct testimony are based on KCP&L-GMO's billing determinants provided in KCP&L-GMO's Responses to Data Request MGE-4 and Data Request MGE-5.[12]

[9] Rush Rebuttal, page 7, lines 13-14.

[10] Cummings Direct, page 9, line 3 - page 10, line 9.

[11] Rush Rebuttal, page 7, lines 14-15.

[12] Residential revenue calculated using these billing determinants and the rates shown in Schedule FJC-8A for GMO-MPS and in Schedule FJC-8B for GMO-L&P matches the Residential revenue shown in for GMO-MPS and GMO-L&P in the KCP&L-GMO Application, Appendix 2. These revenue calculations are shown in my direct testimony work papers that have been provided.

I address further observations on KCP&L-GMO witness Rush's testimony pertaining to my recommendations in the remainder of this section of my testimony.

Q. DO YOU AGREE WITH KCP&L-GMO WITNESS RUSH'S CHARACTERIZATION OF KCP&L-GMO WITNESS NORMAND'S CCOS STUDY RESULTS AND YOUR USE OF THIS STUDY?

A. No. Although KCP&L-GMO witness Rush's explanation of KCP&L-GMO witness Normand's CCOS study results is accurate, it is incomplete. While he mentions that the CCOS study provides cost of service and rate of return information by class and season, he does not mention that the CCOS provides this same information by rate schedule at current rates, as summarized on Table 3 in KCP&L-GMO witness Normand's direct testimony.[13] In my direct testimony, I explain that these CCOS results, as well as similar results in KCP&L-GMO's last rate case, show that - due to the special prices for these services - Residential Space Heating customers are and have been inequitably paying less than their fair share of the cost to serve them in the winter relative to General Use customers, and KCP&L-GMO's rate design recommendation in this case only exacerbates this situation.[14]

[13] Rush Rebuttal, page 7, lines 19-22 and Direct Testimony of Paul M. Normand, Case No. ER-2012-0175, Table 3A, page 25 and Table 3B, page 26.

[14] Cummings Direct, page 12, line 1 - page 14, line 9 and page 20, lines 1-10.

KCP&L-GMO witness Rush indicates that I address this inequity because of my position that "all rates should be the same."[15] He appears to suggest that my recommendation to eliminate Space Heating services, i.e., "all rates should be the same," drives my recommendation that deals with the inequity. This characterization of my analyses is incorrect.

Q. WHY IS KCP&L WITNESS RUSH'S CHARACTERIZATION OF YOUR ANALYSES INCORRECT?

I do not begin with a presumption that "all rates should be the same." Rather, I first correct the inequity within the Residential class through a revenue-neutral shift in current Residential revenue seasonally and among Residential rate schedules in the winter based on the GMO-MPS and GMO-L&P CCOS studies.[16] This revenue shift results in energy charge adjustments to current Residential

[15] Rush Rebuttal, page 8, lines 3-4. Mr. Rush indicates that "all rates should be the same" means "a customer who has a gas furnace home should pay the same for electricity as a home with an electric heat pump" (Rush Rebuttal, page 8, lines 4-5). KCP&L-GMO witness Rush's statement does not address or answer the point of my direct testimony discussion of the fairness consideration resulting from two residential customers today, one who uses electric space heat and one who does not, paying different prices for lighting their homes, operating their refrigerators and televisions, and using other electric appliances (Cummings Direct, page 18, lines 12-19).

KCP&L witness Rush also contends that my recommendation does not take into account the differing load characteristics of an electric heat home compared to a home heated with natural gas (Rush Rebuttal, page 8, lines 5-7). Differing load characteristics for Space Heat customers and General Use customers who presumably do not have electric space heat equipment should be captured in the GMO-MPS and GMO-L&P cost of service studies through the allocation factors applied to the various cost of service components for the different customer classes. These cost of service results are used to develop my recommended current revenue shifts within the Residential class rate schedules for GMO-MPS and GMO-L&P. In other words, my recommendations, based on the GMO-MPS and GMO-L&P cost of service studies, should reflect the cost consequences of the differing load characteristics to which KCP&L-GMO witness Rush refers.

[16] Cummings Direct, Section 4.1 and Schedules FJC-3A and FJC-3B.

summer and winter rates on all GMO-MPS and GMO-L&P rate schedules.[17] After making these adjustments, I assess other ratemaking and policy considerations, discussed in my previous testimony, that lead to my primary recommendation to eliminate the special prices for Residential Space Heating services for GMO-MPS and GMO-L&P and to my alternative recommendation to freeze the availability of these specially-priced services.[18] The end result of my analyses, not the starting point, is that, for both GMO-MPS and GMO-L&P, current Residential General Use customers and Space Heating customers would pay the same rates if Space Heating services are eliminated in this case.

Q. DO YOU AGREE WITH KCP&L-GMO WITNESS RUSH'S CONTENTION THAT YOUR RECOMMENDATION INCREASES ELECTRIC SPACE HEAT PRICES WITHOUT ANY COST JUSTIFICATION?[19]

A. No. There is cost justification for my recommendation that leads to higher rates for what are now specially-priced services. As explained above and in more detail in my direct testimony, I recommend that: (1) the GMO-MPS and GMO-L&P cost of service results be used to adjust Residential Space Heating winter current rates to reflect the cost to serve this class of customers; and, (2) the approved GMO-MPS and GMO-L&P revenue increases assigned to the Residential class be

[17] *Id.*, page 25, line 3 - page 27, line 4; Schedule FJC-8A, lines 9 and 24; and Schedule FJC-8B, lines 9 and 22.

[18] *Id.*, page 10, line 18 - page 19, line 7; page 21, line 1 - page 24, line 17; page 25, line 1 - page 27, line 11; and Schedules FJC-8A and FJC-8B.

[19] Rush Rebuttal, page 8, lines 15-16.

applied to the Residential rate schedules in such a way as to maintain their relationship to cost.[20]

2.2 RESIDENTIAL RATES OF OTHER ELECTRIC UTILITIES

Q. DO YOU HAVE ANY COMMENTS REGARDING KCP&L-GMO WITNESS RUSH'S OBSERVATION THAT RESIDENTIAL HEAT RATES ARE COMMON?

A. Yes. KCP&L-GMO witness Rush lists four utilities in Kansas, Iowa, Nebraska, and Oklahoma that have such rates.[21] He does not mention that a number of electric utilities nationally have discontinued or closed the availability of such rates, including utilities in Arkansas, California, Connecticut, Massachusetts, Nebraska, New Jersey, North Carolina, Ohio, Pennsylvania, and Wisconsin.[22] KCP&L-GMO witness Rush also does not mention the other two Missouri investor-owned electric utilities, neither of which has a separate, specially-priced Residential space heating service.

[20] Cummings Direct, especially page 19, line 16 - page 20, line 23; page 25, line 3 - page 26, line 17; page 28, line 13 - page 29, line 17; and Schedules FJC-3A, FJC-3B, FJC-8A, FJC-8B, FJC-9A, and FJC-9B.

[21] Rush Rebuttal, page 9, lines 3-5.

[22] Southwestern Electric Power Company, Sacramento Municipal Utility District, Connecticut Light and Power Company Nantucket Electric Company, Lincoln Electric System, Dominion North Carolina Power, Cleveland Electric Illuminating Company, Ohio Edison Company, Toledo Edison Company, PECO Energy Company (as of January 1, 2013), Public Service Electric and Gas Company, Toledo Edison Company, and Wisconsin Public Service Corporation.

KCP&L-GMO witness Rush further indicates that other utilities do not have electric heating rates, but "their rate design supports electric heating or other winter season usage."[23] In fact, the current Residential General Use rates for GMO-MPS and GMO-L&P and my recommended Residential rates for GMO-MPS and GMO-L&P (with the exception of Space Heating elimination) with their declining winter block rate structures provide this support.[24]

Furthermore, both Ameren Missouri ("Ameren") and The Empire District Electric Company ("Empire District") have Residential declining block winter rate structures that are less pronounced than the current GMO-MPS and GMO-L&P General Use winter rates. In other words, the winter price break for consuming more electricity for Ameren and Empire District Residential customers, including customers with electric space heat, is smaller than it currently is for GMO-MPS and GMO-L&P General Use customers. Thus, the current GMO-MPS and GMO-L&P Residential General Use rate structures should more effectively encourage winter usage than the Residential rate structures of these other Missouri electric utilities.[25] KCP&L-GMO's specially-priced Space Heating services are not needed for this purpose.

[23] Rush Rebuttal, page 9, lines 6-7.

[24] As previously mentioned, my preference is to design the consolidated GMO-L&P General Use schedule based on the current Space Heating winter rate blocks and rate block differentials, but KCP&L-GMO did not provide the necessary billing determinants to design rates in this manner.

[25] Cummings Direct, page 15, line 19 - page 16, line 17.

2.3 POLICY CONSIDERATIONS

Q. DO YOU HAVE ANY COMMENTS REGARDING KCP&L-GMO WITNESS RUSH'S DESCRIPTION OF THE U.S. DEPARTMENT OF ENERGY'S ("DOE'S") POLICY ON FULL FUEL CYCLE EFFICIENCY?[26]

A. KCP&L-GMO witness Rush's accurately excerpts DOE's policy statement, but his explanation of the policy statement is incomplete.[27] The statement explains that its "energy conservations standards should continue to be based, in large part, on the cost and savings that user's [sic] experience."[28] However, the policy statement does not dismiss full fuel cycle efficiency ("FFC") and environmental impacts as public policy considerations.[29] The policy statement clearly explains the importance of consumer and government decision-maker access to information on FFC and environmental impacts of energy alternatives and commits DOE to work with other federal agencies to make this information readily available.[30] This is precisely my point in raising FFC and environmental issues in my direct testimony. These policy issues should be among the considerations in assessing

[26] Rush Rebuttal, page 10, line 1 - page 11, line 17.

[27] The date of the Federal Register citation in *Id.*, page 10, footnote 1 should read August 18, 2011.

[28] 76 FR 51288 (August 18, 2011).

[29] 76 FR 51282 (August 18, 2011). KCP&L witness Rush acknowledges that the policy statement calls for FFC considerations in "national impact analyses and environmental assessments" (Rush Rebuttal, page 10, line 4), but he does not address their policy importance in evaluating discounted Residential Space Heating services.

[30] 76 FR 51285, 51287 - 89 (August 18, 2011).

the reasonableness of promoting Residential Space Heating and the resulting increases in winter electricity usage through discounted rates.

In other words, DOE's conservation standards are intended to directly relate to customer cost differences from choosing alternative appliance efficiencies and energy sources. Customer costs are determined by the price that they pay for various energy sources. The prices customers pay for electricity compared to other energy sources do not include FFC and environmental effects, effects that result in societal costs for electricity that exceed the market cost, i.e., the price paid by end users. The fact that electricity prices are understated based on societal costs should not be ignored as a policy issue in considering alternative electric service availability and pricing. DOE recognizes this in pointing out the importance of information on these effects for government decision makers and consumers.

Also, in response to KCP&L witness Rush's discussion of DOE's policy statement and the statement's discussion of FFC and environmental impacts, Surrebuttal Schedule FJC-1, page 1 provides the detailed data underlying the FFC calculations that are included in my direct testimony.[31] The top panel on page 2 of the schedule incorporates FFC effects in Residential energy consumption data and shows that about half of the total Residential energy consumption from all sources consists of electricity losses, i.e., BTUs lost in the FFC from extraction to delivery.

[31] Cummings Direct, page 22, line 15 - page 23, line 2 and footnote 15.

The bottom panel on page 2 of the schedule provides quantification of greenhouse gas emissions associated with alternative energy sources, data that relates to environmental impacts referenced in my direct testimony.[32]

Q. DO YOU CONSIDER DOE'S CONSERVATION STANDARDS IN YOUR DIRECT TESTIMONY?

A. Yes. DOE's conservation standards (that do not include FFC and environmental impacts) are reflected in my calculations demonstrating that GMO-MPS' and GMO-L&P's electricity prices, including their Space Heating prices, are too high to produce customer savings from the use of electric heating equipment compared to natural gas furnaces.[33] KCP&L-GMO witness Rush did not dispute these results in his rebuttal testimony.

Q. DO YOU AGREE WITH KCP&L-GMO WITNESS RUSH'S CLAIM THAT YOU STATE THAT "ELECTRIC HEATING IS INCONSISTENT WITH PUBLIC POLICY"[34]?

A. No, I did not make this statement. I never questioned whether electricity should or should not be used for space heating purposes. Rather, as explained in detail in my direct testimony, ratemaking and policy considerations support my recommendation to eliminate the specially-priced, non-cost-based Space Heating

[32] See, for example, *Id.*, page 21, line 20 - page 22, line 2.

[33] *Id.*, page 17, lines 1-14 and Schedule FJC-5.

[34] Rush Rebuttal, page 12, line 5.

schedules of GMO-MPS and GMO-L&P. My testimony and recommendations do not preclude customers from choosing electricity for space heating. If my primary recommendation is adopted, Residential customers choosing electric space heat equipment would be served under the General Use schedules for GMO-MPS and GMO-L&P. With my primary or alternative recommendation, the current underpricing of GMO-MPS' and GMO-L&P's Space Heating services in the winter is corrected.

2.4 RECENT KCP&L KANSAS RATE CASE

Q. DO YOU HAVE ANY OBSERVATIONS REGARDING KCP&L-GMO WITNESS RUSH'S COMMENTS ON YOUR DIRECT TESTIMONY CONCERNING THE RECENT KCP&L RATE CASE IN KANSAS?[35]

A. Yes. KCP&L-GMO witness Rush attempts to distance himself from his own recommendation in the Kansas case by indicating that I do "not properly establish the context of the case."[36] He points out that "[m]ultiple parties took the extreme position of eliminating rates" in Kansas and that Residential Space Heating rates in Kansas had some deficiencies that do not exist in Missouri.[37] He does not explain what these alleged deficiencies were. The fact that only one party provides a recommendation to eliminate Residential Space Heating services in this

[35] *Id.*, page 11, lines 25 - page 26, line 4.

[36] *Id.*, page 11, lines 25-26.

[37] *Id.*, page 11, lines 26-27 and page 12, lines 2-4.

case while many did in Kansas does not provide a basis for rejecting the analyses and recommendations of that party.[38] It simply may explain why KCP&L-GMO witness Rush chose to address the problem in Kansas, but not in Missouri.

KCP&L-GMO witness Rush ignores the fact the GMO-MPS and GMO-L&P cost of service results in this case, as in the KCP&L CCOS results in the recent Kansas case and in KCP&L-GMO's last Missouri rate case, demonstrate the need to significantly reduce the differential between General Use and Space Heating rates for GMO-MPS and GMO-L&P.[39] Furthermore, KCP&L-GMO witness Rush does not explain whether he believes that there are context differences between the two cases regarding the other ratemaking and policy considerations that I provided in my direct testimony which support the elimination of Residential Space Heating in this case.

[38] KCP&L witness Rush provides similar, extraneous arguments elsewhere in his rebuttal in noting that no builders, developers, or HVAC dealers had intervened in this case, and there is not public outcry to eliminate rates in this case. Rush Rebuttal, page 8, lines 19-22. The proper question is: "are specially-priced Space Heating services appropriate?"

[39] KCP&L-GMO witness Normand explains that the approach used in the GMO-MPS and GMO-L&P CCOS in this case is the same as in the recent KCP&L Kansas case and that the Kansas Corporation Commission endorsed the approach and explained that "It allows for a detailed examination of seasonal costs and corresponding seasonal rate allocations." Rebuttal Testimony of Paul M. Normand, Case No. ER-2012-0175, page 12, lines 1-13. KCP&L-GMO witness Rush supports KCP&L-GMO witness Normand's method in this case, indicating that KCP&L used the method in its last case and "proposed the method in conjunction with the Commission's direction to address seasonal CCOS" (Rush Rebuttal, page 5, lines 20-21).

2.5 RATE DESIGN CONSIDERATIONS

Q. DO YOU HAVE OBSERVATIONS CONCERNING KCP&L-GMO WITNESS RUSH'S EXPLANATION OF CONSIDERATIONS HE SUGGESTS FOR ASSESSING RATE DESIGN PROPOSALS?[40]

A. Yes. KCP&L-GMO witness Rush mentions five considerations. It appears to me that even utilizing his considerations will lead the Commission back to my recommendation.

Q. PLEASE DESCRIBE THE FIRST THREE CONSIDERATIONS IN RELATION TO YOUR RECOMMENDATIONS.

A. One consideration, "Implement Cost-Based Rates," is satisfied by my recommended revenue-neutral adjustment to current Residential rates to equalize the seasonal rates of return and the winter rates of return on the various Residential schedules based on the GMO-MPS and GMO-L&P cost of service.

KCP&L-GMO witness Rush explains that a second consideration, labeled "Simplify the Rate Structure," requires that "The Company should seek to combine or reduce rates where possible."[41] My primary recommendation satisfies this consideration by reducing the number of available rates.

[40] Rush Rebuttal, page 12, line 10 - page 13, line 22.

[41] *Id.*, page 13, lines 19-20.

A third consideration, "Consider Technology Issues," requires that the Company must be able to measure usage and produce bills under the new rates.[42] My recommendations that are based on KCP&L-GMO's current rate structure satisfy this consideration.

Q. WHAT IS KCP&L-GMO WITNESS RUSH'S FOURTH CONSIDERATION?

A. A fourth consideration is labeled "Provide Revenue Stability and Risk Mitigation." In assessing this issue, KCP&L-GMO witness Rush contends that, if Space Heating services are eliminated, "the Company would lose a considerable amount of sales which would ultimately harm all customers."[43]

Q. DO YOU AGREE WITH KCP&L-GMO WITNESS RUSH'S CONTENTION AS TO THE IMPACT OF YOUR RECOMMENDATIONS?

A. No. KCP&L-GMO witness Rush does not provide any quantification or analyses to support his contention nor does he explain what he means by "harm." Perhaps he believes that as a result of a loss of "a considerable amount of sales," the Company will experience a sizable revenue loss that would cause it to file another rate case with resulting in higher rates. However, the expected loss of "a considerable amount of sales" and resulting sizable revenue loss due to my recommendations is not supportable.

[42] *Id.*, page 13, lines 21-22.

[43] *Id.*, page 12, lines 19-20.

Q. PLEASE EXPLAIN.

A. The possibility of such a revenue loss is assessed by considering the Residential price elasticity of demand for electricity. The price elasticity of demand for a product or service is defined as:

$$\frac{\text{Percentage change in quantity}}{\text{Percentage change in price}}$$

An inelastic demand has an elasticity of less than one. With an inelastic demand, an increase in price results in increased revenue to the seller because the revenue loss due to the reduction in quantity consumed is more than offset by the additional revenue at the higher price on the remaining quantity consumed.[44] This is the case with the demand for electricity. Various studies have demonstrated that the Residential price elasticity of demand is very inelastic.[45]

The winter revenue-enhancing effect of my recommendations is illustrated by a calculations that includes the responsiveness of an average winter use Space Heating customers to the recommended price changes. Based on the range of

[44] Algebraically, this result is explained as follows, where e is the price elasticity, P is price, Q is quantity consumed, Δ represents the change in a variable, and R is revenue. With an inelastic demand, $e = (\Delta Q/Q)/(\Delta P/P) < 1$, or $P(\Delta Q) < Q(\Delta P)$. Revenue is $R = P \times Q$, and the change in revenue is $\Delta R = P(\Delta Q) + Q(\Delta P)$. The revenue change is positive with a price increase because the second term (which is positive) is greater than the first term (which is negative) with an inelastic demand, i.e., $e < 1$.

[45] See, for example, Mark A. Bernstein and James Griffin, Regional Differences in the Price-Elasticity of Demand for Energy, RAND Infrastructure, Safety, and Environment, Technical Report, 2005 (available at http://www.rand.org/pubs/technical_reports/TR292.html, accessed on September 5, 2005) and U.S. Energy Administration ("EIA"), "Price Responsiveness in the AEO2003 NEMS Residential and Commercial Building Sector Model" (available at http://www.eia.gov/oiaf/analysispaper/elasticity/index, accessed on September 5, 2012). The Rand Report provides Residential electricity price elasticity estimates of -0.24 in the short-run and -0.32 in the long-run at the national level and -0.16 in the short-run and -0.24 in the long-run for the West North Central region that includes Missouri (pages 24 and 76). The EIA study provides Residential electricity price elasticity estimates of ranging from -0.29 to -0.34 in the short-run and -0.49 in the long-run.

Residential electricity price elasticities reported in the cited studies and the recommended higher winter energy prices, the average winter bill of the GMO-MPS customer will increase from $4.41 to $6.46 in the short-run and from $2.66 to $5.55 in the long-run if Space Heating is eliminated.[46] The average winter bill of the GMO-L&P customer will increase from $7.20 to $10.86 in the short-run and from $4.13 to $9.23 in the long-run if Space Heating is eliminated.[47] While the average use customer reduces his/her usage, the revenue consequence due to the reduced usage is more than offset by the higher price on the remaining usage. In fact, KCP&L-GMO itself expects that it will achieve additional revenue in proposing to increase current Residential rates.[48]

Q. ISN'T IT POSSIBLE THAT SOME CURRENT SPACE HEAT CUSTOMERS MAY DISCONTINUE THEIR USE OF ELECTRIC SPACE HEAT EQUIPMENT CAUSING A FUTURE REVENUE LOSS?

A. Yes, this is a conceptual possibility. While some customers, facing higher Space Heating prices, may choose an alternative energy source when their electric space

[46] These calculations are based on the elimination of Space Heating service, average winter Space Heating usage of 1394 kWh, current rates in Schedule FJC-1A, recommended rates in Schedule FJC-8A, and the range of elasticities reported in the cited studies. The corresponding bill increases with my alternative recommendation to freeze the availability of Space Heating service are from $5.90 to $7.73 in the short-run and from $4.39 to $6.90 in the long-run.

[47] These calculations are based on the elimination of Space Heating service, average winter Space Heating usage of 1795 kWh, current rates in Schedule FJC-1B, recommended rates in Schedule FJC-8B, and the range of elasticities reported in the cited studies. The corresponding bill increases with my alternative recommendation to freeze the availability of Space Heating service are from $4.72 to $6.69 in the short-run and from $3.06 to $5.87 in the long-run.

[48] KCP&L-GMO Application, Appendix 2 shows that KCP&L-GMO expects to increase Residential annual revenue by increasing the average GMO-MPS Residential price from $0.10575 per kWh to $0.11412 per kWh and the average GMO-L&P Residential price from $0.09650 per kWh to $0.10736 per kWh.

heat equipment wears out, this possibility should not be a significant factor for several reasons. First, to the extent this occurs, it would be realized only over a long period of time. The life expectancy of electric heat pumps equipment is at least 15 years, and electric furnaces typically last longer.[49] Electric space heating has grown rapidly in the 2000s, suggesting that much of this electric equipment is relatively new and will not be replaced for some time.[50]

Second, quantification of such an effect would be difficult, at best, and would be speculative. For example, such quantification would have to somehow take into account the incidence of premises currently equipped to use alternative energy sources for space heat; the cost to retrofit other premises and the likelihood that retrofits would occur; the future prices of both electricity and alternative energy sources; and the future prices and life spans of space heat equipment that use various energy sources.

[49] National Association of Home Builders/Bank of America Home Equity, "Study of Life Expectancy of Home Components," February 2007 and KCP&L's website heat pump questions and answers at http://www.kcplsave.com/residential/programs_and_services/heat_pumps/faqs.html#q15 (accessed on September 5, 2012).

[50] Between 2001 and 2009, the number of homes with space heating in the West North Central Census Division that includes Missouri grew by 0.7 million. In this period, the number of homes with electric space heating equipment grew by 1.0 million, while the number with natural gas equipment fell by 0.3 million. Between 2005 and 2009, the number of homes with space heat in the region grew by 0.2 million, while the number with electric space heat grew by 0.4 million. In 2009, Missouri had a disproportionate share of electric heated homes. Missouri had 28 percent of the region's total heated homes, but 44% of region's homes heated with electricity. Data are from U.S. Energy Information Administration, 2009 Residential Energy Consumption Survey, Table HC6.9; 2005 Residential Energy Consumption Survey, Table HC12.4; and 2001 Residential Energy Consumption Survey, Table HC3-10a, available on tabs at http://www.eia.gov/consumption/residential/data/ (accessed on September 5, 2012). The West North Central Census Division consists of Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, and South Dakota.

Third, the long-run price elasticity estimates for Residential electricity reported in the cited studies suggest a small effect on usage due to price increases. It is not reasonable to invoke a highly speculative, long-term possibility that is likely to be small as a basis to ignore the fact that non-Space Heating customers are and have been inequitably paying a portion of the cost to serve Space Heating customers in the winter.

Q. WHAT IS KCP&L-GMO WITNESS RUSH'S FINAL RATE DESIGN ASSESSMENT CONSIDERATION?

A. In explaining the final consideration, labeled "Minimize Customer Dissatisfaction," in the context of my recommendations, KCP&L-GMO witness Rush lists two points. His first point, applicable to my alternative recommendation to freeze the availability of specially-priced Space Heating services, is that "the Company should allow some time period to elapse so that customers currently committed to that rate can still get the rate to justify their investment."[51] KCP&L-GMO witness Rush's second point listed in "Minimize Customer Dissatisfaction" consideration is that if specially-priced Space Heating services are eliminated, "the rate impact of those customers should be considered."[52]

[51] Rush Rebuttal, page 13, lines 12-14.

[52] Rush Rebuttal, page 13, lines 15-16. KCP&L-GMO witness Rush also mentions Space Heating increases on page 8, lines 9-11. In rebuttal testimony, Staff expresses concern about bill impacts in assessing my recommendation to eliminate GMO-L&P's Space Heating service. I address Staff's rebuttal testimony in the next section of this testimony.

Q. DOES KCP&L WITNESS RUSH PROPOSE SPECIFIC TARIFF LANGUAGE TO ADDRESS SUCH CUSTOMER COMMITMENTS MENTIONED IN HIS FIRST POINT?

A. No. Absent specific tariff conditions, KCP&L-GMO would have an open-ended invitation to add new customers to a frozen rate if a customer simply indicated that he/she was "committed" to a using space heat equipment in a home the customer planned to build or remodel when that commitment may not exist or may not be realized until some point in the distant future. Freezing a rate is a first step towards its subsequent elimination when the number of customers on the rate has declined. If customers can simply choose the specially-priced Space Heating rate because of its lower price, the freeze would be ineffective.

Q. HAVE YOU CALCULATED THE GMO-MPS AND GMO-L&P SPACE HEATING BILL IMPACTS RESULTING FROM YOUR RECOMMENDATIONS IN RESPONSE TO KCP&L-GMO WITNESS RUSH'S SECOND POINT?

A. Yes. Surrebuttal Schedule FJC-2 provides the results of these calculations. The schedule shows the average winter and annual Space Heating and General Use customer bill changes for GMO-MPS and GMO-L&P if special prices for Space Heating services are eliminated and if the availability of specially-priced Space Heating services is frozen. Both of these alternatives reflect my recommended revenue shifts to remove the current inequities within the Residential class in the

collection of revenue seasonally and among the schedules in the winter for GMO-MPS and GMO-L&P.

Q. DO YOU HAVE ANY OBSERVATIONS ON THE SPACE HEATING BILL IMPACTS ASSOCIATED WITH YOUR RECOMMENDATIONS?

A. Yes, I have several observations. First, waiting to address the fact that Space Heating is underpriced for GMO-MPS and GMO-L&P until a subsequent rate case will simply lead to larger bill impacts in the future when this pricing problem is rectified.

Second, it is difficult to judge whether a particular impact is acceptable without a point of reference for comparison. However, it is possible that KCP&L's recent experience in Kansas may provide such a point of reference in this case. Surrebuttal Schedule FJC-2 includes the winter average use bill impacts resulting from the Kansas Corporation Commission's ("KCC's") Order in KCP&L 2010 rate case.[53] Both the average winter and annual bill impacts in Kansas were substantially larger than those resulting from my recommendations for GMO-MPS and GMO-L&P in this case.

[53] Order: 1) Addressing Prudence; 2) Approving Application, in Part; & 3) Ruling on Pending Requests Docket No. 10-KCPE-415-RTS, November 22, 2010. The KCP&L-Kansas rates used in the calculations in Surrebuttal Schedule FJC-2 became effective on December 1, 2010. These rates increased slightly (from $0.00002 per kWh to $0.0004 per kWh) on February 1, 2012 as a result of the KCC's Order on rate case expenses in this docket.

Third, while GMO-MPS and GMO-L&P Space Heating customers will experience higher winter bills with my recommendation, their annual bill impacts are considerably smaller.

Finally, there are many more General Use customers than Space Heating customers, and GMO-L&P General Use customers will have lower winter and annual bills.[54] And, GMO-MPS General Use customers will experience modest increases in their winter and annual bills if Space Heating service is eliminated and decreases in their winter and annual bills if Space Heating service availability is frozen.

3. STAFF REBUTTAL TESTIMONY

Q. WHAT POSITION DID STAFF WITNESS SCHEPERLE EXPRESS ON THESE RESIDENTIAL RATE DESIGN ISSUES IN HIS REBUTTAL TESTIMONY?

A. Staff witness Scheperle states his position as follows:

> Q. Does Staff agree with MGE's rate design recommendation to eliminate certain residential rate schedules?
> A. Not entirely. MGE recommends revenue-neutral adjustments in current rates on the residential schedules for both MPS and L&P. MGE also recommends that the separate Residential Electric Space Heating schedules be eliminated and the customers served under these rate schedules be transferred to the Consolidated General Use schedules. Staff recommends the Commission not go so far and, instead, make winter rate adjustments for L&P of an additional 6% for the MO 920

[54] KCP&L Application, Appendix 2 shows an average of 139,836 General Use customers and 74,478 Space Heating customers for GMO-MPS and an average of 35,519 General Use customers and 19,400 Space Heating customers for GMO-L&P.

and MO 922 winter energy block rate element. These adjustments will bring the winter season rates closer to GMO's cost to serve this class in the winter season. At this time, Staff does not support MGE's recommendation to eliminate the residential rate schedules mentioned above due to some customers receiving a large increase. For example, Staff computed an L&P residential customer with Space heating using 1,000 kWh per month in the summer and 1,500 kWh per month in the winter. Eliminating the L&P residential rate for space heating and transferring his usage to the residential General Use rate schedule would increase his annual bill by approximately 19%. Staff does not oppose retaining the all-electric residential rates, but recommends that customers on such rate schedule(s) be moved toward GMO's cost to serve them.[55]

Q. DO YOU HAVE ANY OBSERVATIONS ON STAFF WITNESS SCHEPERLE'S POSITION?

A. Yes. I have several observations. First, while Staff witness Scheperle recognizes that GMO-L&P's Residential Space Heating service is underpriced, I explain in my rebuttal testimony that his recommendation does not go far enough in correcting the inequities in the collection of current Residential revenue from customers taking service on the various rate schedules.[56]

Second, Staff witness Scheperle does not recommend a corresponding current revenue shift for GMO-MPS' Residential Space Heating service even though the service is underpriced in the winter.[57]

[55] Rebuttal Testimony of Michael S. Scheperle, Case No. ER-2012-0175, page 7, line 18 - page 8, line 11.

[56] Rebuttal Testimony of F. Jay Cummings (hereafter, "Cummings Rebuttal"), Case No. ER-2012-0175, page 3, line 8 - page 4, line 3.

[57] Cummings Rebuttal, page 4, line 5 - page 6, line 12.

Third, I do not agree with Staff witness Scheperle's calculation of the annual Space Heating bill impact associated with my recommended current revenue shift for GMO-L&P. Contrary to Staff's calculated 19 percent impact, my recommendation results in a 5 percent annual bill impact at Staff's kWh usage levels.[58] The details of the bill calculations are provided on Surrebuttal Schedule FJC-3.[59] Other bill impact calculations are provided on Surrebuttal Schedule FJC-2, explained in the previous section of this testimony.

Fourth, Staff witness Scheperle provides no assessment of my explanation of the ratemaking and policy considerations that support my recommendation to eliminate GMO-MPS' and GMO-L&P's Space Heating services.[60]

Finally, Staff witness Scheperle does not express an opinion on my alternative to freeze these service offerings for GMO-MPS and GMO-L&P.[61]

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[58] With the illustrative revenue increase provided in Schedule FJC-9B, the annual bill based on Staff's kWh usage levels would increase almost 11 percent over current rates.

[59] If the Staff's billing determinants provided in Staff's Response to Data Request MGE 271 were used in the calculations in Surrebuttal Schedule FJC-3, there would be only a small changes in the calculated annual bill impact. The impact would be 5.3 percent rather than 5.2 percent.

On June 25, 2011, GMO-L&P's rates were increased as result of the first phase of the revenue increase approved in Case No. ER-2010-356. The second phase of the revenue increase resulted in revised rates that became effective on June 25, 2012. The annual bill impacts calculated in Surrebuttal Schedule FJC-3 are based on current rates that became effective on June 25, 2012. Even if Staff had based its bill impact on "current" rates that became effective on June 25, 2011, the annual bill impact would be 7.8 percent.

[60] Cummings Direct, especially page 10, line 18 - page 18, line 19 and page 21, line 1 - page 23, line 2.

[61] *Id.*, page 23, line 4 - page 24, line 17.

4. CONCLUSIONS

Q. DO YOU HAVE CHANGES IN THE RECOMMENDATIONS THAT YOU MADE IN YOUR DIRECT TESTIMONY AS A RESULT OF THE PARTIES' REBUTTAL TESTIMONY PERTAINING TO RATE DESIGN?

A. No.

Q. DOES THIS CONCLUDE YOUR SURREBUTTAL 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
A 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 Surrebuttal 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.

Subscribed and sworn to before me this 10th day of October, 2012.

Notary Public

My Commission Expires:

7/29/2015
(SEAL)

SUSAN R LANDIS
My Commission Expires
July 29, 2015

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

Energy Efficiency and Environmental Impacts

Energy Efficiency of Energy Delivered to the Home[1]

	Extraction	Processing	Transportation[2]	Conversion	Distribution	Cumulative Efficiency
Natural Gas	97.00%	96.90%	99.00%	-	98.80%	91.90%
Oil	96.30%	93.80%	98.80%	-	99.30%	88.60%
Propane	95.90%	95.30%	98.60%	--	99.20%	89.30%
Electricity:						
Coal-Based	98.00%	98.60%	99.00%	32.70%	93.80%	29.30%
Oil-Based	96.30%	93.80%	98.80%	31.70%	93.80%	26.50%
Natural Gas-Based	97.00%	96.90%	99.00%	42.10%	93.80%	36.70%
Nuclear-Based	99.00%	96.20%	99.90%	32.70%	93.80%	29.20%
Other[3]-Based	--	--	--	56.00%	93.80%	49.70%
Electricity Weighted Average[4]	-	-	-	35.80%	-	31.90%

Source: *Source Energy and Emission Factors for Building Energy Consumption*, Prepared by the Gas Technology Institute for the Codes & Standards Research Consortium, August 2009.

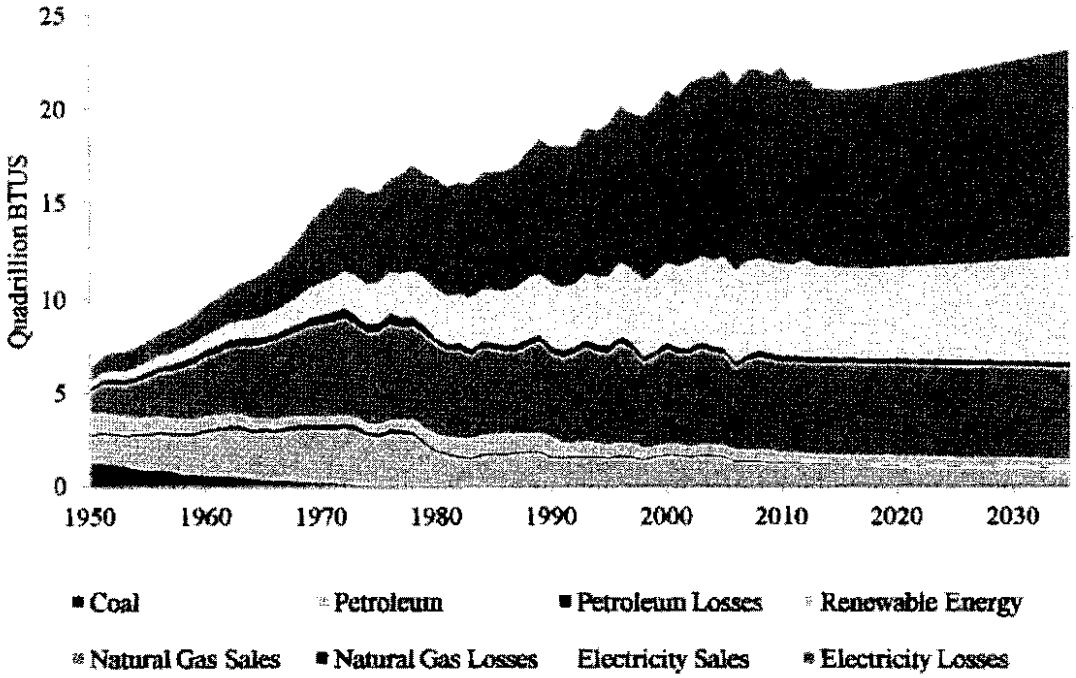
"--" indicates not applicable or no efficiency loss.
[1] Efficiency of energy delivered to the home refers to the energy used or lost, from the point of extraction to the residence, not including the end-use device.
[2] Transportation of natural gas from processing plant to local distribution system; transportation of fossil fuel to electricity generating plants.
[3] Includes renewable energy
[4] Current national weighted average mix of all power generation sources.

Source for table: American Gas Association, "A Comparison of Energy Use, Operating Costs, and Carbon Dioxide Emissions of Home Appliances," October 20, 2009, pages 6.

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

Energy Efficiency and Environmental Impacts

Residential Energy Consumption



Full-Fuel-Cycle Carbon Dioxide Equivalent Emissions For New Homes[1]
(Metric Tons of CO_2e[2] per Average Household Energy Use)

Natural Gas	6.4
Electricity[3]	10.1
Oil	9.0
Propane	7.6

[1] Space heating, water heating, cooking, and clothes drying only
[2] Includes impact of unburned methane gas
[3] Based on actual generating mix in 2007

Source for figure: American Gas Association, "Squeezing Every BTU: Natural Gas Direct Used Opportunities and Challenges," January 2012, Figure 4, page 18. Source for table: American Gas Association, "A Comparison of Energy Use, Operating Costs, and Carbon Dioxide Emissions of Home Appliances," October 20, 2009, page 11.

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

Residential Average Bill Impacts:
Comparison of KCP&L-Kansas To KCP&L-GMO[1]

Line	Description		General Use	Electric Space Heating
	(a)		(b)	(c)
1	Percentage Change Due to KCP&L-Kansas 2010 Rate Case			
2		Winter	-7.0%	28.2%
3		Annual	-0.7%	18.4%
4	Percentage Change Due to KCP&L-GMO Recommended Current Rate Change With Revenue Shift[2]			
5	**GMO-MPS:**			
6	Eliminate Space Heat			
7		Winter	1.9%	7.0%
8		Annual	0.0%	3.2%
9	Freeze Space Heat			
10		Winter	-3.4%	7.9%
11		Annual	-3.0%	3.7%

[1] Bill calculations based on average usage for each rate schedule in each season. These usage levels are calculated from Schedule PMN-3, pages 26 and 28, Docket No. 10-KCPE-415-RTS in Kansas, and from KCP&L-GMO's Responses to Data Request MGE-4 for GMO-MPS and MGE-5 for GMO-L&P in this case. The annual bill consists of eight winter billing months and four summer billing months.

[2] The bill increases on lines 7-11 will be larger if the Commission approves a Residential base revenue increase in this case. For example, with the assumed revenue increase illustrated in Schedules FJC-9A, the bill impacts would be as follows:

		General Use	Space Heat
GMO-MPS:			
Eliminate Space Heat			
	Winter	2.3%	9.8%
	Annual	1.4%	3.4%
Freeze Space Heat			
	Winter	-1.2%	10.7%
	Annual	-0.5%	4.0%

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

Residential Average Bill Impacts:
Comparison of KCP&L-Kansas To KCP&L-GMO

Line	Description		General Use	Electric Space Heating
	(a)		(b)	(c)
12	Percentage Change Due to KCP&L-Kansas 2010 Rate Case			
13		Winter	-7.0%	28.2%
14		Annual	-0.7%	18.4%
15	Percentage Change Due to KCP&L-GMO Recommended Current Rate Change With Revenue Shift[2]			
16	**GMO-L&P:**[3]			
17	Eliminate Space Heat			
18		Winter	-22.5%	10.9%
19		Annual	-9.6%	7.8%
20	Freeze Space Heat			
21		Winter	-12.2%	6.6%
22		Annual	-3.6%	5.0%

[2] The bill increases on lines 18-22 will be larger if the Commission approves a Residential base revenue increase in this case. For example, with the assumed revenue increase illustrated in Schedule FJC-9B, the bill impacts would be as follows:

		General Use	Space Heat
GMO-L&P:			
Eliminate Space Heat			
	Winter	-18.4%	16.9%
	Annual	-7.2%	13.7%
Freeze Space Heat			
	Winter	-8.1%	12.6%
	Annual	-1.2%	10.9%

[3] The GMO-L&P bill impacts would be smaller if KCP&L-GMO has provided the necessary billing determinants to retain a blocked rate structure upon elimination of Electric Space Heating.

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

GMO-L&P Residential Space Heating Bill Changes Due to Cost-Based Current Revenue Shift and Elimination of Space Heating

Line	Rate Component and Bills	Current Rates	Recommended Rates
	(a)	(b)	(c)
1	Service Charge	9.75	9.75
2	Energy Charge		
3	Summer		
4	All kWh	0.1117	0.1144
5	Winter		
6	First 1000 kWh	0.0776	0.0742
7	Over 1000 kWh	0.0521	0.0742
8	Monthly Bills:		
9	Summer at 1000 kWh	121.45	124.19
10	Winter at 1500 kWh	113.40	121.02
11	Annual Bills:		
12	Summer Season	485.80	496.76
13	Winter Season	907.20	968.16
14	Annual Bills	1393.00	1464.92
15	Percentage Change		5.2%

Sources:

Column b, lines 1-7: Schedule FJC-1B, column c, lines 3-11.

Column c, line 1: Schedule FJC-8B, column c, line 12.

Column c, line 4: Schedule FJC-1, column c, line 6 + Schedule 8, column C, line 22.

Column c, lines 6-7: Schedule FJC-8B, column b, line 15. The resulting winter bill on line 10 would be smaller if KCP&L-GMO had provided the necessary billing determinants in KCP&L-GMO's Response to Data Request MGE-2-1.