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MISSOURI PUBLIC SERVICE COMMISSION

COMMISSION STAFF DIVISION

TARIFF/RATE DESIGN

REBUTTAL TESTIMONY

OF

SARAH L.K. LANGE

KANSAS CITY POWER & LIGHT COMPANY
CASE NO. ER-2018-0145

and

KCP&L GREATER MISSOURI OPERATIONS
CASE NO. ER-2018-0146

Jefferson City, Missouri
August 2018

TABLE OF CONTENTS OF

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RENEWABLE ENERGY RIDER 2
SUBSCRIBER SOLAR RIDER 4
TIME OF USE MEEIA RATE PROPOSAL AND ORDERED STUDIES 7
SPECIAL CONTRACTS 11
REAL TIME PRICING TARIFFS ("RTP") 12
EXTENSION CHARGES 14
CLASS COST OF SERVICE 15
NON-RESIDENTIAL RATE DESIGN 22
RESIDENTIAL RATE DESIGN 26

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Q. Are you the same Sarah L.K. Lange who contributed to Staff's Cost of Service Report, and Staff's Report on Class Cost of Service and Rate Design ("CCOS Report")?

A. Yes. However, there has been a modification to the Staff organizational structure and I am now employed as a member of Staff's Tariff and Rate Design Department.

Q. What is the purpose of your rebuttal testimony?

A. I respond, in part, to the Company's proposals concerning the following tariff modifications:

(1) Renewable Energy Rider (additional testimony provided by Staff witnesses Cedric E. Cunigan, Brooke Richter, and Catherine F. Lucia)
(2) Subscriber Solar Rider (additional testimony provided by Staff witness Claire M. Eubanks, PE)
(3) Time of Use MEEIA Pilot (additional testimony provided by Staff witness Brad J. Fortson)
(4) Special Contracts
(5) Proposed Elimination of Real Time Rider
(6) Line Extension Provisions

I also respond to the production-related allocators relied upon by MIEC's witness Maurice Brubaker and KCPL's and GMO's witness Marisol E. Miller as it relates to interclass shifts in revenue responsibility recommended by those parties. Additional testimony is provided on

this subject by Staff expert/witness Robin Kliethermes. I also respond to the KCPL/GMO/MIEC's non-residential tail block rate design request, and the gradualism approach to changes in residential rate design advocated by Division of Energy witness Martin R. Hyman.

RENEWABLE ENERGY RIDER

Q. Did KCPL and GMO include tariffs intended to implement a Renewable Energy Rider in the tariff submission initiating this rate case?

A. Yes. In addition, KCPL and GMO witness Bradley D. Lutz describes the proposal in his prefiled direct testimony beginning on page 18.

Q. Does Staff generally support promulgation of tariffs to offer a Renewable Energy Rider to KCPL and GMO customers?

A. Yes. As described in Staff's CCOS Report by Staff witness Cedric E. Cunigan, Staff recommends promulgation of reasonable tariffs for both KCPL and GMO, to offer independent green tariff programs to provide increased renewable choices to customers.

Q. Are the tariffs included in KCPL's and GMO's tariff submission reasonable?

A. No. First, Staff recommends modifications to the design and operation of the Renewable Energy Rider, which necessitates tariff modifications to reflect those changes. Second, there are items omitted from the submitted tariffs that should be reflected in the tariffs, such as the price of participation under the rider and the process for enrolling under the rider.

Q. What are Staff's recommended modifications to the design and operation of the Renewable Energy Rider?

A. Staff witnesses Brooke Richter and Catherine F. Lucia provide Staff's recommendation concerning the interaction of the program with the fuel adjustment clauses ("FAC") of both GMO and KCPL, respectively, in their Rate Design Rebuttal testimonies. Staff witness Cedric E. Cunigan presents additional recommended modifications to the overall program design in his Rate Design Rebuttal testimony. I provide recommendations on modifications to the enrollment process, including disclosure of participation costs to participants, as well as general tariff design and clean up.

If Staff's primary recommendation regarding FAC treatment of the Renewable Energy Rider is implemented, few, if any, additional protections for non-participating rate payers need be built into the program tariff; Staff's recommended tariff under this approach is attached as Schedule SLKL-r1. However, if the Commission authorizes a program under which some risks created by this program are borne by non-participating ratepayers, additional customer protections are appropriate. Staff's recommended tariff under this approach is attached as Schedule SLKL-r2.[1]

Q. Why is it necessary to expand the enrollment section of the program tariff?

A. As proposed, the rate to be charged to customers participating under the Rider would not actually be a tariffed rate. Staff recommends implementing a process to include the rates applicable under the rider in the promulgated tariffs specific to the KCPL program and the GMO program. A version of this process is included in Staff's sample tariffs Schedules SLKL-r1 and SLKL-r2.

[1] While Staff recommends separate programs governed by separate tariffs be offered by each KCPL and GMO, the content of the respective tariff sheets is substantially identical between those two programs. For convenience, Staff provides a single specimen tariff.

SUBSCRIBER SOLAR RIDER

Q. Did KCPL and GMO include tariffs intended to implement a Subscriber Solar Rider in the tariff submission initiating this rate case?

A. Yes. In addition, KCPL and GMO witness Bradley D. Lutz describes the proposal in his prefiled direct testimony beginning on page 18.

Q. Does Staff generally support promulgation of tariffs to offer a Subscriber Solar Rider to KCPL and GMO customers?

A. Yes. As described in Staff's CCOS Report by Staff witness Claire M. Eubanks, PE, Staff recommends promulgation of reasonable tariffs for both KCPL and GMO, to offer subscriber solar programs to provide increased renewable choices to customers.

Q. Does Staff have concerns about the Subscriber Solar Rider tariffs submitted by KCPL and GMO?

A. Yes. First, as Staff witness Claire M. Eubanks, PE discusses in her CCOS rebuttal testimony, Staff has concerns that under KCPL's and GMO's proposal, the program would be shared across jurisdictions. Ms. Eubanks also provides other recommended refinements in her CCOS rebuttal testimony. Second, the subscription process proposed by KCPL and GMO would result in customers subscribing to the program before the Solar Block rate is established, which leaves customers with uncertainty as to the final price to which they are committing.

Q. Should the Commission order KCPL and GMO to refile the sheet bearing the Solar Block charge as the program more fully develops?

A. Yes. Staff recommends that the Commission order the following:

(1) As part of the compliance tariffs implementing this rate case, KCPL and GMO should recalculate the Solar Block cost consistent with

the outcome of this case, and based on the most recently-available engineering estimates. For example, the capital structure, rate of return, and return on equity inputs should be updated to reflect those ordered for each jurisdiction. The resulting value should be grossed up 5% - 10% and be denominated on the tariff sheet as a "not to exceed Solar Block Cost."

(2) Prior to initiating subscriptions, KCPL and GMO should refine the Solar Block calculation for final designs and sizing, and promulgate the updated tariff sheet, if applicable, as a "not to exceed Solar Block Cost."

(3) After completion of each resource, that jurisdiction should finalize the Solar Block calculation for actual costs incurred, update inputs for any intervening rate case outcomes, and promulgate the sheet as the "Solar Block Cost."

Q. On what basis do KCPL and GMO propose to calculate the Solar Block charge?

A. KCPL and GMO propose a Levelized Cost of Energy ("LCOE") calculation, with an "adder."

Q. Is this approach reasonable?

A. This approach is not entirely reasonable.

Q. Is an LCOE calculation the most appropriate basis for the calculation of the Solar Block charge in a regulated context?

A. No. This calculation accounts for the time value of money in a manner that is not consistent with the regulated utility context under which all ratepayers provide the return on, and depreciation expense for, an investment over its life. However, at the resource size contemplated by Staff, the rate calculated is not meaningfully different.[2]

[2] Staff witness Claire M. Eubanks, PE provides recommendations concerning overall program design and size in her rebuttal CCOS testimony and in the Staff's Report on Rate Design.

Q. What modifications are necessary to preserve KCPL's and GMO's general design, but lessen the risk passed on to non-participants?

A. Application of the cumulative value of the "adder" as an offset to rate base reduces the exposure of non-participants to the risk that the program revenues will not adequately offset the additional revenue requirement created by each jurisdiction's facility over the life of the facility. Similarly, revenues derived from subscription and transfer fees should cumulatively offset the applicable jurisdictional rate base.

Q. Are Staff's recommendations on modifications to the proposed rider interrelated?

A. Yes. Staff's recommendations to mitigate risk to non-participants while retaining the bulk of KCPL's and GMO's proposals, particularly as they relate to risk-sharing and participation commitments, are contingent upon adoption by the Commission of Staff witness Eubank's recommendation to limit overall program size and to restrict resource sharing across jurisdictions.

Q. Is use of a "Facilities" charge potentially confusing to participants?

A. Yes. KCPL and GMO non-residential rate schedules include a charge denominated as a "Facilities" charge that is generally established by a customer's annual non-coincident peak. The "Facilities" charge reflected in the proposed Solar Rider is based on the kWh monthly output of that Customer's subscribed block. These very different approaches to calculating a "facilities" charge could confuse customers. To avoid this confusion Staff recommends an alternative name be used in the Solar Rider, such as "Services and Access" charge.

Q. Is KCPL's and GMO's calculation of the "Facilities" / "Services and Access" charge reasonable?

A. While the underlying calculation and cost-basis proposed by KCPL and GMO is not unreasonable, the mechanism for adjusting the charge is more complicated than is merited for this pilot program. Staff recommends the reference to the Company's Class Cost of Service study be removed, and that the charge simply be adjusted by the changes to volumetric rates in future rate cases, unless that adjustment is demonstrated not to be reasonable. This approach is consistent with that implemented for the similar Ameren Missouri Solar Rider.

Q. Does Staff provide specific tariff modification recommendations to address these issues?

A. Yes. Attached as Schedule SLKL-r3 are Staff's recommendations to address issues, and to improve general operation and clarity.

TIME OF USE MEEIA RATE PROPOSAL AND ORDERED STUDIES

Q. Does Staff support Commission approval, at this time, of KCPL's and GMO's requested Time of Use ("ToU") rate pilots under a potential MEEIA Cycle Three?

A. No. As discussed by Staff witness Brad J. Fortson, it is premature to approve these designs for a potential MEEIA Cycle Three in a vacuum of what MEEIA Cycle Three may be in terms of the design of other programs and reasonable mechanisms.

Q. Does Staff's recommendation preclude potential inclusion of reasonably designed residential demand response rate pilots in MEEIA Cycle Three for either utility?

A. No. Establishment of ToU rate schedules is properly a matter for a general rate case. However, establishment of a rider (or riders) in MEEIA that would *adjust* the bills

experienced by residential general use customers participating in that rider consistent with a reasonable residential level demand response program would not require a general rate case.

Q. What commitment concerning ToU Rates did GMO make at pages 10 – 11 of the Commission-Approved Stipulation resolving Case No. ER-2016-0156?

A. The Commission-Approved Stipulation ("Stipulation") provided, in pertinent part:

> GMO will include in its direct filing in its next rate case or rate design case a study of TOU rates for GMO including TOU residential and SGS rates, critical peak rates, Electric Vehicle TOU rates for stand-alone charging stations, TOU rates applicable to Electric Vehicle charging associated with an existing account, Real Time Pricing, Peak Time Rebates, and other rate types which could encourage load shifting/efficiency. **GMO will propose rates based on this study no later than its next rate case or rate design case. [emphasis added]**

Q. Did GMO file such a study?

A. Yes, generally, in File No. EO-2018-0070.

Q. Did GMO propose rates based on this study in this case?

A. Because GMO's proposal is (1) contingent on establishment of a MEEIA Cycle Three at some point in the future, and (2) limited to a fraction of total customers, Staff cannot reasonably conclude that the proposed rates are what the Commission intended when it approved the Stipulation. Further, GMO's proposal is not open to SGS customers.

Q. Are Staff's recommended rate designs consistent with the rate proposal contemplated in the Commission-approved Stipulation?[3]

[3] The Report and Order in Case No. ER-2016-0285 at page 57 concerning KCPL states "Further, KCPL shall propose time-varying rate offerings for residential customers in its next rate case." The KCPL ToU pilot proposal is not inconsistent with this more general provision.

A. While the residential rate design and separately-metered EV charging rate design proposed by Staff were developed independent of GMO's study, these designs are generally consistent with those discussed in the Stipulation.

Q. Has KCPL pursued development of a residential Time of Use pilot or peak time rebate in specific geographical areas as a means of delaying distribution system upgrades, as discussed in the Report and Order in Case No. ER-2016-0285 at pages 12 and 13?

A. No. The KCPL-developed designs proposed as ToU rates could be consistent with such a program, but KCPL has not indicated plans to confine them to a particular geographic area or to study the impact of these pilots on identified geographic areas.

Q. Did GMO file a "Seasonal Rate Structure Study" in this case?

A. Yes. It is attached to the direct testimony of Ms. Miller.

Q. Did GMO conduct its CCOS in this case in a manner to account for seasonality?

A. No. At page 21 Ms. Miller states "Seasonality has been removed from the study because it more closely relates to rate design and is discussed in the rate design section of this testimony."

Q. Is seasonality discussed elsewhere in Ms. Miller's testimony, specifically in the rate design section?

A. No.

Q. Is a separate document denominated "KCP&L Greater Missouri Operations Company Seasonal Rate Structure Study December 12, 2017" ("Seasonal Study") attached to Ms. Miller's testimony as Schedule MEM-1?

A. Yes.

Q. In that document, what was the basis of the allocation of rate base to the residential class for study?

A. On page 18, the Seasonal Study states:

> The allocation of rate base to residential customers was made for each of these categories following the methods employed in the GMO CCOS study. Specifically, production was allocated using a combination of the average energy and the four highest monthly coincident peaks (CP), transmission was allocated on the average of the twelve monthly CPs, distribution was allocated on the annual non-coincident peak (NCP), and the general plant and non-plant categories were allocated using the weighted average percentage of the first three plant investment categories.

The Seasonal Study then presents a figure indicating that the costs allocated to the summer months are essentially double those allocated to the non-summer months, and goes on to state "This graphical presentation highlights the significance of the rate base allocation in the summer months of June through September. This result is mainly driven by the allocation of the production rate base using the combined average and peak methodology."

Q. Does GMO's seasonal study, in allocating production plant rate base dollars to the months of the year, take into account that GMO tends to experience residential class peaks in January that meet or exceed those experienced in the summer months?

A. It does not.

Q. Does weighting production plant related revenue recovery to the summer months have the impact of dampening the differences in cost causation between the non-summer months that this study was intended to explore?

A. It does.

Q. At page 7 Ms. Miller states "Furthermore, introducing additional seasons would lead to greater complexity and create potentially confusing price signals for customers due to the cyclical nature of the billing process." What is the cycle billing process?

A. Currently, KCPL and GMO prorate usage when calculating bills where a customer has some usage that falls under the Summer billing season, and some usage that falls under the Winter billing season, and vice versa.

Q. From Ms. Miller's statement, does it appear that KCPL and GMO are contemplating utilizing new billing tools to streamline the billing process?

A. No. From Ms. Miller's statement it appears that KCPL and GMO intend to continue prorating bills instead of using actual meter reads. In this case, KCPL and GMO have not proposed any tariff changes that may be necessary to replace the proration process with actual meter reads. With AMI meters and the new billing system, Staff is hopeful that actual meter reads may be used where possible. While I would agree that adding additional billing seasons would double the instances of proration if proration is the only option, with the new billing infrastructure it seems unlikely that proration would be necessary or appropriate.

SPECIAL CONTRACTS

Q. What justification do KCPL and GMO provide for the requested revision to the "Special Contracts" Schedule SCS?

A. Ms. Miller's schedule MEM-4 states "The Company is proposing to adjust the language within its Special Contract Service to reflect the proposed elimination of both the Real-Time Pricing ("RTP") program and the Two-Part Time-of-Use schedule."

Ms. Miller's testimony, at page 24, states "The special contract tariffs were streamlined to better align with business practices and the frozen RTP tariffs are being

proposed to be eliminated given the administratively burdensome nature to maintain these frozen tariffs."

Q. Should the business practices of KCPL and GMO differ from those described in the applicable tariffs?

A. No. It is concerning that Ms. Miller's language implies that current practices may not be complying with the existing tariffs.

Q. Reviewing the changes made to the Special Contract tariff, is there some link between the revisions to the Special Contract tariffs and the elimination of the RTP?

A. Yes. While KCPL and GMO request an extensive rewrite of the Special Contract tariffs, among the items revised is an elimination of a marginal price calculation to review whether a customer served under a special contract was covering the additional costs that customer causes. There is a reference in that language to, among other things, the RTP tariffs. Even if the RTP tariffs are eliminated, it is not necessary to remove the formula provided in the Special Contract tariffs, only the literal and passing reference to the RTP tariffs would need to be removed. However, because Staff does not recommend eliminating the RTP tariffs, no changes to the Special Contract tariffs are necessary or appropriate on the basis of the request made by KCPL and GMO.

REAL TIME PRICING TARIFFS ("RTP")

Q. Does Staff support the KCPL and GMO request to eliminate the RTP tariffs and modify the Special Contracts tariffs?

A. No. It appears that at the time of Ms. Miller's direct filing, she was apparently unaware that GMO currently has customers that take service under its RTP. While no

customers take service under the KCPL RTP, movement towards time variant rates is more reasonable than eliminating these schedules.

Q. Other than the mistaken belief that no customers took service under the RTPs, have KCPL and GMO provided any rationale for eliminating the RTPs?

A. Yes. Ms. Miller's testimony, at page 24, states "The special contract tariffs were streamlined to better align with business practices and the frozen RTP tariffs are being proposed to be eliminated given the administratively burdensome nature to maintain these frozen tariffs." Mr. Tim Rush has stated that the administration of the RTPs and the necessary manual billing is both administratively burdensome and costly.

Q. Did KCPL and GMO remove costs from their revenue requirements associated with administration of the RTPs concurrent to requesting to remove the RTPs?

A. No. No adjustment was made to KCPL's or GMO's direct revenue requirement.

Q. What is Staff's recommendation on this issue?

A. KCPL and GMO should simplify the RTPs to a less variable and less administratively cumbersome Time of Use rider for the General Service classes and Large Power Service class. This revision should incorporate input from customers currently served under the RTP, and also from interested prospective customers, as well as Staff and other interested parties to this case. KCPL and GMO should also provide a dollar value reduction to be applied to the respective revenue requirements in light of the simplification of the current manual bill process.

EXTENSION CHARGES

Q. Did the Commission's order in Case No. ER-2016-0285 provide instruction to KCPL regarding line extension policy revisions?

A. Yes. The Report and Order in Case No. ER-2016-0285, at pages 14 - 15, provides "In its next rate case, KCPL shall file a line extension tariff designed to account for geographic areas where there is underutilized distribution infrastructure."

Q. What is the focus of the KCPL and GMO proposed underutilized distribution infrastructure revision?

A. The modifications proposed appear designed to incent greenfield[4] development, as opposed to incenting adaptive reuse of existing structures. Specifically, the revised tariff would provide as follows:

> For Residential Subdivision Extensions, customers locating new developments on underutilized circuits will qualify for a reduction of the up-front cost of lot development equal to $200 per lot or $200 per building for multifamily buildings
>
> For Non-Residential Extensions, customers locating a Distribution Extension on underutilized circuits will receive 10% additional Construction Allowance associated with the extension. Customers receiving incentives for Beneficial Location of Facilities under the Company's Economic Development Rider will not qualify for this underutilized circuit adjustment

Q. Is encouragement of greenfield development as opposed to adaptive reuse consistent with Staff's understanding of the Commission's intent in establishing File. No. EW-2016-0041, the workshop proceeding under which these issues were initially raised?

[4] A greenfield project is constructed on unused land where there is little to no existing infrastructure.

A. It is not. Staff understood the focus of that proceeding to develop tariff provisions that would encourage restoration or adaptive reuse of areas where underutilized distribution infrastructure including secondary transformers and service drops would be returned to active service. The tariff revisions proposed by KCPL and GMO are not narrowly tailored to such instances, and may in fact be counterproductive to encouraging such adaptive reuse.

Q. How would the revisions proposed by KCPL and GMO be counterproductive to encouraging restoration and adaptive reuse?

A. The Commission ordered adoption of GMO's line extension policy in the last KCPL rate case had the effect of increasing the relative economic attractiveness (considering only upfront utility costs) of adaptive reuse over a greenfield project. By reducing the costs of a greenfield project under the newly proposed tariff revisions, it is likely that the relative economic attractiveness (considering only upfront utility costs) of the greenfield project would be restored.

CLASS COST OF SERVICE

Q. What is the primary driver of differences between KCPL's CCOS and Staff's CCOS?

A. Compared to Staff's CCOS, the Company allocates approximately $35.4 million dollars of additional revenue requirement.

Q. Does Mr. Brubaker's recommendation to rely on the KCPL study, and increase the Residential class's revenue requirement by an additional $14.8 million to $29.6 million, take into account this difference in revenue requirement?

A. No. Mr. Brubaker's recommendation necessarily assumes that MIEC supports approval of the full revenue requirement requested by KCPL and GMO. Even if the KCPL study on which he relies were reasonably allocated, the fact that the revenue requirement it allocates is overstated by such an amount indicates that classes found by the KCPL study to be under-contributing to revenue requirement may, in fact, be over-contributing revenues.

Q. What other concerns does Staff have with Mr. Brubaker's reliance on GMO's CCOS?

A. As stated in Staff's direct CCOS Report, GMO load data is not reliable enough to conduct a study. As part of GMO's last rate case, Case No. ER-2016-0156, GMO comprehensively modified its rate structures and designs applicable to all customer classes, which resulted in rate switching and changes in relevant billing determinants due to the reconfiguration of its customer classes. Class-level hourly load information is necessary to produce class-level coincident and non-coincident peak information, among other things. Because GMO is unable to provide 12 months of data for the customer classes as established under its reconfigured classes and rate structures, the information needed to produce a reasonably reliable class cost of service study for GMO, for purposes of recommending interclass revenue requirement shifts, is not available in this case.

Q. Is the KCPL hourly load data reliable for purposes of performing a CCOS?

A. Staff has reasonable confidence in the Staff-developed KCPL hourly load data it used in this case.[5] However, as discussed by Staff witness Robin Kliethermes, the KCPL-developed KCPL hourly load data that is the basis for many of the allocators in

[5] As discussed by Staff witness Seoung Joun Won in his revenue requirement rebuttal testimony, there is room for improvement in the development of the data KCPL and GMO provide to Staff, particularly with the move to AMI metering.

the KCPL study relied upon by MIEC produces class coincident and non-coincident demands that are not consistent with reasonable expectations and may be unreliable for purposes of a CCOS study.

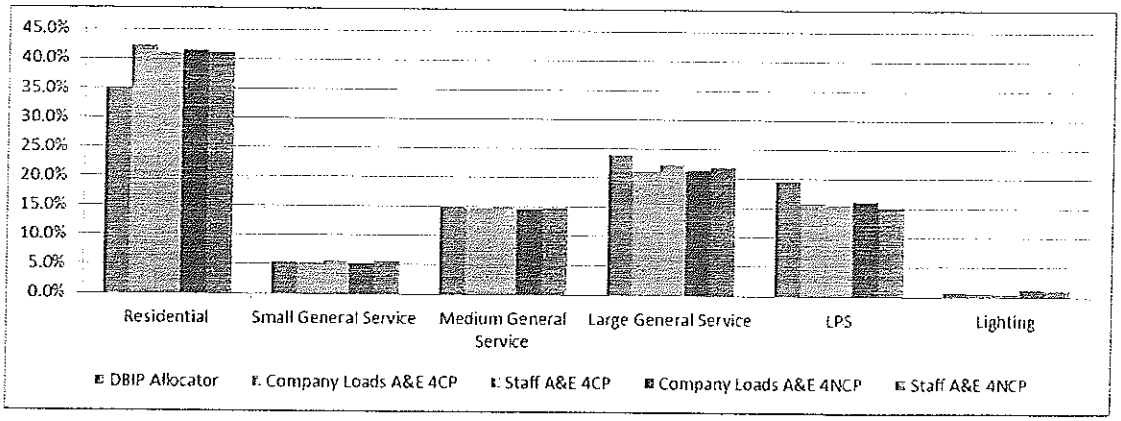
Q. How does Staff's calculation of an A&E 4CP compare to KCPL's calculation of an A&E 4CP, Staff's detailed Base-Intermediate-Peak ("DBIP"), and an A&E 4NCP?

A. Those results are provided in Table 1 and Chart 2, below: [6]

Table 1

	Residential	Small General Service	Medium General Service	Large General Service	LPS	Lighting
DBIP Allocator	35.1%	5.4%	14.9%	24.1%	19.7%	0.80%
Company Loads A&E 4CP	42.3%	5.3%	14.9%	21.1%	15.9%	0.56%
Staff A&E 4CP	40.9%	5.7%	15.2%	22.2%	15.5%	0.51%
Company Loads A&E 4NCP	41.5%	5.3%	14.6%	21.3%	16.1%	1.18%
Staff A&E 4NCP	41.2%	5.6%	14.9%	22.0%	15.3%	1.09%

Chart 2



[6] Although at the time of direct Staff provided its calculation of an A&E 4CP for KCPL for informational purposes only, I inadvertently included a formula error which resulted in a misstatement of the allocator. The correct allocator is reflected in Table 1.

Q. Have you reviewed the results of applying KCPL's A&E 4CP production-capacity allocator and KCPL's energy allocator to Staff's recommended revenue requirement for each utility?

A. Yes, those results are provided below. Please note, as discussed in Staff's Class Cost of Service Report, the hourly load data that are the basis of the GMO demand allocators are necessarily unreliable, and these GMO results (as well as the Company's GMO results) are not reliable for purposes of determining changes to interclass revenue responsibilities:

Table 3

	Residential	SGS	MGS	LGS	LPS	Lighting
KCPL's A&E 4CP at Staff's Revenue Requirement, % Change to Exactly Levelize RoR	6.17%	-20.21%	-6.77%	-5.20%	-8.32%	-17.76%
KCPL's A&E 4CP at Staff's Revenue Requirement, $ Change to Exactly Levelize RoR	$ 21,987,330	$ (10,299,845)	$ (8,569,310)	$ (9,539,988)	$ (11,060,330)	$ (1,594,614)

Chart 4

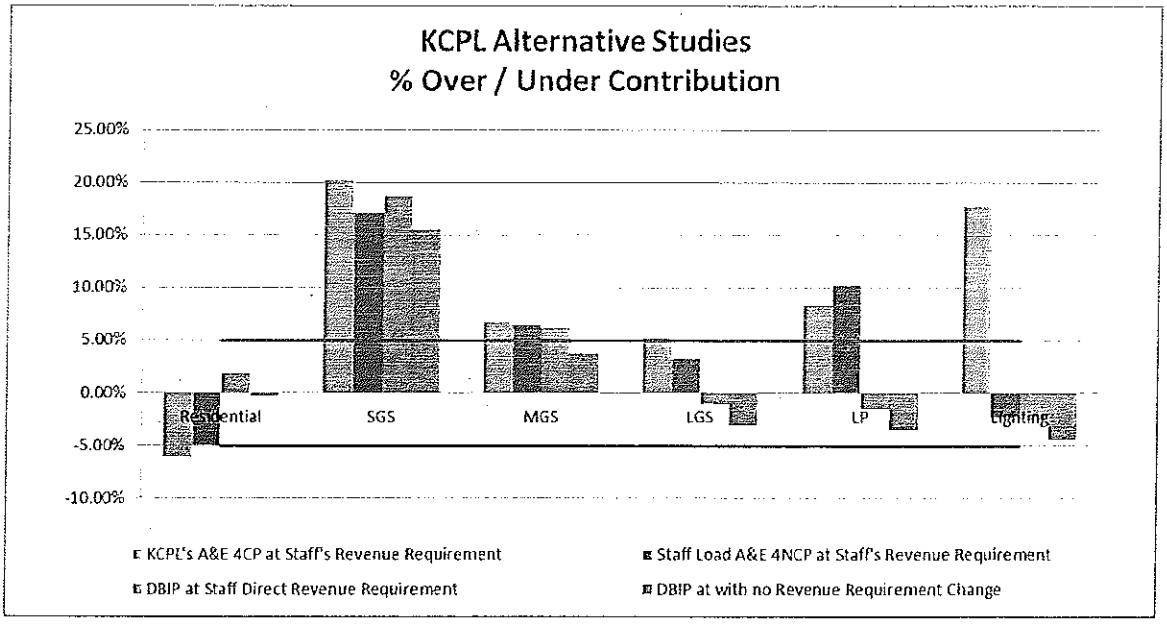


Table 5

	Residential	SGS	LGS	LPS	Lighting
GMO's A&E 4CP at Staff's Revenue Requirement, % Change to Exactly Levelize RoR	2.98%	35.45%	-8.06%	1.68%	-6.82%
GMO's A&E 4CP at Staff's Revenue Requirement, $ Change to Exactly Levelize RoR	$ 11,036,799	$ 31,608,579	$ (9,005,619)	$ 2,157,925	$ (985,530)

Q. Using Mr. Brubaker's method of recommending shifts of 25% - 50% of the difference between class revenues and allocated revenue requirement, what interclass revenue responsibility shifts would result from these allocated revenue requirements?

A. A comparison of the recommendations under MIEC's methodology to Staff's results for KCPL is provided below in Table 6:

Table 6

	Residential	SGS	MGS	LGS	LPS	Lighting
MIEC Direct Recommendation at 50%	$ 29,600,000	$ (4,800,000)	$ (5,100,000)	$ (11,800,000)	$ (7,100,000)	$ (800,000)
MIEC Direct Recommendation at 25%	$ 14,800,000	$ (2,400,000)	$ (2,600,000)	$ (5,900,000)	$ (3,500,000)	$ (400,000)
Staff results at 50% of Levelized RoR	$ 10,993,665	$ (5,149,923)	$ (4,284,655)	$ (4,769,994)	$ (5,530,165)	$ (797,307)
Staff results at 25% of Levelized RoR	$ 5,496,833	$ (2,574,961)	$ (2,142,328)	$ (2,384,997)	$ (2,765,083)	$ (398,654)
MIEC 50% Recommendation Applied to DBIP Results	$ (3,034,232)	$ (4,842,938)	$ (3,949,069)	$ 1,029,607	$ 1,120,228	$ 138,030
MIEC 25% Recommendation Applied to DBIP Results	$ (1,517,116)	$ (2,421,469)	$ (1,974,535)	$ 514,803	$ 560,114	$ 69,015

A comparison of the recommendations under MIEC's methodology to Staff's results for GMO is provided below in Table 7:

Table 7

	Residential	SGS	LGS	LPS	Lighting
MIEC Direct Recommendation at 50%	$ 11,800,000	$ (8,700,000)	$ (1,000,000)	$ (2,400,000)	$ 200,000
MIEC Direct Recommendation at 25%	$ 5,900,000	$ (4,300,000)	$ (500,000)	$ (1,200,000)	$ 100,000
Staff results at 50% of Levelized RoR	$ 5,518,400	$ 15,804,290	$ (4,502,810)	$ 1,078,963	$ (492,765)
Staff results at 25% of Levelized RoR	$ 2,759,200	$ 7,902,145	$ (2,251,405)	$ 539,481	$ (246,383)

Q. Does Staff recommend implementing either the shifts proposed by MIEC or the shifts developed from applying Mr. Brubaker's recommendation to Staff's CCOS Results?

A. No. First, the A&E 4CP is not as reasonable an allocator as Staff's DBIP to represent KCPL's and GMO's participation in the integrated market. Second, Mr. Brubaker's recommendation exceeds the reasonable limits of precision of a CCOS, as explained more fully below. Finally, regarding GMO, as noted, no reliable class hourly load data exists for the classes as currently constituted, and these hourly loads are the source for the peak information utilized for both CP and NCP demands and relied upon for allocation of production-capacity related costs. Staff witness Robin Kliethermes provides additional testimony concerning the reliance of the Companies and Mr. Brubaker on a CP study, as well as a discussion of Staff's concerns with (1) KCPL's A&E 4CP calculation and (2) KCPL's potential over-allocation of a miscellaneous plant account to the KCPL jurisdiction and the KCPL residential class.

Q. Why is the A&E method, regardless of basis on CP or NCP demands, not as reasonable as the DBIP method for allocating production-capacity costs?

A. I agree with Mr. Brubaker's testimony on page 9 that it is not fair to say that "a kilowatt-hour is a kilowatt-hour." The cost of producing a kWh of energy will vary depending on which plant is producing that energy, and which plants are operating to produce energy at a given time. In the case of an integrated energy market, the market cost of a kWh will vary depending on which plants in the region are dispatched to produce energy, and what losses and congestion separate the point at which energy is produced from the point in which it is utilized. However, unlike Mr. Brubaker, I take these realities into account in developing

allocators for Staff's CCOS. Unlike the other submitted CCOS studies, Staff's energy–related allocations are based on an assignment of time-differentiated pricing.

Similarly, a kW is not a kW. As I discussed and demonstrated in the CCOS Report, base capacity is quite expensive to install and operate, while peaking capacity is relatively cheap to install and operate. The cost of intermediate capacity is somewhere between those two.

Q. Do KCPL, GMO, or Mr. Brubaker address the relative capacity costs of different unit types in the A&E 4CP study?

A. No. While the A&E 4CP study does weight the capacity allocation by load factor, it effectively treats the capacity cost of a nuclear plant as equal to the capacity cost of a simple cycle gas plant. As discussed and demonstrated in the CCOS Report, these types of units have very different installed capacity costs. Of the studies filed in these cases only Staff's DBIP study recognizes this disparity in capacity cost.

Q. Why is it unreasonable to apply CCOS results to a final ordered revenue requirement at a high level of precision?

A. A CCOS allocates the dollars in each and every account described in the Accounting Schedules to the various classes. Which dollars go in which account is not resolved until the Commission enters its final order, and even then, the specificity needed to conduct a class cost of service study is rarely provided. The data relied upon for allocating those dollars among accounts is sometimes in dispute and may not be resolved prior to the Commission order. Given the length of time in which a case must be completed, the complexity of the revenue requirement calculation, and the incredibly diverse mix of

approaches to get to the same revenue requirement, it is not reasonable to assert that any class cost of service study is reliable down to the percentage point.

NON-RESIDENTIAL RATE DESIGN

Q. Have you reviewed Mr. Brubaker's MEB-COS-2 and MIEC's discussion of the EEI Rates Report for a 50 MW industrial customer?

A. Yes. Mr. Brubaker states that the "EEI Typical Bills and Average Rates Report" indicates that the KCPL rates for an industrial customer with 50 MW of demand and a 68% load factor results in an average cost of $0.0849/kWh.

Q. Does that figure surprise you?

A. Yes. There are a number of factors to consider, such as whether the EEI reported values include riders such as the FAC or MEEIA, which tend to increase customer bills. How the actual load shape varies through the year is likewise an important consideration. For example, does the shape assume a demand of exactly 50 MW every month (that would be very unusual for an actual customer), and does the energy usage tend toward summer or non-summer months? However, I reviewed the rate calculation for a KCPL LPS customer, taking service at secondary voltage, with a demand of 50 MW each month, and a load factor of 68%, applied evenly throughout the year (this would tend to result in a higher average cost per kWh than a customer with greater than average winter usage), and found that the KCPL bill would result in an average cost per kWh of $0.07768 for service at secondary voltage, or $0.06692/kWh for service at transmission voltage. This review is demonstrated in the following calculations:

Calculation 8

LPS at Secondary			Summer	Non-Summer	Summer	Non-Summer
Bill Count	4	8	$ 1,149.23	$ 1,149.23	$ 4,597	$ 9,194
Facilities Demand	200,000	400,000	$ 3.849	$ 3.849	$ 769,800	$ 1,539,600
Base Billed Demand $	$ 1,607,087	$ 2,325,932	1	1	$ 1,607,087	$ 2,325,932
Base first 180 HOU	36,000,000	72,000,000	$ 0.09350	$ 0.07926	$ 3,366,000	$ 5,705,720
Base next 180 HOU	36,000,000	72,000,000	$ 0.05557	$ 0.05055	$ 2,000,520	$ 3,639,600
Base over 360 HOU	27,280,000	54,560,000	$ 0.02667	$ 0.02640	$ 727,558	$ 1,440,384
				Seasonal Totals:	$ 8,475,561	$ 14,661,430
					Total $:	**$ 23,136,992**
					$/kWh:	$ 0.07768

Calculation 9

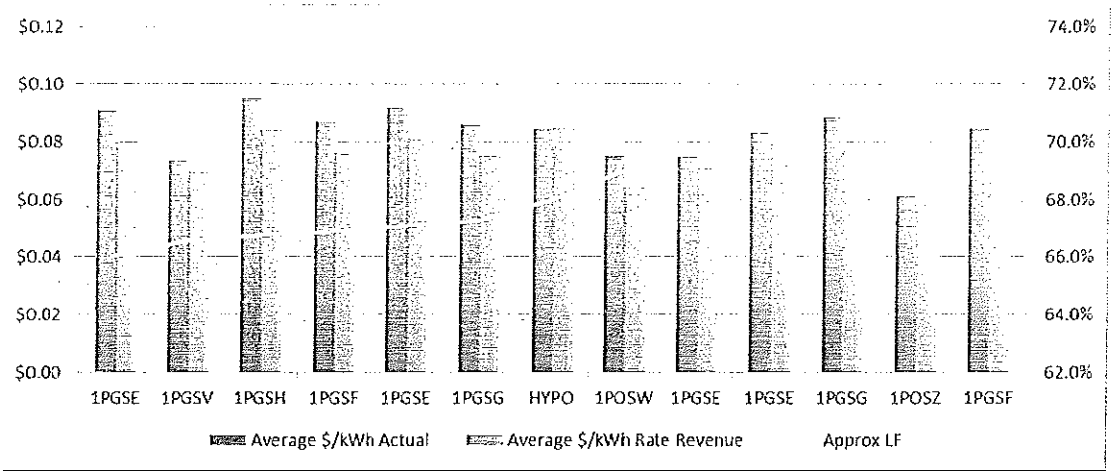
LPS at Transmisison			Summer	Non-Summer	Summer	Non-Summer
Bill Count	4	8	$ 1,149.23	$ 1,149.23	$ 4,597	$ 9,194
Facilities Demand	200,000	400,000	$ -	$ -	$ -	$ -
Base Billed Demand $	$ 1,537,955	$ 2,226,028	1	1	$ 1,537,955	$ 2,226,028
Base first 180 HOU	36,000,000	72,000,000	$ 0.08949	$ 0.07585	$ 3,221,640	$ 5,461,200
Base next 180 HOU	36,000,000	72,000,000	$ 0.05319	$ 0.04837	$ 1,914,840	$ 3,482,640
Base over 360 HOU	27,280,000	54,560,000	$ 0.02551	$ 0.02525	$ 695,913	$ 1,377,640
				Seasonal Totals:	$ 7,374,944	$ 12,556,701
					Total $:	**$ 19,931,646**
					$/kWh:	$ 0.05692

Q. Do the results of your sample calculations surprise you?

A. No. Including FAC and MEEIA charges, current KCPL LPS customers pay from approximately $0.06155 per kWh (customer load factor of 73%) up to approximately $0.12819 per kWh (customer load factor of 39%). If reviewing only retail rate revenue, the same customers would pay approximately $0.05842 to $0.11737 per kWh when excluding MEEIA and other charges. KCPL's existing customers with load factors around 68% do not benefit from the significant demand charge discounts experienced by a customer of the size discussed by Mr. Brubaker. Sample billing information for customers with load factors around 68% is provided below in Chart 9. Chart 9 provides the customers' load factors and

average cost per kWh, with the level of voltage identified, and Mr. Brubaker's hypothetical customer provided for comparison:

Chart 9



Q. Would you expect the average cost per kWh for the customers in Chart 9 to be higher or lower than an industrial customer with 50 MW of demand and a 68% load factor?

A. Due to KCPL's declining block demand rate design, these customers all pay a higher average cost per kW than a customer with 50 kW of demand, despite the similar load factors.

Q. Does either your rate calculation, above, or the EEI rate report take into account discounts provided under the newly-authorized statutory EDRs?

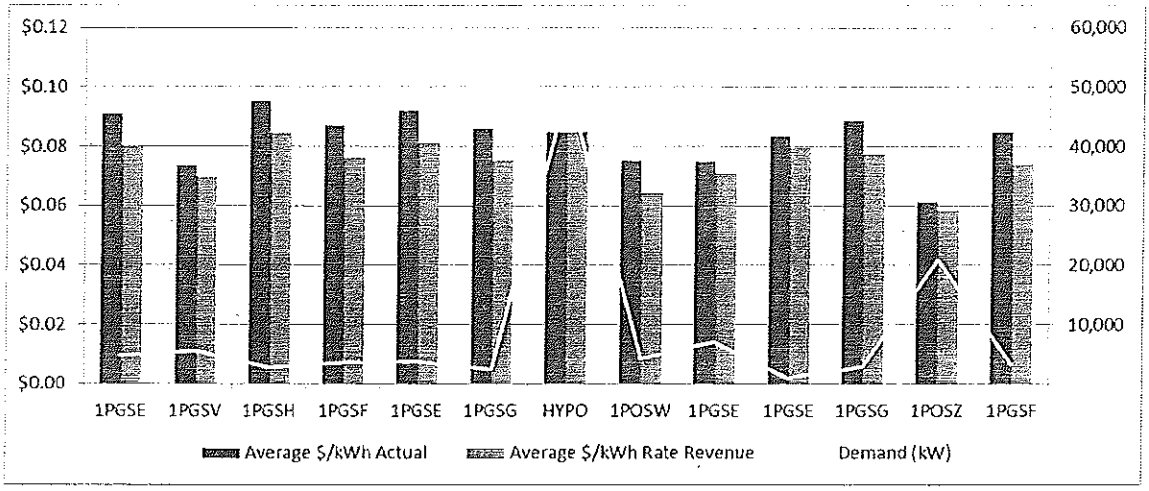
A. I did not adjust my rate calculation to reduce the rates for EDRs that may be developed in the future under Section 393.1610 or for the special rates authorized under Section 393.355 for new customers of 50MW or greater. Given the amount reported, I do not believe the EEI rate report takes into account the statutory EDR discounts or special rates. Mr. Brubaker did not provide information concerning whether the EEI rates he provided for

other utilities do or do not include special discounts that this or other commissions or legislatures may provide to vary cost-based rates to induce economic activity or promote specific public policy goals.

Q. Is a 50MW customer an average size LPS customer on the KCPL or GMO system?

A. Absolutely not. Currently, I am not aware of a customer of any investor owned utility in the State of Missouri that is 50 MW. The demands of actual KCPL customers experiencing load factors around 68% load factor are provided below in Chart 10:

Chart 10



Further, a single 50MW customer would increase the size of the existing KCPL LPS class by 10 - 12%.

Q. Have you reviewed the LPS rate designs proposed by KCPL, GMO, and MIEC?

A. Yes. Depending on the level of increase, these proposals generally would disproportionately increase first and second block energy charges, and/or decrease tail block energy charges.

Q. Is the KCPL/GMO/Brubaker rate design proposal reasonable?

A. No. The recommendation to disproportionately increase the second energy block is movement in the wrong direction. However, at the level of increases/decreases contemplated by the parties to this case, it is likely that the differences in methodology will not appear after rounding is applied. That being said, the MIEC recommendation to decrease the tail block rate in the event of an overall revenue reduction is unreasonable, as is demonstrated in Staff's direct CCOS Report at pages 43 through 46.

Q. Are there specific concerns with the application of the rate design Ms. Miller recommends for GMO's LGS and LPS classes?

A. Yes. For the seasonal energy charges, Ms. Miller recommends a partially inverted winter season rate design, under which the first hours use block and the third hours use block is billed at a lower rate than the second hours use block.

Q. What rationale does GMO provide for this design?

A. No explanation is provided.

RESIDENTIAL RATE DESIGN

Q. Have you reviewed DE witness Martin R. Hyman's rate design direct testimony at page 3?

A. Yes. At page 3 Mr. Hyman references the concept of "gradualism," and he expands on this concept at page 9, stating "'Gradualism' refers to the concept that rates

should not change suddenly, and introducing rates gradually minimizes extraordinary bill impacts. This is closely related to the avoidance of 'rate shock.'"

Q. Do you agree with these statements conceptually?

A. Yes. Gradualism and the avoidance of rate shock are important, though not necessarily dispositive considerations in recommending reasonable rate designs. Similarly, Mr. Hyman's references to efficiency, affordability, and relating rates charged to the costs incurred by their causers are likewise unremarkable, but foundational considerations to rate design.

Q. Is Staff's direct recommended rate design sufficiently gradual and affordable, while encouraging efficiency and reasonably reflecting cost-causation?

A. In my opinion, yes; especially in the context of Staff's overall recommended revenue requirement and recommended intraclass revenue responsibility shifts, and particularly in the context of Staff's recommendation to slightly increase customer charges, Staff's recommendation meets the aforementioned goals of rate design while not exceeding the level of customer impact experienced by most customers in recent KCPL and GMO rate cases. Likewise, Staff's recommended rate design is intended to educate customers in the concept of time-differentiated rates, without exceeding the level of revenue volatility that KCPL and GMO currently experience under the existing residential rate designs.

Q. In the event a more gradual implementation of the mandatory ToU residential rate design is desired, has Staff prepared alternative methods of implementing its recommended rate design?

A. Yes. Staff provides the following alternatives for consideration, with the recommendation that if any of these alternatives are adopted they be used as a means of customer education towards full implementation of Staff's direct-recommended rate design:[7]

Scenario 1:

Step 1: For the billing months of October 2018 – May 2019, Staff's recommended ToU rates are "shadow billed" over the adjusted and slightly modified current rate designs. Customers would be charged based on the modified current rate designs, but customers who review their bills would receive information about how bills will be charged going forward:

		Existing KCPL Rate	Existing GMO Rate	Mitigation Alternative 1 Proposed KCPL Rate	Mitigation Alternative 1 GMO
Summer Gen Use	0-600	$ 0.12830	$ 0.12050	Consolidate Schedules onto Mandatory ToU	Mandatory ToU
	600-1000	$ 0.14916	$ 0.12050		
	1000+	$ 0.14916	$ 0.12050		
Summer Space Heat	0-600	$ 0.13806			
	600-1000	$ 0.13806			
	1000+	$ 0.13806			
Revenue Shift				0%	0%
Winter Gen Use	0-600	$ 0.12231	$ 0.10625	$ 0.11811	$ 0.09893
	600-1000	$ 0.07396	$ 0.07800	$ 0.07142	$ 0.07263
	1000+	$ 0.06561	$ 0.07800	$ 0.06336	$ 0.07263
Winter Gen Use and Space Heat 1 Meter	0-600	$ 0.09703	$ 0.10625	$ 0.11811	$ 0.09893
	600-1000	$ 0.09703	$ 0.06035	$ 0.07142	$ 0.07263
	1000+	$ 0.06098	$ 0.04991	$ 0.06336	$ 0.07263
Winter Gen Use and Space Heat 2 Meters	0-600	$ 0.12412		$ 0.11811	
	600-1000	$ 0.07441		$ 0.07142	
	1000+	$ 0.06219		$ 0.06336	
Winter Separately Metered Space Heat	All kWh	$ 0.06239		$ 0.08430	

Step 2: For "summer" billing months, Staff's recommended summer "no shift" ToU rates would be in effect.

[7] All example rates shown below are designed to collect current Residential Class revenues by utility and reflect the currently applicable customer charges.

Step 3: For "non-summer" billing months after the 2018 - 2019 winter season, Staff's recommended non-summer ToU rates without a seasonal revenue recovery shift would be in effect. See Schedule SLKL-r4.

Scenario 2:

Step 1: For the billing months of October 2018 – May 2019, customer bills will be calculated on Staff's recommended "with shift" ToU rates and either of the adjusted modified rate designs indicated below:[8]

		Existing KCPL Rate	Existing GMO Rate	Mitigation Alternative 2 Proposed KCPL Rate	Mitigation Alternative 2 GMO	Mitigation Alternative 3 Proposed KCPL Rate	Mitigation Alternative 3 GMO
Summer Gen Use	0-600	$ 0.12830	$ 0.12050	Consolidate Schedules onto Mandatory ToU	Mandatory ToU	Consolidate Schedules onto Mandatory ToU	Mandatory ToU
	600-1000	$ 0.14916	$ 0.12050				
	1000+	$ 0.14916	$ 0.12050				
Summer Space Heat	0-600	$ 0.13806					
	600-1000	$ 0.13806					
	1000+	$ 0.13806					
Revenue Shift				10%	5%	10%	5%
Winter Gen Use	0-600	$ 0.12231	$ 0.10625	$ 0.12992	$ 0.10388	$ 0.11973	$ 0.09702
	600-1000	$ 0.07396	$ 0.07800	$ 0.07856	$ 0.07626	$ 0.11973	$ 0.09702
	1000+	$ 0.06561	$ 0.07800	$ 0.06969	$ 0.07626	$ 0.06423	$ 0.07122
Winter Gen Use and Space Heat 1 Meter	0-600	$ 0.09703	$ 0.10625	$ 0.12992	$ 0.10388	$ 0.11973	$ 0.09702
	600-1000	$ 0.09703	$ 0.06035	$ 0.07856	$ 0.07626	$ 0.11973	$ 0.09702
	1000+	$ 0.06098	$ 0.04991	$ 0.06969	$ 0.07626	$ 0.06423	$ 0.07122
Winter Gen Use and Space Heat 2 Meters	0-600	$ 0.12412		$ 0.12992		$ 0.11973	
	600-1000	$ 0.07441		$ 0.07856		$ 0.11973	
	1000+	$ 0.06219		$ 0.06969		$ 0.06423	
Winter Separately Metered Space Heat	All kWh	$ 0.06239		$ 0.09273		$ 0.10123	

Customer bills will reflect the lower of the two calculations. In the event that this approach results in a material revenue shortfall to KCPL and GMO due to the numerical difference between the two calculations, Staff would be willing at a later time to consider allowing KCPL and GMO to defer the amount of the shortfall to a regulatory asset account for potential recovery in a future general rate case.

[8] The Alternative 2 design generally maintains the General Use rate designs and applies this design to the other residential rate schedules, as well as implements the indicated seasonal energy revenue shift. The Alternative 3 design greatly flattens the General Use rate designs and applies this design to the other residential rate schedules, as well as implements the indicated seasonal energy revenue shift. The rates produced by the Alternative 3 design closely mimics those found under Staff's ToU proposals, but would continue the existing rate design's practice of determining the applicable rate by the relative time within the month in which usage occurs, as opposed to by the time of day in which usage occurs.

Step 2: For "summer" billing months, Staff's recommended summer "with shift" ToU rates would be in effect.

Step 3: For "non-summer" billing months after the 2018-2019 winter season, Staff's recommended non-summer with a seasonal revenue recovery shift ToU rates would be in effect.

Q. How should the revenue-neutral rates prepared for direct be adjusted to match the residential class revenue requirement established in this case?

A. While final design may be subject to refinement based on the overall level of revenue to be recovered through the energy charges, Staff's recommended process is set out below, with an example provided in Schedule SLKL-r4:

1. Set Customer Charge for both KCPL and GMO
2. Implement any seasonal energy revenue shifts, as applicable, for both KCPL and GMO
3. KCPL: Set Summer on-Peak to equal usage rate for 600 kWh+
    a. Solve for KCPL Summer off-Peak rate
    b. If difference is more than $0.05, adjust rates to a differential of approximately $0.05
4. Both KCPL and GMO: Set Winter off-Peak rate to equal revenue-weighted average of third block and space heating rates
    a. Solve for on-Peak rate
    b. If difference is more than $.05, adjust rates to a differential of approximately $0.05
5. GMO: Factor direct-proposed Summer rates to recover indicated revenue requirement

Q. How does this process maintain gradualism?

A. For summer months, for KCPL customers, customers will be paying essentially the same rates paid under the current rate schedule, except that the difference in charges experienced will be based on the time of the day of the usage, not the point in the month of usage. For GMO customers during summer months, the basis of the price signal and revenue recovery will be the same as stated for KCPL customers, and the rate impact will

be similar to that imposed on KCPL customers in the last rate case in which summer inclining block rates were imposed.

For winter months for both utilities' customers, while there is an overall flattening of the existing rate designs, the price signal and revenue recovery mechanism will be similar to that currently experienced by a typical customer on the existing rate designs. The key difference is that the difference in charges experienced will be based on the time of the day of the usage, not the point in the month of usage.

Q. In Staff's direct CCOS report, did you inadvertently misidentify a rate schedule in one of your recommendations?

A. Yes, at pages 42 - 43 of the CCOS Report, if the Commission did not adopt Staff's mandatory residential ToU recommendations, I recommended elimination of the Frozen All Electric Rate Schedule and consolidation into the Space Heating rate schedule for KCPL. I should have referred to elimination of the Separately Metered Space Heating schedule.

Q. Does this conclude your CCOS rebuttal testimony?

A. Yes.

BEFORE THE PUBLIC SERVICE COMMISSION

OF THE STATE OF MISSOURI

In the Matter of Kansas City Power & Light Company's Request for Authority to Implement a General Rate Increase for Electric Service	))))	Case No. ER-2018-0145
		and
In the Matter of KCP&L Greater Missouri Operations Company's Request for Authority to Implement a General Rate Increase for Electric Service	))))	Case No. ER-2018-0146

AFFIDAVIT OF SARAH L. K. LANGE

STATE OF MISSOURI)
) ss.
COUNTY OF COLE)

COMES NOW SARAH L. K. LANGE, and on her oath declares that she is of sound mind and lawful age; that she contributed to the foregoing *Rebuttal Testimony* and that the same is true and correct according to her best knowledge and belief.

Further the Affiant sayeth not.

Sarah L. K. Lange

Sarah L. K. Lange

JURAT

Subscribed and sworn before me, a duly constituted and authorized Notary Public, in and for the County of Cole, State of Missouri, at my office in Jefferson City, on this 3rd day of August, 2018.

DIANNA L. VAUGHT
Notary Public - Notary Seal
State of Missouri
Commissioned for Cole County
My Commission Expires: June 28, 2019
Commission Number: 15207377

Dianna L. Vaught

Notary Public

PURPOSE

This Program is designed to provide non-Residential Customers a voluntary opportunity to purchase Renewable Energy, in addition to service provided through a generally available rate, from Renewable Energy sources that the Company contracts.

Following Commission approval of this Rider, the Company will endeavor to procure the Renewable Energy sources necessary to fulfill Customer requests for service under this Program. Pricing and related terms will be updated to reflect these sources.

AVAILABILITY

Customer accounts receiving Unmetered, Lighting, Net Metering, or Time-of-Use Service are ineligible for this Program while participating in those service agreements. This Program is not available for resale, standby, breakdown, auxiliary, parallel generation, or supplemental service.

Service under this Program is available on a limited and voluntary basis, at the Company's option, to non-Residential Customers currently receiving permanent electric service from the Company through Schedule SGS, MGS, LGS, LPS, SGA, MGA, LGA, or PGA, with an annual average monthly peak demand greater than 200 kW. At the Company's sole approval, Customers that have an aggregate electric load of at least 2.5 MW based upon peak annual demand and an average of 200 kW per account, or Governmental/Municipal Customers as established by Section 46.040, RSMo, or pursuant to Article VI, Section 15 of the Missouri Constitution and applicable enabling statutes enacted by the General Assembly thereunder, may combine separate accounts to participate in this Program.

~~Customers will be enrolled and subscribed on a first-come, first-served basis. Customers applying but not allowed to subscribe due to Renewable Energy resource unavailability will be placed on a waiting list and may be offered the opportunity to subscribe if subscription cancellations or forfeitures occur. Customers approved for aggregation of accounts may choose to participate in part or remain on the list as a consolidated group, depending on resource availability.~~ Participants may cancel their subscription at any time subject to any net cost of the remaining Renewable Energy for the term. ~~Service hereunder is provided to one end-use Customer and may not be redistributed or resold.~~

Within any limits prescribed by the individual tariffs, the Company will combine the subscription requirements for all Company jurisdictions in executing the power purchase agreement(s) for the Renewable Energy resource. The combined Program will be initially limited to a minimum total load of 100 megawatts (MW) and a maximum total load of 200 MW, split equally between the Company jurisdictions. The Company reserves the right to reapportion the allocation between Companies in response to Customer subscription. The production from the combined power purchase agreement(s) for the Renewable Energy resource will be allocated among the various Company jurisdictions based on the respective subscriptions within that jurisdiction. The limit will be re-evaluated if or when the 200 MW limit is reached. Additional subscriptions will be made available at the sole discretion of the Company.

DEFINITIONS

For purposes of this Program the following definitions apply:

i. CONDITIONAL PARTICIPANT AGREEMENT – The agreement between the Company and Customer, utilized for gauging customer interest in a given Resource Procurement Period. This agreement may be provided and executed electronically.

i. PARTICIPANT – The Customer, specified as the Participant in the Participant Agreement, is the eligible Customer that has received notification of acceptance into the Program.

ii. PARTICIPANT AGREEMENT – The agreement between the Company and Customer, utilized for enrollment and establishing the full terms and conditions of the Program. Eligible Customers will be

required to sign the Participant Agreement prior to participating in the Program. This agreement may be provided and executed electronically.

iii. POWER PURCHASE AGREEMENT (PPA) – an agreement or contract between a resource owner and the Company for renewable energy produced from a specific renewable resource.

iv. RENEWABLE ENERGY CREDITS – also known as Renewable Energy Certificates or RECs, represent the environmental attributes associated with one (1) megawatt-hour of renewable electricity generated and delivered to the power grid.

v. RENEWABLE ENERGY – energy produced from a renewable resource as defined in 4 CSR 240-20.100(1)(N) and associated with this Program. Renewable resources procured will be utilized for this program or similar voluntary, green programs.

vi. RESOURCE PROCUREMENT PERIOD – the period of time in which the Company ~~will~~shall, if the subscriptions on the waiting list warrant such effort, attempt to obtain a renewable resource to serve the Participation Agreements queued on the waiting list. ~~At a minimum, two Resource Procurement Periods will occur each calendar year.~~Each Resource Procurement Period will commence with the promulgation of a Resource Rate Tariff.

vii. RESOURCE RATE TARIFF SHEET – Upon approval of this rider tariff by the Commission and at the outset of each Resource Procurement Period the Company shall promulgate a tariff sheet that indicates:

(1) the term of the resource availability (5, 10, 15, or 20 years),
(2) a Not-to-Exceed Price,
(3) the State and RTO of the resource(s),
(4) the Company's good faith effort estimate of the production-weighted average difference in Locational Marginal Price between the physical point of interconnection of the resource,
(5) the Company's aggregate load node, as an average $ per MWh value,
(6) any mechanisms applicable to that resource to hold non-participating customers harmless from the risks associated with the Company entering a PPA for that resource,
(7) any terms and conditions specific to the resource(s) PPA, including but not limited to whether the resource is take or pay or subject to curtailments; if the resource PPA includes such terms, the tariff shall also include the Company's good faith effort estimate of the production-weighted average value of such terms under a high risk realization scenario and a low risk realization scenario, on an average $/MWh basis.

Upon the execution of a PPA associated with each resource(s) the Company shall file within 5 business days a revised Resource Rate Tariff Sheet for that resource replacing the Not-to-Exceed Price with the applicable price.

vii. SUBSCRIPTION INCREMENT (SI) – A ~~n-eligible Customer may~~ subscribed Customer shall ~~and~~ receive energy from a renewable resource in single percentage increments, up to 100% of the Customer's Annual Usage.

viii. SUBSCRIPTION SHARE (SS) – The proportion of the renewable resource, adjusted for the Renewable Resource Capacity Factor, allocated to the Customer to achieve the desired Subscription Increment amount. The Subscription Share is determined at enrollment and is calculated using the following formula:

$$SS = (SL_{MW}) / (RRC_{MW})$$

Where,

$$SL_{MW} = (AU_{MWh} \cdot SI) / (8{,}760_{hours\ per\ year} \cdot RRC_{factor})$$

AU = Annual Usage; the Customer's actual metered energy usage over the previous 12 monthly billing periods, if available, or Customer's expected metered energy usage over 12 monthly billing period as determined by Company.

RRC = Renewable Resource Capacity Factor; the average annual capacity of the renewable resource(s) as established by the Company.

RRC_{factor} = Renewable Resource Capacity Factor; the average annual capacity factor of the renewable resource(s) as established by Company.

ENROLLMENT

1. Customers applying for service under this Program must have an account that is not delinquent or in default at the beginning of the Resource Procurement Period and must have completed the required Provisional Participant Agreement.

~~1~~2. The Customer must submit a completed Conditional Participant Agreement to the Company for service under this Program. In the Conditional Participant Agreement, the Customer must specify the Subscription Increment to be subscribed.

3. Customers submitting a Conditional Participant Agreement but not allowed to subscribe due to Renewable Energy resource unavailability will be placed on a waiting list and will be offered the opportunity to subscribe in the order of queue position to the extent subscription cancellations or forfeitures occur. Customers approved for aggregation of accounts may choose to participate in part or remain on the list as a consolidated group, depending on resource availability.

~~2. Customers applying for service under this Program must have an account that is not delinquent or in default at the beginning of the Resource Procurement Period and must have completed the required Participant Agreement.~~

~~3~~3. Conditional Participant Agreement s~~Enrollment requests~~ may be submitted to the Company at any time.

~~4~~4. The Company will review the Provisional Participant Agreement and determine if the Customer will be ~~enrolled into the Program.~~included in the sizing of the next available Resource Procurement Period.

~~5~~6. In each Resource Procurement Period the Company will match as accurately as possible the combined Renewable Subscription Level of all Participants with a renewable resource(s), subject to availability. The minimum renewable resource(s) to be acquired will have a capacity of 100 MW and the maximum will depend upon the level of Participation Agreements received. ~~The renewable resource obtained for each~~
~~Subscriber group may be made up of capacity from multiple renewable resources.~~

7. Upon promulgation of each revised Resource Rate Tariff Sheet, the Company will execute Participant Agreements with each subscribing customer as expeditiously as is practicable.

8. If a Customer executed a Conditional Participant Agreement but did not execute a Participant Agreement during a Resource Procurement Period under which the Customer's desired subscription amount was available, the Customer shall be removed from the queue.

CHARGES AND BILLING

All charges provided for under, and other terms and conditions of, the Customer's applicable standard service classification(s) tariff shall continue to apply and will continue to be based on actual metered energy use during the Customer's normal billing cycle.

Under this Schedule RER, Customers will receive a Renewable Adjustment (RA), in the form of an additional charge or credit to their standard bill based upon the sale of the metered output of the renewable resource(s) into the wholesale market. The Renewable Adjustment will be calculated as follows:

$$RA = [RMO_{MWh} \cdot SS] \cdot [SC_{\$ \text{ per MWh}} - FMP_{\$ \text{ per MWh}}]$$

Where,

RMO = Metered output from the renewable resource at the market node.

SC = Subscription Charge; the delivered price per MWh of the renewable resource plus the Company Administration Charge of $0.10 per MWh (RMO) for twenty-year term Participant Agreements. For all other Participant Agreements, the Company Administration Charge will be $0.30 per MWh (RMO).

FMP = Final Market Price; the accumulation of all applicable market revenues and charges arising from or related to injection of the energy output of the renewable resource into the wholesale energy market in that calendar month at the nearest market node, divided by the actual metered hourly energy production, using the best available data from the regional transmission operator, who facilitates the wholesale marketplace, for the calendar month as of the date the Customer's Renewable Adjustment is being prepared. Alternatively, and at the Company's discretion if determined to be economic, the Company may seek to obtain the necessary transmission to deliver the energy output of the renewable resource to a local, Company market node. If this occurs, the Final Market Price will be calculated based on the accumulation of all applicable market revenues and charges inclusive of this delivery. The energy produced under this alternative will be subject to curtailment by the regional transmission operator. The Final Market Price will be rounded to the nearest cent.

The Renewable Adjustment may be applied up to 60 days later than the market transactions to allow for settlement and data processing.

Market revenues and charges may be adjusted to reflect net costs or revenues associated with service under the Program in prior months, for which more recent wholesale market settlement data supersedes the data that was used to calculate initial charges or credits that were assessed to participating Customers.

The Renewable Subscription Charge and the Subscription Share are to be determined at the time the Company obtains the renewable resource to satisfy the Participation Agreement.

Billing and settlement of charges under this Schedule may occur separately from the billing associated with service provided to a Customer's under the Standard Rate Schedules. The Company reserves the right to consolidate account data and process charges collectively to facilitate Customers electing to aggregate subscriptions under this Schedule.

TERM

Agreements under this Program are available for enrollment for five-year, ten-year, and twenty-year terms.

Customers will select the term at time of enrollment and will not be allow to change the term once the renewable resource serving the Customer has been obtained. Customers subscribing to more than 20% of the renewable resource will be required to commit to a minimum term of ten years.

RENEWABLE RESOURCE ENERGY CREDITS

Renewable Energy Credits associated with energy obtained through this Program will be transferred to the Customer annually or at any time upon Customer request. Alternatively, and if requested, the Company will retire the credits on behalf of the Customer with all costs associated with the registration and retirement borne by the requesting Customer.

TRANSFER OR TERMINATION

Participants who move to another location within the Company's Missouri service territory may request transfer of their subscription, provided the total kWh of the subscribed amount is less than the new location's average annual historical usage (actual or Company estimated). If the existing subscription level exceeds the allowed usage amount at the new location, the subscription will be adjusted down accordingly.

Participants who request termination of the Participation Agreement, or default on the Participation Agreement before the expiration of the term of the Participation Agreement, shall pay to the Company any associated costs and administration associated with termination of the subscribed renewable resource. Such termination charge may be adjusted if and to the extent another Customer requests service under this Schedule and fully assumes the obligation for the purchase of the renewable energy prior to the effective date of the contract amendment or termination; provided, however, Company will not change utilization of its assets and positions to minimize Customer's costs due to such early termination. The Participant must notify the Company in writing of their request to terminate.

RENEWABLE CONTRACTS SUPPORTING ECONOMIC DEVELOPMENT

Nothing in this tariff is intended to limit the ability of the ~~The~~ Company to enter into unregulated third party transactions for purchases of energy or transmission.~~may, at its discretion, enter into an individual agreement with a Customer requesting Renewable Energy to support customer retention or incremental load resulting from the construction or expansion of facilities within the Company's service territory. Depending on the details of the Customer need, the load may be served by the same Renewable Energy resource used for this Program or may result in agreements for additional Renewable Energy resources. The individual terms concerning pricing will be established with the requesting Customer. All agreements are subject to availability and deliverability of Renewable Energy resources and will be structured in such a way as to ensure recovery of all related costs from the requesting Customer.~~

PROGRAM PROVISIONS AND SPECIAL TERMS

1. In procuring the Renewable Energy, the Company will ensure that Renewable Energy resources utilized under this Program are or have been placed in service after January 1, 2019.

2. At enrollment, the Company will calculate the Customer's demand for the prior twelve-month period to determine eligibility. If twelve months of demand data is not available, the Company may estimate the annual demand to the nearest kW, using a method that includes, but is not limited to, usage by similarly sized properties or engineering estimates.

3. Customers that the Company, at its sole discretion, determines are ineligible will be notified promptly, after such Participant Agreement is denied.

4. Customer participation in this Program may be limited by the Company to balance Customer demand with available qualified Renewable Energy resources, adequate transmission facilities, and capacity.

5. Customers who need to adjust in their commitments due to increases or decreases in electric demand may request such adjustment in writing from the Company. Efforts will be made to accommodate the requested adjustment. The Customer will be responsible for any additional cost incurred to facilitate the adjustment.

6. Any Customer being served or having been served on this Program waives all rights to any billing adjustments arising from a claim that the Customer's service would be or would have been at a lower cost had it not participated in the Program for any period of time.

7. The Company may file a request to discontinue this Program with the Commission at any time in the future. Prior to the termination, the Company will work with the participating Customer to transition them fully from the subscriptions in effect to a Standard Rate Schedule or to an alternate green power option that the Company may be providing at that time. Any Participant who cancels Program participation must wait twelve (12) months after the first billing cycle without a subscription to re-enroll in the Program.

~~8. Ownership of unsubscribed energy and the associated RECs will be assumed by the Company and incorporated into the energy provided to retail Customers. Unsubscribed amounts will be allocated between the jurisdictions based on the Customer Subscriptions in place at the time of processing.~~

~~9. Ownership of unsubscribed energy and the associated RECs will be assumed by the Company and incorporated into the energy provided to retail Customers. Unsubscribed amounts will be allocated between the jurisdictions based on the Customer Subscriptions in place at the time of processing.~~

~~10~~9. The Company shall not be liable to the Customer in the event that the Renewable Energy supplier fails to deliver Renewable Energy to the market and will make reasonable efforts to encourage the Renewable Energy supplier to provide delivery as soon as possible. However, in the event that the Renewable Energy supplier terminates the Renewable Energy contract with the Company, for any reason during the term of contract with the Customers, the Company, at the election of the Customer, shall make reasonable efforts to enter into a new PPA with another Renewable Energy supplier as soon as practicable with the cost of the Renewable Energy to the Customer revised accordingly.

~~11~~10. Operational and market decisions concerning the renewable resource, including production curtailment due to economic conditions, will be made solely by the regional transmission operator. These decisions could impact the market price received for the renewable resource energy output.

REGULATIONS

Subject to Rules and Regulations filed with the State Regulatory Commission.

PURPOSE
This Program is designed to provide non-Residential Customers a voluntary opportunity to purchase Renewable Energy, in addition to service provided through a generally available rate, from Renewable Energy sources that the Company contracts.

Following Commission approval of this Rider, the Company will endeavor to procure the Renewable Energy sources necessary to fulfill Customer requests for service under this Program. Pricing and related terms will be updated to reflect these sources.

AVAILABILITY
Customer accounts receiving Unmetered, Lighting, Net Metering, or Time-of-Use Service are ineligible for this Program while participating in those service agreements. This Program is not available for resale, standby, breakdown, auxiliary, parallel generation, or supplemental service.

Service under this Program is available on a limited and voluntary basis, at the Company's option, to non-Residential Customers currently receiving permanent electric service from the Company through Schedule SGS, MGS, LGS, LPS, SGA, MGA, LGA, or PGA, with an annual average monthly peak demand greater than 200 kW. At the Company's sole approval, Customers that have an aggregate electric load of at least 2.5 MW based upon peak annual demand and an average of 200 kW per account, or Governmental/Municipal Customers as established by Section 46.040, RSMo, or pursuant to Article VI, Section 15 of the Missouri Constitution and applicable enabling statutes enacted by the General Assembly thereunder, may combine separate accounts to participate in this Program.

~~Customers will be enrolled and subscribed on a first-come, first-served basis. Customers applying but not allowed to subscribe due to Renewable Energy resource unavailability will be placed on a waiting list and may be offered the opportunity to subscribe if subscription cancellations or forfeitures occur. Customers approved for aggregation of accounts may choose to participate in part or remain on the list as a consolidated group, depending on resource availability. Participants may cancel their subscription at any time subject to any net cost of the remaining Renewable Energy for the term. Service hereunder is provided to one end-use Customer and may not be redistributed or resold.~~

~~Within any limits prescribed by the individual tariffs, the Company will combine the subscription requirements for all Company jurisdictions in executing the power purchase agreement(s) for the Renewable Energy resource~~Company will execute Purchase Power Agreement(s) for the Renewable Energy resource that are billed on the basis of $/MWh, do not contain take or pay provisions, and under which payment is not required for energy not generated due to curtailments imposed by the Southwest Power Pool. The ~~combined~~initial ~~-~~Program offering will be ~~initially limited to a~~ minimum ~~total load of 100~~ 50 megawatts (MW). Additional subscriptions may be made available up to ~~and a~~ maximum total load of ~~200~~ 100 MW~~, split equally between the Company jurisdictions. The Company reserves the right to reapportion the allocation between Companies in response to Customer subscription. The production from the combined power purchase agreement(s) for the Renewable Energy resource will be allocated among the various Company jurisdictions based on the respective subscriptions within that jurisdiction. The limit will be re-evaluated if or when the 200 MW limit is reached. Additional subscriptions will be made available at the sole discretion of the Company.~~.

DEFINITIONS
For purposes of this Program the following definitions apply:

i. CONDITIONAL PARTICIPANT AGREEMENT – The agreement between the Company and Customer, utilized for gauging customer interest in a given Resource Procurement Period. This agreement may be provided and executed electronically. A Reservation Charge of $50 per MW shall be provided concurrent with execution of the Conditional Participant Agreement. If a Participant Agreement is executed within 361 days, that Reservation Charge shall be applied as a bill credit to charges arising under this Rider. If

a Participant Agreement is not executed within 361 days, the Reservation Charge shall be refunded to the Customer unless the elects to maintain its queue position for an additional 361 days.

i. PARTICIPANT – The Customer, specified as the Participant in the Participant Agreement, is the eligible Customer that has received notification of acceptance into the Program.

ii. PARTICIPANT AGREEMENT – The agreement between the Company and Customer, utilized for enrollment and establishing the full terms and conditions of the Program. Eligible Customers will be required to sign the Participant Agreement prior to participating in the Program. This agreement may be provided and executed electronically. A Customer electing to end participation in the Program prior to the completed term of resource availability shall transfer its subscription to an alternate Participant evidenced by the execution of a Participant Agreement for the remaining resource term by the alternate Participant, or the Customer shall pay an amount equal net cost of the renewable energy over the remainder of the term. Such payments received shall be maintained by the Company as an offset to revenue requirement associated with the Program.

iii. POWER PURCHASE AGREEMENT (PPA) – an agreement or contract between a resource owner and the Company for renewable energy produced from a specific renewable resource.

iv. RENEWABLE ENERGY CREDITS – also known as Renewable Energy Certificates or RECs, represent the environmental attributes associated with one (1) megawatt-hour of renewable electricity generated and delivered to the power grid.

v. RENEWABLE ENERGY – energy produced from a renewable resource as defined in 4 CSR 240-20.100(1)(N) and associated with this Program. Renewable resources procured will be utilized for this program or similar voluntary, green programs.

vi. RESOURCE PROCUREMENT PERIOD – the period of time in which the Company ~~will~~shall, if the subscriptions on the waiting list warrant such effort, attempt to obtain a renewable resource to serve the Participation Agreements queued on the waiting list. ~~At a minimum, two Resource Procurement Periods will occur each calendar year.~~Each Resource Procurement Period will commence with the promulgation of a Resource Rate Tariff.

vii. RESOURCE RATE TARIFF SHEET – Upon approval of this rider tariff by the Commission and at the outset of each Resource Procurement Period the Company shall promulgate a tariff sheet that indicates:

(1) the term of the resource availability (5, 10, 15, or 20 years),
(2) a Not-to-Exceed Price,
(3) the State and RTO of the resource(s),
(4) the Company's good faith effort estimate of the production-weighted average difference in Locational Marginal Price between the physical point of interconnection of the resource,
(5) the Company's aggregate load node, as an average $ per MWh value,
(6) any terms and conditions specific to the resource(s) PPA, including but not limited to whether the resource is take or pay or subject to curtailments; if the resource PPA includes such terms, the tariff shall also include the Company's good faith effort estimate of the production-weighted average value of such terms under a high risk realization scenario and a low risk realization scenario, on an average $/MWh basis.

Upon the execution of a PPA associated with each resource(s) the Company shall file within 5 business days a revised Resource Rate Tariff Sheet for that resource replacing the Not-to-Exceed Price with the applicable price.

vii. SUBSCRIPTION INCREMENT (SI) – A ~~n eligible Customer may~~ subscribed Customer shall ~~and~~ receive energy from a renewable resource in single percentage increments, up to 100% of the Customer's Annual Usage.

viii. SUBSCRIPTION SHARE (SS) – The proportion of the renewable resource, adjusted for the Renewable Resource Capacity Factor, allocated to the Customer to achieve the desired Subscription Increment amount. The Subscription Share is determined at enrollment and is calculated using the following formula:

$$SS = (SL_{MW}) / (RRC_{MW})$$

Where,

$$SL_{MW} = (AU_{MWh} \cdot SI) / (8{,}760_{\text{hours per year}} \cdot RRC_{factor})$$

AU = Annual Usage; the Customer's actual metered energy usage over the previous 12 monthly billing periods, if available, or Customer's expected metered energy usage over 12 monthly billing period as determined by Company.

RRC = Renewable Resource Capacity Factor; the average annual capacity of the renewable resource(s) as established by the Company.

RRC_{factor} = Renewable Resource Capacity Factor; the average annual capacity factor of the renewable resource(s) as established by Company.

ENROLLMENT

1. Customers applying for service under this Program must have an account that is not delinquent or in default at the beginning of the Resource Procurement Period and must have completed the required Provisional Participant Agreement.

~~1~~2. The Customer must submit a completed Conditional Participant Agreement to the Company for service under this Program. In the Conditional Participant Agreement, the Customer must specify the Subscription Increment to be subscribed.

3. Customers submitting a Conditional Participant Agreement but not allowed to subscribe due to Renewable Energy resource unavailability will be placed on a waiting list and will be offered the opportunity to subscribe in the order of queue position to the extent subscription cancellations or forfeitures occur. Customers approved for aggregation of accounts may choose to participate in part or remain on the list as a consolidated group, depending on resource availability.

~~2. Customers applying for service under this Program must have an account that is not delinquent or in default at the beginning of the Resource Procurement Period and must have completed the required Participant Agreement.~~

~~4~~3. Conditional Participant Agreement s~~Enrollment requests~~ may be submitted to the Company at any time.

54. The Company will review the Provisional Participant Agreement and determine if the Customer will be ~~enrolled into the Program.~~included in the sizing of the next available Resource Procurement Period.

~~5~~6. In each Resource Procurement Period the Company will match as accurately as possible the ~~combined~~ Renewable Subscription Level of all Participants with a renewable resource(s), subject to availability. ~~The minimum renewable resource to be acquired will have a capacity of 100 MW and the maximum will depend upon the level of Participation Agreements received. The renewable resource obtained for each~~
~~Subscriber group may be made up of capacity from multiple renewable resources.~~

7. Upon promulgation of each revised Resource Rate Tariff Sheet, the Company will execute Participant Agreements with each subscribing customer as expeditiously as is practicable.

8. If a Customer executed a Conditional Participant Agreement but did not execute a Participant Agreement during a Resource Procurement Period under which the Customer's desired subscription amount was available, the Customer shall be removed from the queue.

CHARGES AND BILLING

All charges provided for under, and other terms and conditions of, the Customer's applicable standard service classification(s) tariff shall continue to apply and will continue to be based on actual metered energy use during the Customer's normal billing cycle.

Under this Schedule RER, Customers will receive a Renewable Adjustment (RA), in the form of an additional charge or credit to their standard bill based upon the sale of the metered output of the renewable resource(s) into the wholesale market. The Renewable Adjustment will be calculated as follows:

$$RA = [RMO_{MWh} \cdot SS] \cdot [SC_{\$ \text{ per MWh}} - FMP_{\$ \text{ per MWh}}]$$

Where,

RMO = Metered output from the renewable resource at the market node.

SC = Subscription Charge; the delivered price per MWh of the renewable resource plus the Company Administration Charge of $0.10 per MWh (RMO) for twenty-year term Participant Agreements. For all other Participant Agreements, the Company Administration Charge will be $0.30 per MWh (RMO).

FMP = Final Market Price; the accumulation of all applicable market revenues and charges arising from or related to injection of the energy output of the renewable resource into the wholesale energy market in that calendar month at the nearest market node, divided by the actual metered hourly energy production, using the best available data from the regional transmission operator, who facilitates the wholesale marketplace, for the calendar month as of the date the Customer's Renewable Adjustment is being prepared. Alternatively, and at the Company's discretion if determined to be economic, the Company may seek to obtain the necessary transmission to deliver the energy output of the renewable resource to a local, Company market node. If this occurs, the Final Market Price will be calculated based on the accumulation of all applicable market revenues and charges inclusive of this delivery. The energy produced under this alternative will be subject to curtailment by the regional transmission operator. The Final Market Price will be rounded to the nearest cent.

The Renewable Adjustment may be applied up to 60 days later than the market transactions to allow for settlement and data processing.

Market revenues and charges may be adjusted to reflect net costs or revenues associated with service under the Program in prior months, for which more recent wholesale market settlement data supersedes the data that was used to calculate initial charges or credits that were assessed to participating Customers.

The Renewable Subscription Charge and the Subscription Share are to be determined at the time the Company obtains the renewable resource to satisfy the Participation Agreement.

Billing and settlement of charges under this Schedule may occur separately from the billing associated with service provided to a Customer's under the Standard Rate Schedules. The Company reserves the right to consolidate account data and process charges collectively to facilitate Customers electing to aggregate subscriptions under this Schedule.

TERM

Agreements under this Program are available for enrollment for five-year, ten-year, and twenty-year terms.

Customers will select the term at time of enrollment and will not be allow to change the term once the renewable resource serving the Customer has been obtained. Customers subscribing to more than 20% of the renewable resource will be required to commit to a minimum term of ten years.

RENEWABLE RESOURCE ENERGY CREDITS

Renewable Energy Credits associated with energy obtained through this Program will be transferred to the Customer annually or at any time upon Customer request. Alternatively, and if requested, the Company will retire the credits on behalf of the Customer with all costs associated with the registration and retirement borne by the requesting Customer.

TRANSFER OR TERMINATION

Participants who move to another location within the Company's Missouri service territory may request transfer of their subscription, provided the total kWh of the subscribed amount is less than the new location's average annual historical usage (actual or Company estimated). If the existing subscription level exceeds the allowed usage amount at the new location, the subscription will be adjusted down accordingly.

Participants who request termination of the Participation Agreement, or default on the Participation Agreement before the expiration of the term of the Participation Agreement, shall pay to the Company any associated costs and administration associated with termination of the subscribed renewable resource. Such termination charge may be adjusted if and to the extent another Customer requests service under this Schedule and fully assumes the obligation for the purchase of the renewable energy prior to the effective date of the contract amendment or termination; provided, however, Company will not change utilization of its assets and positions to minimize Customer's costs due to such early termination. The Participant must notify the Company in writing of their request to terminate.

RENEWABLE CONTRACTS SUPPORTING ECONOMIC DEVELOPMENT

Nothing in this tariff is intended to limit the ability of the ~~The~~ Company to enter into unregulated third party transactions for purchases of energy or transmission.~~may, at its discretion, enter into an individual agreement with a Customer requesting Renewable Energy to support customer retention or incremental load resulting from the construction or expansion of facilities within the Company's service territory. Depending on the details of the Customer need, the load may be served by the same Renewable Energy resource used for this Program or may result in agreements for additional Renewable Energy resources. The individual terms concerning pricing will be established with the requesting Customer. All agreements are subject to availability and deliverability of Renewable Energy resources and will be structured in such a way as to ensure recovery of all related costs from the requesting Customer.~~

PROGRAM PROVISIONS AND SPECIAL TERMS

1. In procuring the Renewable Energy, the Company will ensure that Renewable Energy resources utilized under this Program are or have been placed in service after January 1, 2019.

2. At enrollment, the Company will calculate the Customer's demand for the prior twelve-month period to determine eligibility. If twelve months of demand data is not available, the Company may estimate the annual demand to the nearest kW, using a method that includes, but is not limited to, usage by similarly sized properties or engineering estimates.

3. Customers that the Company, at its sole discretion, determines are ineligible will be notified promptly, after such Participant Agreement is denied.

4. Customer participation in this Program may be limited by the Company to balance Customer demand with available qualified Renewable Energy resources, adequate transmission facilities, and capacity.

5. Customers who need to adjust in their commitments due to increases or decreases in electric demand may request such adjustment in writing from the Company. Efforts will be made to accommodate the requested adjustment. The Customer will be responsible for any additional cost incurred to facilitate the adjustment.

6. Any Customer being served or having been served on this Program waives all rights to any billing adjustments arising from a claim that the Customer's service would be or would have been at a lower cost had it not participated in the Program for any period of time.

7. The Company may file a request to discontinue this Program with the Commission at any time in the future. Prior to the termination, the Company will work with the participating Customer to transition them fully from the subscriptions in effect to a Standard Rate Schedule or to an alternate green power option that the Company may be providing at that time. Any Participant who cancels Program participation must wait twelve (12) months after the first billing cycle without a subscription to re-enroll in the Program.

8. Ownership of unsubscribed energy and the associated RECs will be assumed by the Company and incorporated into the energy provided to retail Customers through the Fuel Adjustment Clause ~~only if positive net revenues exist for each 6-month accumulation period. If the unsubscribed portion's net revenue is a loss for a 6-month accumulation period, then the net revenue shall not flow through the FAC or be otherwise recovered from retail ratepayers.~~ ~~Unsubscribed amounts will be allocated between the jurisdictions based on the Customer Subscriptions in place at the time of processing.~~

~~9. Ownership of unsubscribed energy and the associated RECs will be assumed by the Company and incorporated into the energy provided to retail Customers. Unsubscribed amounts will be allocated between the jurisdictions based on the Customer Subscriptions in place at the time of processing.~~

~~10~~9. The Company shall not be liable to the Customer in the event that the Renewable Energy supplier fails to deliver Renewable Energy to the market and will make reasonable efforts to encourage the Renewable Energy supplier to provide delivery as soon as possible. However, in the event that the Renewable Energy supplier terminates the Renewable Energy contract with the Company, for any reason during the term of contract with the Customers, the Company, at the election of the Customer, shall make reasonable efforts to enter into a new PPA with another Renewable Energy supplier as soon as practicable with the cost of the Renewable Energy to the Customer revised accordingly.

~~11~~10. Operational and market decisions concerning the renewable resource, including production curtailment due to economic conditions, will be made solely by the regional transmission operator. These decisions could impact the market price received for the renewable resource energy output.

REGULATIONS
Subject to Rules and Regulations filed with the State Regulatory Commission.

PURPOSE

The purpose of the Solar Subscription Pilot Rider (Program) is to provide a limited number of Customers the opportunity to voluntarily subscribe to the generation output of a solar resource and receive electricity from solar resources. ~~This Program will allow the Company to deploy and evaluate a structure for integrating solar energy directly into service provided to its Customers.~~

Program Participants will subscribe and pay for Solar Blocks of five hundred (500) watts (W AC) each. Energy produced by the subscribed Solar Blocks will offset an equivalent kWh amount of energy they receive and are billed for under their standard class of service. Approximately ~~5~~10,000 Solar Blocks will be available for subscription with the initial offering. This program may be expanded, with Commission approval, after successful completion of the initial offering and pilot evaluation. ~~to include up to 50 MW of installed solar capacity. Depending on Customer interest, additional solar resources may be built and Solar Blocks made available.~~ Customers will be required to enroll for the Program in advance and each solar resource will be built when 75 percent of the proposed solar resource is committed. If the Company does not receive a sufficient number of subscriptions for the Program, the Company may terminate this Schedule SSP; however, the Company will not terminate this Schedule SSP until at least one year of marketing of the program.

AVAILABILITY

This Rider is available to any Customer currently receiving permanent electric service under the Company's retail rate schedules. Customers must complete the required Participant Agreement and have an account that is not delinquent or in default.

Upon promulgation of tariff sheet 39A stating a Solar Block Charge, Participants will be enrolled on a first-come, first-served basis. Customers applying but not allowed into the Program due to Solar Block unavailability will be placed on a waiting list and incorporated into the Program in the order they are received. Should Solar Blocks become available due to construction of additional solar resources or subscription cancellations, Customers on the waiting list will be offered the opportunity to subscribe. Subscription hereunder is provided through one meter to one end-use Customer and may not be aggregated, redistributed, or resold.

Total participation of non-residential Customers will be limited to no more than 50 percent of the total solar resource capacity during the first three months of the Program. After three months, and at the Company's sole discretion, all available solar resource capacity may be made available to all eligible Customers.

This Rider may not be combined with any other renewable energy program offered by the Company for the same Customer account.

Customers receiving Unmetered, Lighting, or Net Metering~~, or Time-of-Use~~ Service are ineligible for this Program while participating in those service agreements. This schedule is not available for resale, standby, breakdown, auxiliary, parallel generation, or supplemental service.

PRICING

The Solar Block Subscription Charge for energy sold through this Program is $0.XXX~~159~~ per kWh, made up of two costs:

- The Solar Block cost of $0.XXX~~121~~ per kWh; and
- The Services and Access charge of $0..04~~.038~~ per kWh ~~for interconnection service costs~~.

The Solar Block cost is defined by the total cost of the solar resource(s)~~resources~~ built to serve the program. The Services and Access Charge will be adjusted when rates are reset in future rate cases by the percentage change to volumetric rates in those future rate cases, unless a party provides a cost study demonstrating that it would be unreasonable to adjust the Services and Access~~interconnection~~ charge by the percentage change to volumetric rates in future rate cases. The burden ~~is the embedded cost~~ of production~~Transmission~~ and persuasion shall be~~Distribution based~~ on the party requesting such~~Company's class cost of service study from the Company's most recent rate case. When~~ an alternative adjustment.~~additional solar resource is added to the Program, the levelized cost of the new solar resource will be averaged with the remaining levelized cost of existing solar resource(s) to determine the new price for the cost of the Solar Block. This price may be greater than or less than the previous price. The cost of facilities for distribution interconnection is subject to change in future general rate proceedings, independent from the Solar Block cost.~~

SUBSCRIPTION LEVEL

Participants may subscribe to Solar Blocks that, when combined, are expected to generate up to 50 percent of their annual energy. During initial sign-up, the Customer will designate their desired subscription percentage in increments of 10 percent. The Company will provide to the Customer the number of Solar Blocks necessary to supply their subscription percentage based on the Customer's annual energy usage ("Subscription Level").~~.~~ The Customer's annual energy usage will be determined in one of two ways. If during initial signup the Customer has 12 consecutive months of usage history at the address where the subscription is being requested, then the annual energy will be the energy consumed during that 12-month usage history. If the Customer does not have 12 consecutive months of usage history at the address where the subscription is being requested, then the annual energy will be estimated by the Company. The calculation for the number of Solar Blocks is equal to the annual energy (in kWh) divided by the expected annual energy production of one block rounded down to the lowest whole number. A Customer must have sufficient annual usage to support subscription of at least one Solar Block.

The~~Until the Company expands its solar energy production beyond the initial 5 MW, the~~ maximum amount any one Customer may subscribe to is 2,500 kW AC of capacity.~~After the expansion of solar energy production, subscription for any one Customer beyond 2,500 kW AC will be at the Company's discretion.~~ A Participant may change their subscription level only once in any 12-month period after the initial 12-month subscription. In the event there is a significant and

regular reduction in Participant metered energy consumption, the Company, ~~at its sole discretion,~~ may adjust the Participant's subscription level after customer notice.~~.~~

BILLED PURCHASE QUANTITY

The quantity of energy that will be purchased by a Participant for each monthly billing cycle will be computed as follows:

$$PQ = \frac{SL}{TSC} \cdot AME$$

Where,

PQ = Monthly Purchase Quantity in kWh
SL = Subscription Level in kW AC
TSC = Total Solar System Capacity in kW AC
AME = Actual Monthly Energy Produced by the Solar Resource in kWh.

~~The Total System Capacity will be re-determined whenever a new solar facility is brought online or an existing solar facility is taken offline.~~

MONTHLY BILLING

1. The monthly energy production of the solar resource will be measured and apportioned to each Participant based on their respective Subscription Level.~~subscription share.~~ To facilitate billing, energy production will be applied to the monthly billing one month after it occurs.

2. The Participant's~~Participants~~ share of the solar resource energy production will be subtracted from the metered energy consumed by the Participant for the billing month. Should the Participant's share of the solar resource energy production amount for a given month be larger than the Participant's metered energy consumption, the Participant will (1) be billed under this Rider at only the Solar Block rate for that portion of the solar resource energy production that exceeded the Participant's metered energy consumption, and (2) receive a credit at the Company's cogeneration rate. Credits expire without compensation 12 months from issuance. For Participants on rate schedules that are time differentiated, the usage will first be subtracted from the metered energy consumed "on peak." ~~net energy will be zero for that month.~~

3. Any remaining metered energy consumption will be billed under the rates associated with the Participant's standard rate schedule, including all applicable riders and charges

4. Other, non-energy charges defined by the standard rate schedule are not impacted by the Solar Block subscription and will be billed to the Participant.

5. The entire bill amount, inclusive of all standard rate charges and Program charges, must be paid according to the payment terms set forth in the Company Rules and Regulations.

WAITING LIST

If at the time of subscription request a Customer's desired subscription level is greater than the available energy of the solar resource, then the Customer may elect to be placed on a waiting list.

Customers will be offered an opportunity to subscribe in the order that they are placed on the waiting list, only if available capacity is greater than the customer's desired subscription level. If the available capacity is less than the Customer's desired subscription level, the Customer will be offered the opportunity to subscribe to the remaining available capacity. If the Customer does not wish to participate at this lower than desired subscription level, then the next Customer on the waiting list will be checked for subscription availability. The Company will maintain all records related to the waiting list.

SUBSCRIPTION TERM

Participants must remain in the Program for one year, as measured from the first bill received under this Rider.

Non-residential Participants who subscribe to 25 percent of the available Solar Blocks for a given solar resource, are required to commit to a minimum term of five years.

PROGRAM PROVISIONS AND SPECIAL TERMS

1. All rights to the renewable energy certificates (REC) associated with the generation output of the solar facility will be retired by the Company on behalf of Participants. The Company will create a group retirement subaccount in NAR for retirement of RECs. The RECs associated with the output of the solar facility will be designated in NAR for public viewing.

2. Any Participant being served or having been served on this Program waives all rights to any billing adjustments arising from a claim that the Participant's service would be or would have been at a lower cost had it not participated in the Program for any period of time.

3. Participants who move to another location within the Company's Missouri service territory may transfer their subscription, provided the total kWhs of the subscribed amount is not more than the new location's allowed subscription level (actual or

estimated). If the subscription level exceeds the allowed amount at the new location, the subscription will be adjusted down accordingly.

4. Participants must notify the Company in writing, including by email, of their intent to transfer any subscription(s). Transfers will only be effective if the Transferee satisfies the terms and conditions applicable to the subscription and signs the Participant Agreement and assumes all responsibilities associated therewith.

5. Customers that subscribe will continue as Participants until they cancel their subscription or the Program is terminated. New subscriptions and cancelations require notice 20 days prior to the end of the Participant's billing cycle and will take effect at the beginning of the next applicable billing cycle.

6. Upon cancelation of a Participant's service, Participants may transfer their entire subscription to another eligible Participant's service agreement, including non-profits, for a $25 fee. Participants with more than one Solar Block may transfer their Solar Block subscriptions in whole subscription increments to one or more Eligible Customers for a $25 fee per transfer.

7. Any Participant who cancels Program participation must wait 12 months after the first billing cycle without a subscription to re-enroll in the Program.

8. ~~Ownership of u~~Unsubscribed Solar Blocks and the associated RECs will be assumed by the Company and incorporated into the energy provided to retail Customers. In the event overall subscription falls below 50% of total solar blocks, revenues shall be imputed to equal a minimum subscription level of 50%.

DEMAND SIDE INVESTMENT MECHANISM & NON-MEEIA OPT-OUT PROVISIONS

Subject to Schedule DSIM and Rules and Regulations filed with the State Regulatory Commission (Section 8.10, Sheet 1.28).

FUEL ADJUSTMENT

Fuel Adjustment Clause, Schedule FAC, shall be applicable to all customer billings under this schedule.

TAX ADJUSTMENT

Tax Adjustment Schedule TA shall be applicable to customer billings under this schedule.

REGULATIONS

Subject to Rules and Regulations filed with the State Regulatory Commission.

8:00:00 AM to 9:59 PM

Energy Charge Summer:	*$ 143,484,266*	*KCPL Winter Revenue Shift*			*$ 135,864,276*		Differential							Differential					Differential		
Energy Charge Winter:	*$ 152,399,809*	*5.0%*	*$ 7,619,990*		*$ 160,019,799*				102.5% = % Energy Charge Change					$ 0.05							
KCPL ToU	$/KWh	kWh	Revenue		% kWh	% Revenue			$/KWh 1	New Revenue		% Revenue			$/kWh 2	Final Revenue		% Revenue			
Summer On	$ 0.141	681,452,325	$ 96,247,365		26%	33%			$ 0.141	$ 96,247,365		32%			$ 0.141	$ 96,247,365		32%			0%
Summer Off	$ 0.111	355,461,737	$ 39,616,911		14%	13%	$ 0.030		$ 0.121	$ 43,013,517		14%	$ 0.020		$ 0.121	$ 43,013,517		14%	$ 0.020		
Winter On	$ 0.124	939,977,406	$ 116,829,309		36%	39%			$ 0.129	$ 120,829,804		40%			$ 0.125	$ 117,809,059		39%			97.50%
Winter Off	$ 0.071	607,753,991	$ 43,190,490		24%	15%	$ 0.053		$ 0.071	$ 43,190,490		14%	$ 0.057		$ 0.076	$ 46,211,235		15%	$ 0.048		
		2,584,645,459	295,884,075		100%	100%				303,281,177						303,281,177					
										7,397,102						-					
										2.50%											
Energy Charge Summer:	*$ 160,150,799*	*GMO Winter Revenue Shift*			*$ 141,592,140*																
Energy Charge Winter:	*$ 185,586,595*	*10.0%*	*$ 18,558,659*		*$ 204,145,254*				102.5% = % Energy Charge Change					$ 0.05							
GMO ToU	$/KWh	kWh	Revenue		% kWh	% Revenue			$/KWh 1	New Revenue		% Revenue			$/kWh 2	Final Revenue		% Revenue			
Summer On	$ 0.117	904,341,083	$ 105,979,539		26%	31%			$ 0.117	$ 105,979,539		30%			$ 0.117	$ 105,979,539		30%			0%
Summer Off	$ 0.084	423,811,272	$ 35,612,600		12%	10%	$ 0.033		$ 0.092	$ 39,152,404		11%	$ 0.025		$ 0.092	$ 39,152,404		11%	$ 0.025		
Winter On	$ 0.116	1,313,663,404	$ 152,356,439		38%	44%			$ 0.120	$ 157,460,070		44%			$ 0.117	$ 154,310,869		44%			98.00%
Winter Off	$ 0.064	813,916,722	$ 51,788,815		24%	15%	$ 0.052		$ 0.064	$ 51,788,815		15%	$ 0.056		$ 0.067	$ 54,938,017		16%	$ 0.050		
		3,455,732,481	345,737,394		100%	100%				354,380,829						354,380,829					
										8,643,435						-					
										2.50%											

8:00:00 AM to 9:59 PM

Energy Charge Summer:	*$ 143,484,266*	*KCPL Winter Revenue Shift*			*$ 143,484,266*																	
Energy Charge Winter:	*$ 152,399,809*	*0.0%*	*$ -*		*$ 152,399,809*				102.5% = % Energy Charge Change					$ 0.05							
KCPL ToU	$/KWh	kWh	Revenue		% kWh	% Revenue			$/KWh 1	New Revenue		% Revenue			$/kWh 2	Final Revenue		% Revenue			
Summer On	$ 0.149	681,452,325	$ 101,645,429		26%	34%			$ 0.149	$ 101,645,429		34%			$ 0.149	$ 101,645,429		34%			0%
Summer Off	$ 0.118	355,461,737	$ 41,838,837		14%	14%	$ 0.031		$ 0.128	$ 45,425,944		15%	$ 0.021		$ 0.128	$ 45,425,944		15%	$ 0.021		
Winter On	$ 0.116	939,977,406	$ 109,209,319		36%	37%			$ 0.120	$ 113,019,314		37%			$ 0.120	$ 113,019,314		37%			0.00%
Winter Off	$ 0.071	607,753,991	$ 43,190,490		24%	15%	$ 0.045		$ 0.071	$ 43,190,490		14%	$ 0.049		$ 0.071	$ 43,190,490		14%	$ 0.049		
		2,584,645,459	295,884,075		100%	100%				303,281,177						303,281,177					
										7,397,102						-					
										2.50%											
Energy Charge Summer:	*$ 160,150,799*	*GMO Winter Revenue Shift*			*$ 160,150,799*																
Energy Charge Winter:	*$ 185,586,595*	*0.0%*	*$ -*		*$ 185,586,595*				102.5% = % Energy Charge Change					$ 0.05							
GMO ToU	$/KWh	kWh	Revenue		% kWh	% Revenue			$/KWh 1	New Revenue		% Revenue			$/kWh 2	Final Revenue		% Revenue			
Summer On	$ 0.133	904,341,083	$ 119,870,411		26%	35%			$ 0.133	$ 119,870,411		34%			$ 0.133	$ 119,870,411		34%			0%
Summer Off	$ 0.095	423,811,272	$ 40,280,388		12%	12%	$ 0.038		$ 0.104	$ 44,284,158		12%	$ 0.028		$ 0.104	$ 44,284,158		12%	$ 0.028		
Winter On	$ 0.102	1,313,663,404	$ 133,797,780		38%	39%			$ 0.105	$ 138,437,444		39%			$ 0.105	$ 138,437,444		39%			0.00%
Winter Off	$ 0.064	813,916,722	$ 51,788,815		24%	15%	$ 0.038		$ 0.064	$ 51,788,815		15%	$ 0.042		$ 0.064	$ 51,788,815		15%	$ 0.042		
		3,455,732,481	345,737,394		100%	100%				354,380,829						354,380,829					
										8,643,435						-					
										2.50%											