COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

Electronic Application Of Kentucky Power Company For (1) A General Adjustment Of Its Rates For Electric Service; (2) Approval Of Tariffs And Riders; (3) Approval Of Accounting Practices To Establish Regulatory Assets And Liabilities; (4) Approval Of A Certificate Of Public Convenience And Necessity; And (5) All Other Required Approvals And Relief	)))))))	Case Number 2020-00174

DIRECT TESTIMONY OF JAMES OWEN ON BEHALF OF JOINT INTERVENORS MOUNTAIN ASSOCIATION, KENTUCKIANS FOR THE COMMONWEALTH, AND THE KENTUCKY SOLAR ENERGY SOCIETY

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Introduction

Q: Please state your name, title, and business address.

A: James Owen, Executive Director, Renew Missouri Advocates d/b/a Renew Missouri ("Renew Missouri"), 409 Vandiver Dr. Building 5, Suite 205, Columbia, MO 65202.

Q: Please describe your current position, your education, and background.

A: Renew Missouri is an advocacy group based in Missouri that appears before regulatory agencies such as the Missouri Public Service Commission ("MPSC") as well as monitoring and working tangentially on matters before the Kansas Corporation Commission. ("KCC"). Our work involves engaging as intervenors on utility rate cases, applications for certificates of convenience and necessity ("CCNs"), merger and acquisition, Accounting Authority Orders ("AAOs"), and energy efficiency investment portfolios. We routinely engage in workshops, providing comments and serving on panels before Commissioners, regulators, and other stakeholders. Most recently, we have engaged in dockets involving co-generation as well as utility responses to the COVID-19 crisis. I have provided testimony before these agencies on general policy involving the generation, transmission, and distribution of power. Attached as **Schedule JO-1** is a list of my case participation. We have also lent our expertise and knowledge on legislative matters between the two states that includes issues ranging from energy efficiency investments to securitization of debt held by utility companies as well as community solar.

In regards to my background, I am an attorney by trade and was appointed as an Associate Circuit Court Judge prior to my experience in utility ratemaking. As far as my education goes, I obtained a law degree from the University of Kansas in Lawrence,

Kansas as well as a Bachelor of Arts in Business and Political Science from Drury University in Springfield, Missouri.

Q: What experience does Renew Missouri have in advocating for low-income ratepayers.

A: Renew Missouri is deeply engaged with obtaining policy results that provide access for low-income residents to renewable energy and energy efficiency. Through our representation of nationwide groups such as National Housing Trust ("NHT") and Energy Efficiency for All ("EEFA"), Renew Missouri has secured energy efficiency programs for all ratepayers as well as crafting on-bill financing tariff programs designed to aid low-income customers in making improvements to their living spaces. Additionally, Renew Missouri has worked with utility companies to develop pilots to provide community solar to low-income neighborhoods. We have worked to expand these efforts throughout Missouri and Kansas.

Q: What work does Renew Missouri conduct in the field of energy policy?

A: In my role as Executive Director at Renew Missouri, I continue to provide information and testimony on pieces of proposed legislation that may impact how utility regulators approach energy efficiency and renewable energy. Most recently, Renew Missouri staff and myself have been developing and offering educational programs on topics related to energy law and policy in Missouri on topics including demand response aggregation, accounting authority orders, and our year-end update covering state and federal rulemakings, PSC appeals, and energy efficiency/renewable energy updates. We have provided nearly 40 hours of continuing legal education credit over the past two years.

Q: Please summarize your professional experience in the field of utility regulation.

A: Before becoming Executive Director of Renew Missouri, I served as Missouri's Public Counsel, a position charged with representing the public in all matters involving utility companies regulated by the State of Missouri. While I was Public Counsel, I was involved in several rate cases, CCN applications, mergers, and complaints as well as other filings. As Public Counsel, I was also involved in answering legislators' inquiries regarding legislation impacting the regulation of public utilities.

Q: Have you been a member of, or participant in, any workgroups, committees, or other groups that have addressed electric utility regulation and policy issues?

A: In May 2016 I attended the National Association of Regulatory Utility Commissioners ("NARUC") Utility Rate School. In the Fall of 2016, I attended Financial Research Institute's 2016 Public Utility Symposium on safety, affordability, and reliability. While I was Public Counsel, I was also a member of the National Association of State Utility Consumer Advocates ("NASUCA") and, in November of 2017, the Consumer Council of Missouri named me the 2017 Consumer Advocate of the Year.

Q: Much of your experience is in Missouri and Kansas. What makes you qualified to testify for a matter in Kentucky?

A: The states themselves, in regards to the way they regulate utilities, are very similar. The three states contain wide swaths of rural areas that face economic challenges and hardships in terms of population retention and the stability of the employment market. For example, the Missouri Ozarks – which is served by an investor-owned electric utility – has more in common with eastern Kentucky than not when it comes to the composition of ratepayers. That's not to mention the challenges of generating and delivering electricity in a rugged terrain. All the while distributing such electricity to customers who are very spread out.

More generally, each state has investor-owned utilities that are vertically integrated and own all levels of their supply chain and have a monopoly on the production and sale of power. Based on our research, there are no significant differences between how monopolistic utilities are managed and regulated between the states. There are differences with how net metered customers are regulated, such as the implications of Kentucky's Senate Bill 100. But targeting solar customers with oppressive regulations is a fight that's been going on in Missouri since net metering was established in 2007. In Kansas, however, there was recent legal action that went all the way to that state's Supreme Court, and there is a lot of information we gained from that litigation in helping us understand how utilities can discriminate against that customer class.

II. Purpose and summary of testimony

Q: What is the purpose of your testimony?

A: To respond to Kentucky Power Company's ("KPC") Application for Rate Increases and Tariff Adjustments, specifically on issues of KPC's proposed rate tariff changes as a result of adjustments to the customer service charge rate by Company witness Alex E. Vaughn. Further, I provide a policy perspective on the ROE analysis provided by Company witness Adrien McKenzie. I will also analyze how the DSM budget as sponsored by Heather M. Whitney can be enhanced and improved. I will also examine the tariff changes affecting net metered customers also proposed by Mr. Vaughn. I will also review the advanced metering infrastructure, or AMI, proposal outlined by Stephen D. Blankenship.

Q: You represent three different organizations in this testimony. Who are they and what is their interest in this application?

A: I am testifying on behalf of the Mountain Association, Kentuckians For The Commonwealth, and the Kentucky Solar Energy Association. I shall refer to them, when needed, as "The Coalition." While the organizations are distinct with specific mission statements, their shared concerns focus on protecting ratepayers from undue economic and regulatory burdens as well as ensuring all ratepayers have equal access to cost-effective, clean energy.

Q: What is your recommendation to the Kentucky Public Service Commission ("Commission") in this case?

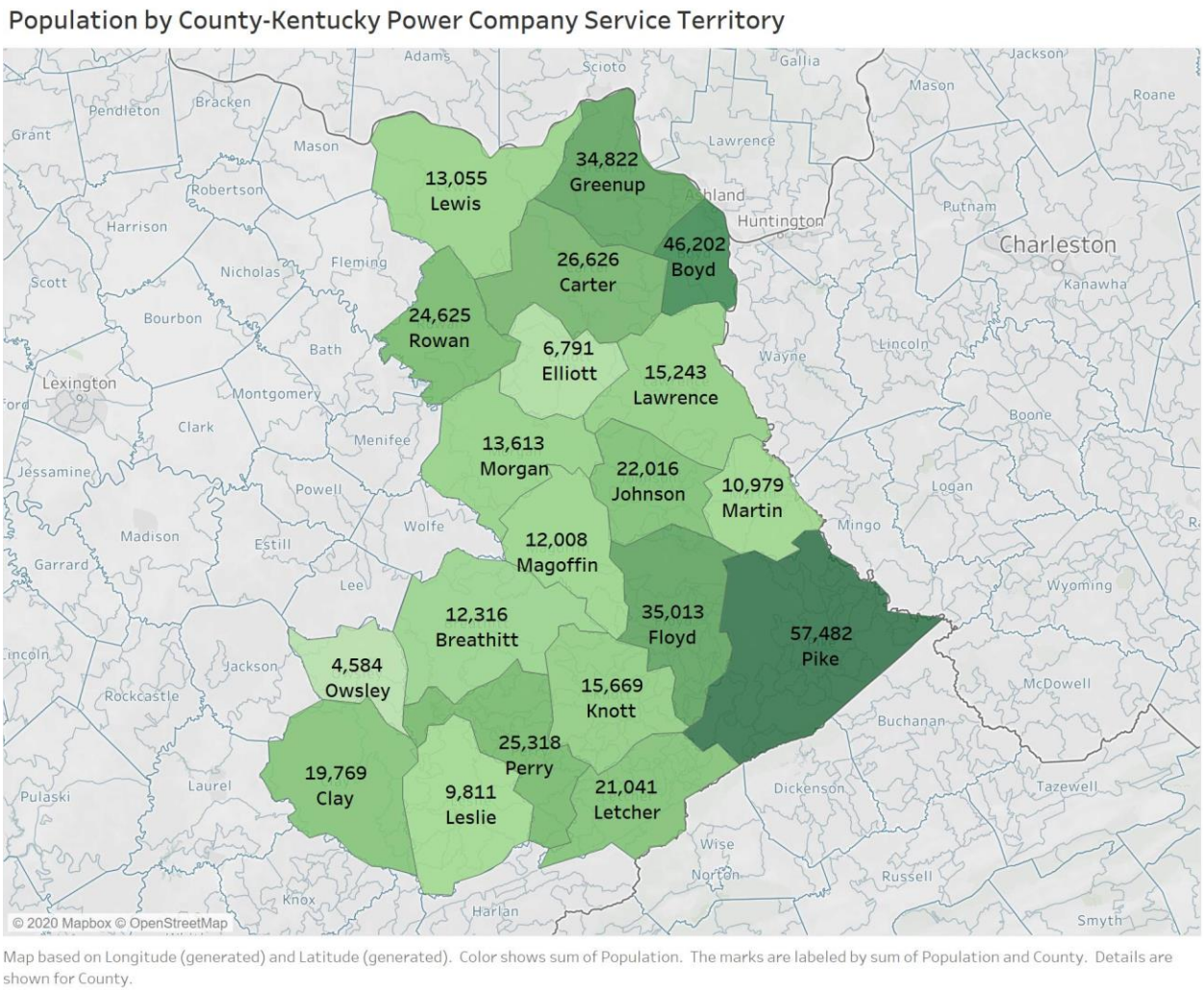
A: The Commission should weigh all proposals made by KPC with a focus on the economic hardship faced by its customers and specifically the current crisis predicated by COVID-19. To that extent, I recommend that no rate increase be considered at this time and that the current customer charge should remain unchanged. Further, any changes to rate design should be tied directly to any and all AMI improvements so that customers can actually modify their behavior to reduce their bills and lower their energy consumption. As an alternative to this proposal, the Commission should require KPC to engage in energy efficiency measures such as an on-bill financing tariff similar to the How$martKY program used by rural electric cooperatives in Kentucky. Finally, I would recommend that – instead of making any decision regarding the net metering tariff as proposed by the Company – that the Commission begin a comprehensive Cost-Benefit Analysis of the impact of distributive solar customers onto the grid.

Regulatory Policy and Economic Considerations

Q: What perspective do you use to provide these recommendations?

A: While the direct testimony focuses on the state of the utility, it is important to look at this proposal from the condition of the ratepayers in eastern Kentucky. According to Company witness Brett Mattison, there are 165,000 customers in KPC's service territory of over twenty counties. While the service territory does not fully capture the entirety of all of these counties, I thought some perspective on the populations of these counties as well as their economic conditions were important. According to the JO-1 Graphic, here's the population for each county:

JO1-Graphic: County Populations for the KPC Service Territory



The economic situation for this part of the state is challenging and would only be exacerbated by increased rates, increased customer charges, and impediments placed on customers trying to generate their own on-site energy. This situation will only worsen over the next few years as a result of the impact of COVID-19 on the KPC service territory.

Q: What were the recent economic conditions for this area like prior to 2020?

A: According to a 2019 report from the Appalachian Regional Commission[1], employment rate dropped in eastern Kentucky by 1.1 percent between the years of 2012 and 2017. This is compared to a 7.2 percent employment growth for the entire Kentucky Commonwealth and 9.6% for the entire nation over the same period. Over those past five years, the average earnings per employee dropped by about $1,000 with the gross paycheck averaging $36,600 in 2017. This number is $10,000 lower than the average in Kentucky and nearly $20,000 less than the national average.

Q: You mentioned earlier the impact COVID-19 will have on eastern Kentucky. Can you elaborate on that?

A: From a larger perspective, the COVID-19 pandemic has caused additional hardship throughout the country and the Commonwealth. While the eastern portion of the state – particularly the area served by KPC – has already absorbed a lot of economic loss over the past decade, there are still factors from the economic shutdown for which we have not seen the full, direct impact. What we have seen thus far should cause concern in terms of considering an increase on a ratepayer population already hurting. The impact of COVID-19 on KCP customer service territory has resulted in job loss, higher unemployment rates,

[1] See "Industrial Make-Up of the Appalachian Region: 2002-2017" dated November 13th of 2019. Statistics generally derived from summaries found at page 142-147 of report.

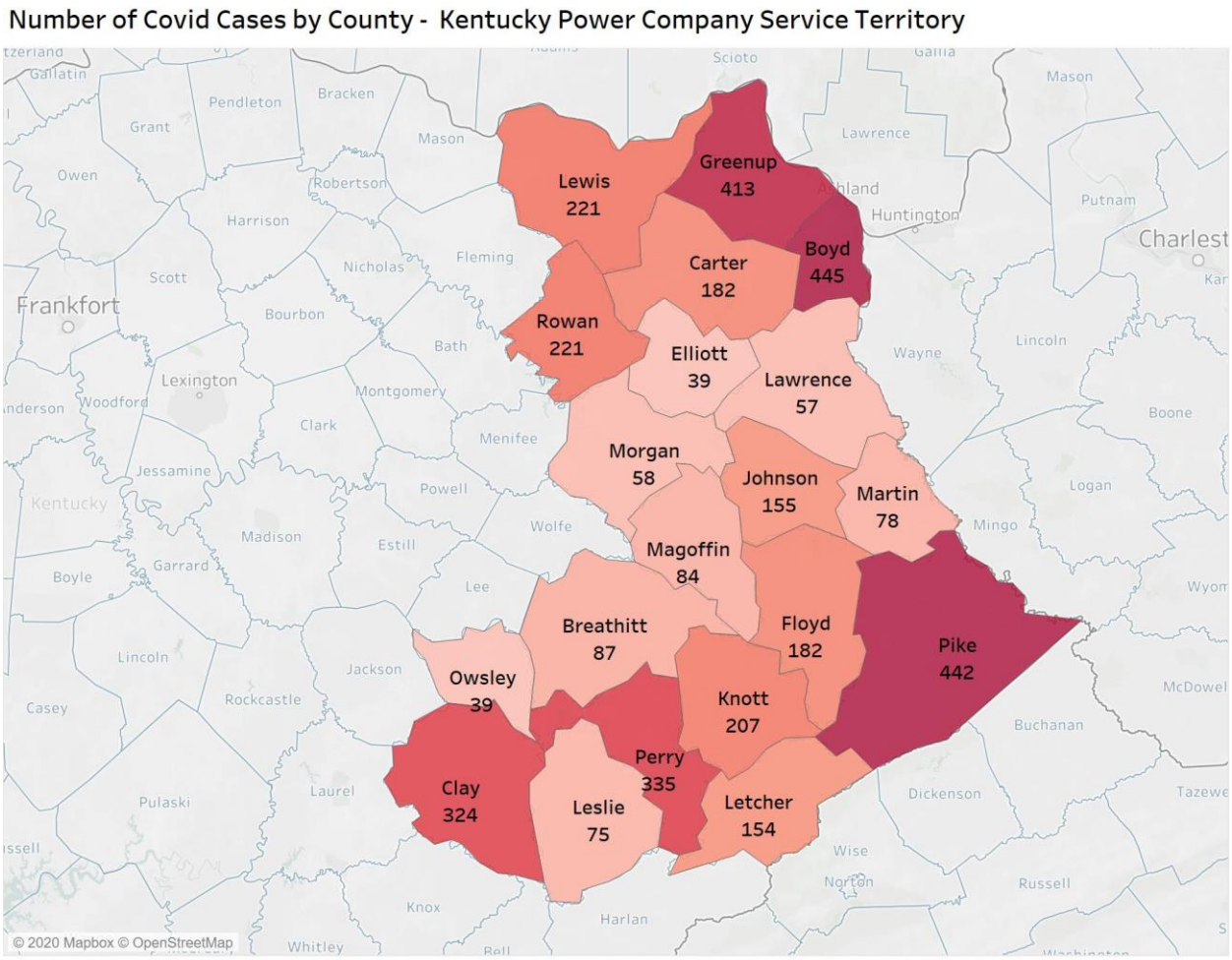
greater risk of eviction, greater risk of utility disconnections, an increase in permanently closed businesses, and COVID-related illness and death.

Q: What are the relevant statistics involving COVID and eastern Kentucky[2]?

In the twenty counties that make up the KCP service territory, there have been 3,798 recorded cases as of September 28, 2020. This data was compiled by manually searching data at the kycovid19.ky.gov. Greenup County, Pike County, and Boyd County have the highest number of COVID cases in the KCP service territory. This is illustrated below with Graphic JO-2. As of September 28, 2020, there have been 58 recorded COVID deaths in the KCP area. Lewis County recorded fourteen COVID related deaths; the highest rate out of all twenty counties. This is illustrated below by the map entitled Graphic JO-3.

Graphic JO-2

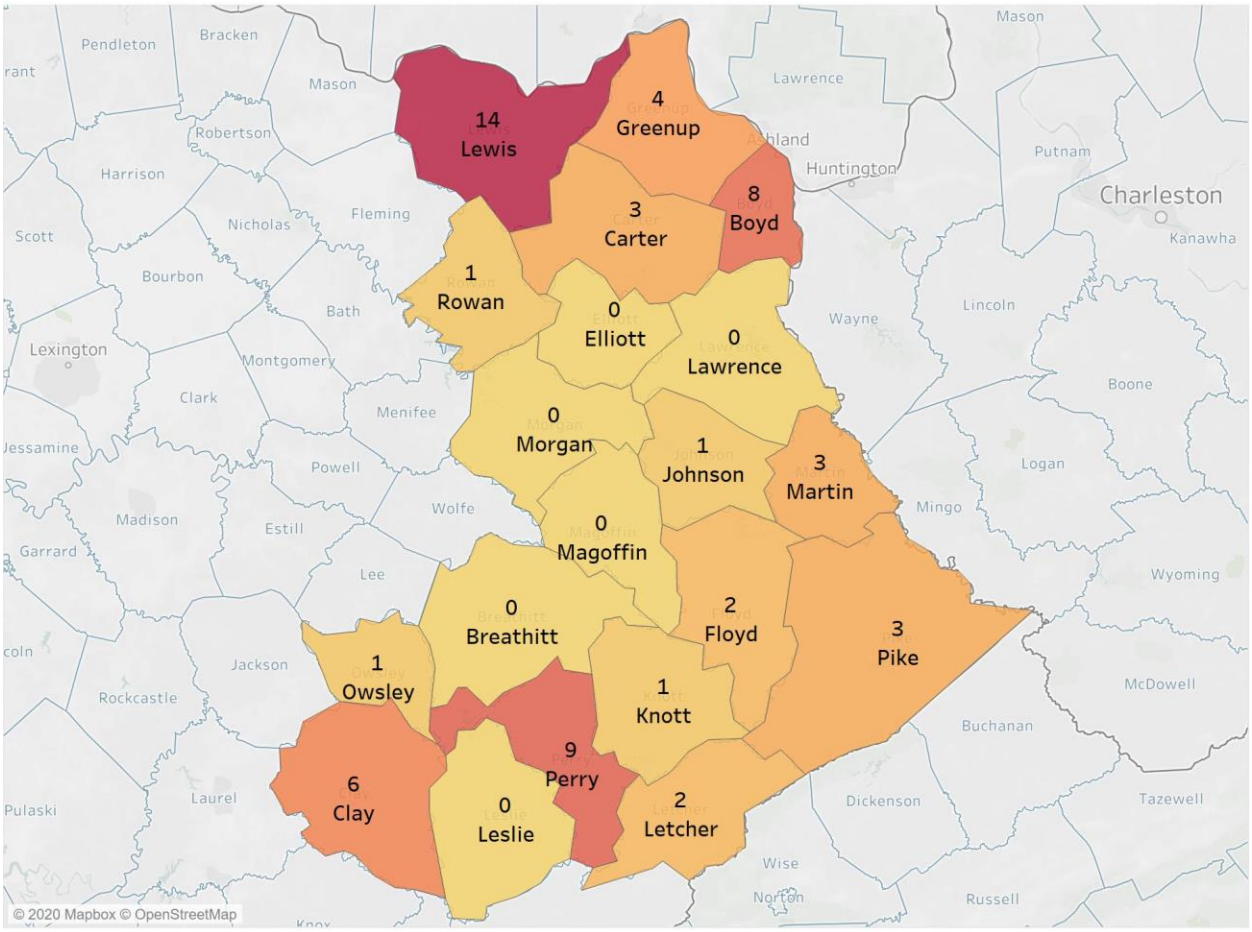
[2] Process for gathering information on each county was developed by manually searching each jurisdiction at kycovid19.ky.gov



Map based on Longitude (generated) and Latitude (generated). Color shows sum of Cases. The marks are labeled by sum of Cases and Location. Details are shown for Location.

Graphic JO-3

Number of COVID Deaths by County - Kentucky Power Company Service Territory



Map based on Longitude (generated) and Latitude (generated). Color shows sum of Deaths. The marks are labeled by sum of Deaths and Location. Details are shown for Location.

Businesses have also seen significant hardships. While there is no KPC-specific data I could find, I note 685 Kentucky businesses across the state permanently closed as of July 10th[3]. Businesses temporarily and permanently closing results in high unemployment percentages. In April, every county in the KCP service territory experienced an unemployment rate higher than 15%. The highest unemployment rate, in Magoffin County, reached almost 28%. Unemployment rates fell in May and June but have

[3] The website Yelp is producing data on this and can be found at the yelpeconomicaverage.com website for each state.

increased in July. As of June, in the KCP territory, unemployment rates averaged at around 10%[4]. We've tried to visualize this information below with Graphic JO-4.

Graphic JO-4. Unemployment rates for 2020 in the KPC Service Territory

Unemployment Percentages (%) by County - Kentucky Power Company Service Territory

Counties	March	April	May	June	July
Boyd	6.80	18.40		6.30	8.00
Breathitt	11.80	18.10	12.30	7.60	10.60
Carter	8.90	19.90	13.10	7.10	9.00
Clay	8.60	17.80	12.40	6.00	9.00
Floyd					
Elliott					
Greenup	8.50	18.50	12.70	6.60	8.20
Johnson					
Knott	8.40	15.30	10.30	6.40	9.40
Lawrence	9.10	16.00	11.10	6.10	8.00
Leslie					
Letcher	10.50	18.00	12.90	7.60	11.00
Lewis					
Magoffin	17.20	27.60	19.90	11.80	15.30
Martin					
Morgan					
Owsley					
Perry	9.00	17.30	12.00	7.10	9.80
Pike	8.40	17.00	12.00	6.80	9.00
Rowan	6.40	17.00	11.10	5.60	6.90

March, April, May, June and July (color) broken down by Counties.

As unemployment rates continue to hover at around 10%, there is cause for concern regarding evictions and eviction filings. Analysis of 2020 U.S. Census data estimates that 211,000 Kentuckian renters are unable to pay rent and are at risk of eviction. Renter households that are unable to pay rent and are at risk of eviction accounts for 42.24% of

[4] Evidence gathered by manually searching county data through the Kentucky Center for Statistics website kystats.ky.gov

total renter households in Kentucky. The total estimate in the shortfall of rent is $226,000,000[5]. Over the next four months, estimates conclude that there could be an additional 142,000 eviction filings[6]. According to an August 25th *Lexington Herald-Leader* editorial by Rebecca Shelton from the Appalachian Citizens' Law Center notes that, since the pandemic started, coal production in eastern Kentucky dropped by 40.4 percent with 300 coal jobs lost in the region.

In regards to disconnections, it seems Kentucky has yet to see the potential negative impacts of how this will impact ratepayers. There is an existing Commission Order dated March 16th directing IOU's in Kentucky to cease disconnections for non-payment as well as late payment charges. This order was amended on September 21st to allow for disconnections to commence on October 21st with the late payment fee moratorium to continue until December 31st. Which is not to say these efforts haven't been helpful. Certainly, the moratorium has mitigated the impact on the poorest of KPC's customers as well as those who have faced job losses or furloughs. But this also means nearly seven months of utility bills will be due as this rate case commences.

Although KPC is not disconnecting customers, electric service termination notices continued to be issued. The Commission enacted Docket Number 2020-00085 discussing the actions of all regulated utilities since the pandemic outbreak. In April, KPC issued 21,914 termination notices to its customers. That number has fluctuated in the past four months but has increased slowly since June. Most recent records show 19,886 service terminations issued for August.

[5] Data compiled from the website: https://www.census.gov/data-tools/demo/hhp/#/?measures=FJR

[6] This estimate comes from the National Coalition for a Civil Right to Counsel estimate based on current eviction data with future estimates on employment of each state. Such data can be accessed at https://www.stout.com/en/services/transformative-change-consulting/eviction-right-to-counsel-resources

Fifteen counties in the KCP service territory have opened schools for in-person learning, but also provide the option to participate in online learning. The counties are leaving the decision up to the parents. The other five counties are doing online only but may return to in-person learning soon[7]. This is important in considering how access to electric utility service now has an impact on children who have no control over their household's ability to pay for an increase in their bills.

Q: Why does this information matter in a utility rate case?

A: Populations which have the least ability to respond to the economic catastrophe caused by COVID-19 are the same population that is being hardest hit with the public health and economic consequences. The economic hardship is not simply caused by the loss of jobs, though that is a major part of it. The hardship is caused by the loss of income, which includes loss of jobs, a reduction of hours, and a reduction of work-related income. Since lower-income, low-wage employees also are the least likely to have paid leave time, not only personal illness, but also family illness requiring workers to take time off to be caretakers, suffer adverse economic impacts. Substantial research shows that one consequence of these economic harms are the inability to pay monthly bills, including utility bills. National research[8] quantifies the inability to pay utility bills in particular. Earlier this year, a survey found, since the beginning of the COVID-19 pandemic:

[7] Information was gathered manually by compiling school districts in the counties served in part by KPC and reviewing publicly available information on the school district's web site.

[8] Indiana University's Survey of Household Energy Insecurity in Time of COVID dated June 10th of 2020.

● 25% of respondents indicated negative job experiences as a result of the pandemic; 9% had lost their jobs, 10% had their hours reduced, and 6% were furloughed without pay.

● 15% of respondents lost their health insurance and an additional 10% had their health insurance benefits reduced.

● Nearly 20% of respondents indicated that they were not paying their rent or mortgage at all, and an additional 9% indicated that they were making only partial payments.

● About 40% of respondents indicated that it had harmed their ability to seek medical care.

● 26% of respondents indicated that it had harmed their ability to feed their family.

Due to the nature of low wage employment, these customers find it difficult, if not impossible, to avoid the economic crisis that has arisen due to COVID-19.

Q: What should the Commission do with this information and perspective?

A: In short, the Commission should be looking at the case filed by KPC while being mindful of the specific hardships of this time on Kentuckians. Certainly KPC has its own financial matters that require tending, but that should be placed in balance with the financial circumstances of its customers.

Conditions in eastern Kentucky and in KPC's service territory were dire before the COVID pandemic. They are far worse now and all factors indicate conditions are only going to deteriorate as the economic fallout becomes more fully realized with disconnections and evictions looming. Seeking large rate increase with a significant ROE request and an increase to fixed customer charges can only exacerbate this situation.

Q: Much of these economic issues are also tied to challenges with the coal industry; this is an industry your organization and the Coalition sees as being rapidly in decline. Do you find it problematic that you are pointing out economic issues involving coal in Kentucky?

A: No. Although the Coalition's members support the transition of our energy system from coal to renewable and efficiency resources, they have also worked for many years to advocate for a just economic transition, to enable Eastern Kentucky to emerge more prosperous in an economy beyond the coal industry. The Coalition sees the need for economic alternatives to the coal industry and has worked to implement those alternatives, which include clean energy. Therefore it is entirely consistent with the Coalition's advocacy related to the coal industry for them to address the hardship s experienced by KPC's customers as well as the economic opportunity represented by clean, distributed energy resources.

Further, we would point to comments made by Brett Mattison at the FERC "Technical Conference regarding Carbon Pricing in Organized Wholesale Electricity Markets" held on September 30th of 2020. In his written opening remarks, Mr. Mattison said:

> "Environmental impact is a priority to AEP and its subsidiaries (Editor's note: KPC is a subsidiary of AEP), and reducing carbon dioxide emissions is an important step towards reducing our environmental footprint. Consistent with this priority, AEP's generation fleet has transformed significantly over the last two decades, resulting in a 65% reduction in carbon dioxide emissions from 2000-2019. AEP expects our 2050 goal to exceed an 80% reduction and achieve larger reductions – with an aspiration of zero emissions. AEP will add more than 8,000

MW of regulated wind and solar generation through 2030. Thus, AEP continues to move to transform the energy industry to provide for cleaner generation."

During his verbal comments during the conference, Mr. Mattison "reiterated" KPC's commitment to reducing the carbon foot print of its operations.[9]

Q: What is the regulatory principle you regard in reviewing this work?

A: KPC and its ratepayers are partners in the regulatory compact. In return for protected monopoly status - a status which divests KPC of most fundamental business risks inherent in the free-market system, such as competing in the marketplace for willing customers - the utility is provided a reasonable opportunity to recover its costs and earn a fair and reasonable return on investment[10]. In a partnership, one expects the parties will share the partnership's benefits as well as its detriments – the partners' fortunes are necessarily linked. When looking at all the relevant factors in this case, and assessing the proper balance of those factors, the reasonableness of any rate increase is necessarily called into question.

Return on Common Equity (ROE)

Q: As a reminder, what is the ROE being sought by the Company in this case?

A: According to the testimony of Company witness Adrien McKenzie, KPC is entitled to a 10.3% ROE but is simply "only" asking for a 10% ROE.

Q: Do you have an opinion on this request?

[9] At time mark 6.51 at archived video found at http://ferc.capitolconnection.org/093020/fercarchive_flv.htm

[10] ***Bluefield Waterworks and Improvement Co. v. Public Service Commission of West Virginia***, 262 U.S. 679, 692 (1923)

A: Yes, the ROE requested by KPC is too high and is focused too much on the ability to draw capital and not on how this will affect ratepayers in their service territory. While Company witness Mattison said in the FERC panel of September 30th of 2020 that every decision by KPC comes down to how it will affect the "end user,"[11] that simply is not the case with this proposed ROE.

Q: From a policy perspective, how do you examine an ROE?

A: I am not holding myself out as a technical expert on ROE. However, I can look at how the law guides decisions on ROE calculation so that's where I like to start. To be clear, the Commission is not bound to apply any particular formula in the determination of a just and reasonable rate. The U.S. Supreme Court in ***Bluefield Waterworks and Improvement Co. v. Public Service Commission of West Virginia***, 262 U.S. 679, 692 (1923) has provided guidance on what is a just and reasonable rate: "What annual rate will constitute just compensation depends upon many circumstances and must be determined by the exercise of a fair and enlightened judgment, having regard to all relevant facts."

That same case also provides the basis for what is a just and reasonable rate of return for a regulated utility: "A public utility is entitled to such rates as will permit it to earn a return on the value of the property which it employs for the convenience of the public equal to that generally being made at the same time and in the same general part of the country on investments in other business undertakings which are attended by corresponding risks and uncertainties; but it has no constitutional right to profits such as

[11] At time mark 6.50 at archived video found at http://ferc.capitolconnection.org/093020/fercarchive_flv.htm

are realized or anticipated in highly profitable enterprises or speculative ventures. The return should be reasonably sufficient to assure confidence in the financial soundness of the utility and should be adequate, under efficient and economical management, to maintain and support its credit and enable it to raise the money necessary for the proper discharge of its public duties. A rate of return may be reasonable at one time and become too high or too low by changes affecting opportunities for investment, the money market and business conditions generally."

Further, the U.S. Supreme Court in ***Federal Power Commission v. Hope Natural Gas Company***, 320 U.S. 591, 603 (1944), has further stated: '[R]egulation does not insure that the business shall produce net revenues.' But such considerations aside, the investor interest has a legitimate concern with the financial integrity of the company whose rates are being regulated. From the investor or company point of view, it is important that there be enough revenue not only for operating expenses but also for the capital costs of the business. These include service on the debt and dividends on the stock. By that standard, the return to the equity owner should be commensurate with returns on investments in other enterprises having corresponding risks. That return, moreover, should be sufficient to assure confidence in the financial integrity of the enterprise, so as to maintain its credit and to attract capital."

Determining ROE is one of the most contentious issues in any rate case but, like almost everything with utility regulation, requires a balance between the needs of the utility and the interests of the public.

Q: Does the request by KPC provide such a balance as required by law?

A: No. As the Company witness McKenzie testifies, the primary reason KPC is seeking a 10% ROE is to attract capital to their investments. Again, this is only a portion of the formula required by law which states "(a) reasonable return on equity, as developed by the U.S. Supreme Court is: (1) adequate to attract capital at reasonable terms, thereby enabling the utility to provide safe and reliable electric service; (2) sufficient to ensure the Companies' financial integrity; and (3) commensurate with returns on investments in enterprises having corresponding risks."[12] As proposed, the ROE sought by KPC only meets one of the required criteria. Inherent in setting a just and reasonable rate is a requirement for the Commission to make rates as affordable as possible for the ratepayers without causing detriment to the utility. To accomplish this, it is crucial that the Commission keep ROE as low as reasonably possible. Because the Commission must balance the interests of the customers and the utility, an ROE that awards shareholders one dollar more than that minimum amount which is required to provide a fair opportunity to earn a reasonable return on investment is an unjust and unreasonable ROE. The effect of ROE on the customers and the affordability of rates in this case is staggering.

Q: How does the ROE request compare with other utilities around the country?

A: According to reporting by S&P Global on this topic[13], KPC would exceed the median and average ROE issued by public utility commissions to electric utilities from around the

[12] ***Bluefield Waterworks and Improvement Co. v. Public Service Commission of West Virginia***, 262 U.S. 679(1923); ***Federal Power Commission v. Hope Natural Gas Company***, 320 U.S. 591 (1944).

[13] Electric ROE Authorizations Drift Lower in H1'20 as Virus Worries Continue https://www.spglobal.com/marketintelligence/en/news-insights/research/electric-roe-authorizations-drift-lower-in-h1-20-as-virus-worries-continue

country. In fact, only three states – California, Iowa, and Virginia – have awarded a utility with an ROE of 10% or more. The range across the country for the full year of 2019 went from 8.25% to 10.42% with an average of 9.55% and a median of 9.45%.

This tightens as the analysis focuses on utility ROE s in states with a vertically-integrated market structure. This range went from 9.25% to 10.02% with an average of 9.67% and a median of 9.70%. It will probably surprise no one reading this testimony that the lowest ROE in this category was awarded by the Kentucky Commission to Duke Energy Kentucky, at 9.25%. As an illustrative point, we have included a graph from the Regulatory Research Group that accompanied the research we rely upon and replicated it below in **Graphic JO-5 - ROE of Electric IOU's in 2020:**

H1'20 electric return on equity authorizations

Companies	State	Date of decision	ROE (%)	Decision type
Vertically integrated cases				
Interstate Power and Light Co.	IA	01/08/20	10.02	Settled
PacifiCorp	CA	02/06/20	10.00	Fully Litigated
DTE Electric Co.	MI	05/08/20	9.90	Fully Litigated
Indiana Michigan Power Co.	MI	01/23/20	9.86	Settled
Virginia Electric and Power Co.	NC	02/24/20	9.75	Settled
Indiana Michigan Power Co.	IN	03/11/20	9.70	Fully Litigated
Duke Energy Indiana, LLC	IN	06/29/20	9.70	Fully Litigated
Southwestern Public Service Co.	NM	05/20/20	9.45	Settled
Avista Corp.	WA	03/25/20	9.40	Settled
Public Service Co. of Colorado	CO	02/11/20	9.30	Fully Litigated
Duke Energy Kentucky, Inc.	KY	04/27/20	9.25	Fully Litigated
Average			**9.67**	
Median			**9.70**	
Delivery only cases				
Fitchburg Gas and Electric Light Co.	MA	04/17/20	9.70	Settled
Rockland Electric Co.	NJ	01/22/20	9.50	Settled
CenterPoint Energy Houston Electric, LLC	TX	02/14/20	9.40	Settled
AEP Texas Inc.	TX	02/27/20	9.40	Settled
Liberty Utilities (Granite State Electric) Corp.	NH	06/30/20	9.10	Settled
Consolidated Edison Co. of New York, Inc.	NY	01/16/20	8.80	Settled
Central Maine Power Co.	ME	02/19/20	8.25	Fully Litigated
Average			**9.16**	
Median			**9.40**	
Limited-issue rider cases				
Appalachian Power Co.	VA	02/25/20	10.42	Fully Litigated
Virginia Electric and Power Co.	VA	02/18/20	10.20	Fully Litigated
Virginia Electric and Power Co.	VA	02/03/20	10.20	Fully Litigated
Virginia Electric and Power Co.	VA	02/03/20	10.20	Fully Litigated
Appalachian Power Co.	VA	05/21/20	9.42	Fully Litigated
Virginia Electric and Power Co.	VA	02/03/20	9.20	Fully Litigated
Virginia Electric and Power Co.	VA	02/03/20	9.20	Fully Litigated
Virginia Electric and Power Co.	VA	03/20/20	9.20	Fully Litigated
Virginia Electric and Power Co.	VA	04/13/20	9.20	Fully Litigated
Average			**9.69**	
Median			**9.42**	
All electric cases				
Average			**9.55**	
Median			**9.45**	

Data compiled Aug. 3, 2020. Reflects return authorizations in H1'20.
Source: Regulatory Research Associates, a group within S&P Global Market Intelligence

With that said, among utilities under the vertically-integrated model, the Kentucky Commission has shown itself to be wisely conservative in terms of how it awards ROEs. But even in a review of vertically-integrated states across the county, KPC's request fits into the highest end of awarded ROE s.

Q: You mentioned the ROE decision in the Duke Kentucky Energy, Inc. rate case earlier in your testimony. What was the Commission's reasoning in ordering a 9.25% ROE?

A: The Commission, in their Order, pointed to the 9.25% as being a part of the range of analysis provided by the Company itself and was above the recommendation of the Kentucky Attorney General's office. The Commission further noted that the utility industry is "low risk" and that the utility had tools that would help with mitigating the effects of regulatory lag. It used those factors as a belief that the previous ROE awarded to Duke Kentucky Energy of 9.75% was not factoring in the realities of the marketplace and that a downward adjustment was necessary.

Q: Why is it important to focus on whether a state follows a vertically-integrated model versus how some people would describe a "restructured" model of deregulation?

A: In restructured states, utilities should be allowed a greater return on equity if they believe they can realize it. They are working within market forces that are not present in a vertically-integrated state when the only competition is that which is synthesized by the ratemaking process. In fact, the utility that received the highest ROE of any vertically-integrated state was 10.02% by the Iowa Utilities Board to Alliant Energy Corp. It should be noted Iowa is much different than many vertically-integrated states in that there are service territories that allow for third-party purchase power agreements.

With that said, KPC is asking for the highest end of the ROE spectrum among vertically-integrated states.

Q: Does KPC offer a range of potential ROE based on its analysis?

A: Yes. Company witness MacKenzie notes the analysis ranges from 9.4% to 10.5% based on the weight provided to "different extremes at the high and low ends of the extreme." It should also be noted that MacKenzie goes further in noting that the COVID-19 pandemic is not factored into this analysis because there's no way to know the long-term effects of COVID-19 on the financial markets.

Q: Do you have concerns about the witnesses' exclusion of COVID-19 from its analysis?

A: Yes. This analysis leaves out any consideration of the impact on COVID-19 on the ratepayers. Part of the problem with KPC's entire application is a focus on their financial positioning without considering the financial status of their ratepayers. In fact, we can look at the current situation for eastern Kentucky – as well as the entire Commonwealth – to show that there are adverse consequences to the financial status of the public. Joblessness is up, evictions are up, there is a tidal wave of electric disconnections coming. Electricity affordability is even more critical due to more children learning from home, as an example. The Commission can look at these conditions right now and make a determination that increasing the ROE for the Company will be a detriment to customers.

Q: What is your recommendation?

A: Given the economic challenges facing eastern Kentucky at this point in time, issuing such a high ROE would be a detriment to KPC's ratepayers. I believe the Commission should look to award KPC an ROE towards the lower end of any analysis conducted by Commission staff. This would be consistent with the most recent Commission ruling on

ROE and factors in the economic circumstances of their ratepayers in determining what a "fair and reasonable" ROE constitutes during such an unprecedented period.

An ROE similar to what was ordered in that previously decided Duke Kentucky case would be appropriate not only for the ratepayers of KPC but for the Company itself.

Rate Design

Q: Please explain the change to residential customer charges proposed by the Company.

A: The Company proposes to increase the monthly basic service charge from $14/month per customer to $17.50/month per customer in this tariff.

Q. On what basis does the Company propose to increase residential customer charges?

A. The Company believes it is necessary to increase its basic service charge from $14/month per customer to $17.50/month per customer on the basis of cost recovery. In his direct testimony, Company witness Mr. Alex E. Vaughn states that an increase to the basic service charge will reflect the proportional cost of providing service to this customer class.

Utilities across the United States have sought increased fixed charges in recent rate cases, with mixed results. Typically, a higher fixed charge can guarantee cost recovery to utilities facing reduced loads due to energy efficiency measures, reduced consumption induced by distributed energy generation or customer defection, or due to economic

challenges to the utility, including those introduced by volatile or changing weather patterns.[14]

Q: Please summarize the effect of the Company's proposed changes to the basic service charge.

A: The proposed increase to the basic service charges would have a detrimental impact on low-income customers, low-usage customers, customers employing distributed energy resources on-site (e.g., net metered solar, etc.), and on the overall energy conservation and energy efficiency goals supposedly important to the Company itself. An increase to the basic service charge, as proposed in this tariff, introduces a negative feedback loop into the cycle of energy generation, consumption, and subsequent demand. Namely, by raising standard fees that do not vary with customer energy use and over which customers themselves have no control, the proposed basic service charge increase will have the adverse effect of dis incentivizing energy conservation and energy efficiency investments of residential customers.

The proposed $3.50 increase will violate rate-design principles regarding bill predictability for customers reducing consumption, and will impose a substantial shock to customers.

Q. How does this basic service charge increase compare to other such proposals that have come before the Commission?

A. It should be noted that, in Mr. Vaughn's testimony, the Commission increased the KPC customer charge from $11 to $14 in January 2018 under a settlement approved in Case

[14] Whited, M. et al. (2016). Caught in a fix. Synapse Energy Economics.

No. 2017-00179. In a matter of only a few years, the basic service charge will actually have risen $6.50, or an increase of slightly over 59%, under this current proposal.

Most recently, in Case No 2019-00271, the Commission rejected a proposed fixed charge increase by Duke Energy from $11 to $14. The Commission rejected this 27.2% increase and allowed this fixed charge to increase to $12.60.

In case number 2018-00294, Kentucky Utilities Companies (KU), the Commission approved a basic service charge for residential customers of $0.53 per day, or $16.69 per average month. In case number 2018-00295, Louisville Gas and Electric (LG&E) was allowed a daily charge of $0.45 for basic services for customers, or $14.15 per average month.

All of these recent decisions, put into effect over the past three years, indicate that the increase sought by KPC would make its residential customer charge the highest for any IOU in the Commonwealth if approved.

Q: What is your recommendation regarding the basic service charge?

A: It is our recommendation that it remain at $14/customer.

Q. What approach was taken in making your recommendation?

A. I will present a conceptual analysis to demonstrate how the proposed charge increase will negatively impact energy conservation and energy efficiency goals through what I term a "negative feedback loop."

Q. How would increased customer charges impact vulnerable populations?

A. Increased fixed charges impose a disproportionate burden on vulnerable customers, including low-income customers, seniors' households or households with young children, who may be struggling with volatile or burdensome electricity bills. Low-income

customers already suffer heavily from high costs of energy, and are more likely to forego critical services (e.g., using air conditioning during heat events, heating homes to comfortable temperatures during the winter) in favor of keeping bills low.[15] These are costs over which low-income or conservation-minded customers attempt to exert control; in contrast, an increase to fixed charges is a cost over which there is absolutely nothing the customer can do to manage their bill. An annual bill increase for basic service charges alone to $216.30 (from $173.04) will have a much more sizable impact on a low-income customer than it would to a customer earning a comfortable middle class wage.

Q. How would an increased basic service charge impact low-usage customers?

A. Increased customer charges are not sensitive to the nuances and varied system requirements among diverse customers. For example, apartments historically have the lowest cost of service of any customer class due to the fact that multiple units can be served through a single delivery point.[16] Despite the lesser demand placed upon the system by such customers, those who reside in apartments may be unfairly and disproportionately assigned to customer-related cost recovery charges. Additionally, low-income customers are more likely to reside in multi-family apartments, which cost less than individual residences to serve, as well as tend to consume less energy than their higher-income counterparts. An increase to the basic services charges will impose inequitable costs to these customers, who can literally do nothing to respond.

[15] Vote Solar, "Guidance for utility commissions on Time of Use rates: A shared perspective from consumer and clean energy advocates", Electricity Rate Design Review Paper No.2, July 15, 2017, *available at* https://votesolar.org/files/9515/0039/8998/TOU-Paper-7.17.17.pdf

[16] Lazar, J. (2016) "Use great caution in design of residential demand charge rates". Regulatory Assistance Project, *available at* https://www.raponline.org/wp-content/uploads/2016/05/lazar-demandcharges-ngejournal-2015-dec.pdf

Q. How would an increased basic services charge impact customers employing distributed generation, or those investing in energy efficiency upgrades?

A. Utilities have insisted that an increased fixed charge will assist the utility in recovering costs formerly associated with full-time customers, but when accounting for customers who have become less reliant on the grid due to their installation of solar panels or other distributed energy resources ("DER"), will account for the losses, defections, or sales reductions to such customers. However, higher fixed charges essentially punish low-usage customers, who are (1) actually contributing predictable, low-cost power to the grid, (2) reducing their own demand during system peaks, or (3) covering the cost of equipment that ultimately contributes to the grid, as customers utilizing DER cover the costs of installation and operation of the equipment.

The Company does not pay its DER customers for anything but power sold back to the grid. As this power-purchasing relationship mirrors the transactional relationship between the Company and the power market, it cannot be said that other customers absorb the cost of another's net metered solar, for example. Recent studies have pointed to the fact that DER customers provide one of the surest avenues by which a utility may lower its revenue requirement through avoided investment in additional generation, transmission, and distribution equipment.[17] To be clear, an increase to the fixed customer charge will disincentive DER proliferation, and is shortsighted in its imposition on resource diversification. Also, just to make clear, a net metered customer-generator does not make a "sale" with excess generation. It is only available as a credit amount to reduce the

[17] Whited, M. et al. (2016). "Caught in a fix." Synapse Energy Economics. See Figure 10, p.28.

current billing cycle bill total or future bill amounts (with grandfathered N.M.S. service with excess kWh available after netting for current billing cycle).

Q. How would an increased customer charge impact system-wide energy usage?

A. In a 2015 case before the Minnesota Utilities Commission, an increase to fixed customer charges was denied on the basis that "a customer-charge increase[18] for [residential] classes would place too little emphasis on the need to set rates to encourage conservation."[19] The unintended consequence of such actions on energy conservation and consumption have been noted elsewhere, including by environmental advocates in a recent rate design case before the Missouri Commission. Notably, Sierra Club witness Avi Allison stated that an increase to fixed customer charges would render investments in energy efficiency "less effective" as "only the energy charge can be avoided through greater energy efficiency."[20]

Furthermore, while the Company seeks an increase to its customer charge, utility regulatory bodies from across the country have made a few notable decisions to ***decrease*** high customer charges. Regulators, environmental groups, and consumer advocates cited the impacts on energy conservation and efficiency, to DER customers, and to low-income customers as driving forces behind the decision to reduce fixed customer charges (see

[18] Many jurisdictions use the phrase "customer charge" versus "basic services charge" but it is our understanding they are synonyms.

[19] Minnesota Public Utilities Commission, In the Matter of the Application of Northern States Power Company for Authority to Increase Rates for Electric Service in the State of Minnesota; Findings of Fact, Conclusions, and Order; Docket No. E-002/GR- 13-868, May 8, 2015, p. 88.

[20] Rate Design Direct Testimony by Allison, A., on behalf of Sierra Club. Public Service Commission of the State of Missouri File No. ER-2019-0335, In the Matter of Union Electric Company, d/b/a Ameren Missouri's Tariff to Decrease Its Revenues for Electric Service, December 18, 2019, p.11.

footnotes; 2018 Connecticut Public Utilities Regulatory Commission rate case[21]; 2017 New York Public Service Commission rate case[22]). In the 2017 case before the New York Public Service Commission, the Acadia Center listed four primary reasons behind their support for a reduced customer charge, three of them environmental. High customer charges: *(1) disincentivize* energy conservation, efficiency measures, and DER proliferation because they devalue a kWh saved or generated; *(2)* reduce diversity of the overall resource portfolio on a particular grid for the same reason; and *(3)* inhibit GHG emissions reductions targets by disincentivizing investment in the technologies and resources that contribute to a ”cleaner” grid (e.g., energy efficiency measures & DER).[23]

Net Metering Tariff Proposal

Q: Do you agree with KPC's proposal to change its net metering service tariff?

A: No. I strongly recommend that the Commission deny the Company's proposal to replace its Net Metering Service ("NMS") tariff. Based on my professional experience and my knowledge of this case and net metering in Kentucky, I do not believe the Company's proposed changes will serve the goal that the Company claims to pursue. Moreover, I believe the Company's proposal will unnecessarily harm customers who choose to install generation on their properties.

The Commission has significant authority under the statute to ensure that customers have at least some opportunity to install solar on their own properties and to be compensated

[21] Connecticut Public Utilities Regulatory Commission. Docket No. 17-10-46, Decision In the Matter of the Connecticut Light and Power Company d/b/a Eversource Energy (April 18, 2018).

[22] State of New York Public Service Commission. Case No. 17-E-0459, Order Adopting Terms of Joint Proposal and Establishing Electric and Gas Rate Plan In the Matter of Central Hudson Gas & Electric Corporation (June 14, 2018).

[23] Statement in Support of Joint Proposal by Howe, C., on behalf of Acadia Center. New York Public Service Commission. Case No. 17-E-0459, In the Matter of the Central Hudson Gas & Electric Corporation (May 2, 2018).

fairly for the energy they provide to the grid. The Commission should refrain from approving changes to NMS tariffs until there has been thorough Cost-Benefit Analysis that accounts for all of the benefits that net metering provides to the grid and to the utility.

Q: What reason does KPC provide for the changes to the NMS tariff?

A: On page 23 of Company witness Alex Vaughan's Direct Testimony, he states that the changes to the NMS tariff are intended to effectuate what he claims is one of the priorities of Senate Bill 100 ("the Net Metering Act"), which is to end or drastically reduce intra-class subsidies caused by net metering. Mr. Vaughan then outlines four changes to the NMS tariff that would accomplish this goal. The so-called "Cross-subsidization" argument is not a new one. It is part of a nationwide push on the part of electric utilities to diminish the growth of customer-owned and customer-sited distributed generation, such as photovoltaic ("PV") solar energy systems. This effort is based on the mistaken claim that customers with distributed generation are being unfairly subsidized by all other ratepayers because they are paying less of their fair share of "fixed costs." I will explain these competing arguments around cross-subsidization in my discussion of "the Value of Solar" below.

Q: Do you believe the Company is entitled to its proposed changes in order to serve the statutory goal of reducing intra-class subsidies?

A: No. The Net Metering Act, which went into effect on January 1, 2020, clearly provides the Company with the right "to implement rates to recover from its eligible customer-generators all costs necessary to serve its eligible customer-generators, including but not limited to fixed and demand-based costs, without regard for the rate structure for

customers who are not eligible customer-generators."[24] However, the statute also grants the Commission broad authority to determine the rate at which to compensate customer-generators for their generation, or what the statute refers to as a "dollar-denominated bill credit."[25] Thus, it is in the Commission's discretion to determine what rate will provide the Company with all of its fixed and demand-based costs. In setting this rate in this case and all other related cases, the Commission should ensure it is accounting for all costs and benefits associated with customer-owned solar energy systems.

Additionally, the Commission should hold utilities to their full burden of proof and require them to produce substantial evidence for all of the costs and benefits that each solar system contributes to the utility's system. As Mr. Vaughan's testimony (and the Company's Exhibit AEV-3) explains, the Company's proposed rate includes: avoided energy costs at the Company's marginal cost of energy, including marginal losses and congestion; distribution losses; and avoided generation and transmission fixed costs. Yet Mr. Vaughan does not discuss whether the Company assessed the system-wide benefits or savings experienced due to solar, which include: reduced transmission and distribution losses; reduced congestion at stressed nodes and distribution points along the grid; peak load reductions or shifts; reduced costs along the fuel supply line; reduced environmental liabilities and/or environmental compliance costs; avoided generation capacity investments; reduced grid support services; improved grid resiliency; and others. These savings and benefits extend beyond the simple "cost of electric service" to the particular customer-generator. It is my opinion that the Company has not met its burden of proving

[24] KRS 278.465.2(5)
[25] KRS 278.465.2(4)

that its rate of $.03659/kWh is the equitable figure for compensating customer generators.

Q: How should the Commission consider costs and benefits when setting the compensation rate?

A: I recommend that the Commission conduct a comprehensive Cost-Benefit Analysis to study all the costs and benefits of distributed solar on Kentucky's electric grid. At a minimum, the Commission's Analysis should consider all financial costs and benefits that occur system-wide as a result of integrating distributed generation onto the grid, backed by significant and thorough data. In addition, the Commission should carefully consider whether cost impacts outside of utilities' cost of electric service should be factored in as a matter of public policy (e.g. the value of local job creation, customer autonomy, reduced environmental impacts, etc.). The Commission should refrain from approving any utility's proposed compensation rate until such a Cost-Benefit Analysis is conducted with full opportunity for review and input by stakeholders.

It is my understanding that the Commission has recently published a Request for Proposal ("RFP") seeking assistance on issues relating to net metering and solar. The RFP's Scope of Work includes a request to "analyze and evaluate utility rate applications as they relate to net metering compensation and the rates applied to net metering customer usage." This seems like the perfect opportunity to conduct a comprehensive Cost-Benefit Analysis for distributed solar, or a full Value of Solar study as other states have done.

Q: How have other states approached the issue of assessing the costs and benefits of distributed solar for purposes of customer-generator compensation?

A: The concept of the Value of Solar has been a topic of conversation in the United States for more than a decade. Many states have taken it upon themselves to solicit and conduct studies of all the costs and benefits of integrating distributed solar onto the grid. More often than not, these studies conclude that solar provides a net benefit to a utility's system, more than making up for the added costs to the grid or the reduced fixed costs paid by each customer-generator. These studies have led experts to conclude that the economic benefits of net metering actually outweigh the costs and impose no significant cost increase for non-solar customers. This conclusion obviously flies in the face of the common utility argument that solar customers receive a cross subsidy from non-solar ratepayers.

Many states have conducted Value of Solar studies of one form or another. States that have existing studies include: Arizona (2016 and 2013); Arkansas (2017); California (2016, 2013, 2012, 2011, 2010, 2005); Colorado (2013); Florida (2005); Hawaii (2014); Iowa (2016); Louisiana (2015); Massachusetts (2015); Maine (2015); Mississippi (2013); North Carolina (2014); Nevada (2017, 2014); New Jersey and Pennsylvania (2012); New York (2012 and 2008); South Carolina (2015); Texas (2014), including for the cities of San Antonio (2013) and Austin (2006); Utah (2014); Vermont (2014); Virginia (2014); and Wisconsin (2016).[26] Other states have conducted dockets and processes for establishing a Value of Solar methodology or framework, such as: Minnesota (2014); Rhode Island (2015); and New York (2016). In addition to state studies, several cities and utilities have conducted their own, and the majority of studies arrive at a value for solar kWhs that is higher than the average retail rate for electricity in the jurisdiction.

[26] Solar Energy Industries Association, "Solar Cost-Benefit Studies," Available at: https://www.seia.org/initiatives/solar-cost-benefit-studies

The party conducting the study seems to matter as well. Studies conducted by utilities typically find a lower value for solar, although usually still more than the retail cost of electricity. In 2016, Frontier Group and Environment America's Research and Policy Center published a meta-analysis of 16 value-of-solar studies, and found that studies that left out societal benefits valued solar, on average, at 14.3 cents per kilowatt-hour, compared to 22.9 cents for those studies that at least accounted for greenhouse gas emissions.[27] Only one of the studies found a solar value less than KPC's proposed compensation rate in this case. This is more than enough reason for the Commission to refrain from accepting one utility's proposed rate and instead conduct its own docket to study the costs and benefits of net metering system-wide.

There are numerous resources to aid regulators in determining how to design a Value of Solar study. I recommend a resource from the National Renewable Energy Laboratories (NREL), which has published a program design guide for regulators that includes considerations for conducting a study and implementing its findings.[28]

Q: What is your opinion with regard to the Company's first proposed change to its NMS tariff relating to the netting period?

[27] Gideon Weissman and Bret Fanshaw, "Shining Rewards: The Value of Rooftop Solar Power for Consumers and Society." October 2016, Frontier Group and Environment America Research and Policy Center. Available at: https://environmentamerica.org/sites/environment/files/reports/AME%20ShiningRewards%20Rpt%20Oct16%201.1.pdf

[28] Mike Taylor, Joyce McLaren, Karlynn Cory, Ted Davidovich, John Sterling, Miriam Makhyoun, "Value of Solar: Program Design and Implementation Considerations." The National Renewable Energy Laboratories, March 2015. Available at: https://www.nrel.gov/docs/fy15osti/62361.pdf . See also *National Standard Practice Manual For Benefit-Cost Analysis of Distributed Energy Resources AUGUST 2020.* *www.nationalenergyscreeningproject.org/national-standard-practice-manual/*

A: Mr. Vaughan's testimony summarizes the Company's proposal to change the netting period for customer-generators taking service under the NMS tariff. The Company is proposing two time of use ("TOU") netting periods, 8 AM to 6 PM and 6 PM to 8 AM, for each day of the year, where all net kWh (and kW where applicable) usage (negative or positive) will be accumulated for each netting period for the billing period. To the extent that this change in the netting period is intended to align with the change in the Net Metering Law at Section 278.465.2(3), KRS, I do object to allowing credits to be used only in the time period for when it was created as this reduces the value of the solar investment. Moreover, if adapted, this should be a program for which customers are allowed to opt-in. However, it is essential that any forced netting period, or change in kWh credit value, is accompanied with a full accounting of all costs and benefits of the solar energy being provided to the grid while remaining easy for customers to understand. This would best be accomplished by allowing all relevant stakeholders to participate in a docket to create. Forcing TOU netting periods with net metering creates great uncertainty regarding return on investment and ability of solar contractors and financing entities to evaluate projects.

Q: What is your opinion with regard to the Company's second proposed change to its NMS tariff relating to compensation for customer-generators' excess generation?

A: Mr. Vaughan's testimony summarizes the Company's proposal to change the compensation rate paid to customer-generators from a one-to-one credit for kWh to a payment of $.03659/kWh. I do not have an inherent objection to switching from a one-to-one bill credit to a monetary compensation model for all kWh produced. However, if the compensation rate undervalues the solar kWh provided to the grid, then it will have the

overall effect of undercompensating customer-generators for the benefits they provide, which will unfairly disincentivize, and make financial evaluations more challenging, for solar installation, erode customer rights, hurt solar jobs and economic development in Kentucky, and provide the utility with an unearned windfall.

As I stated above, the Company has not met its burden of proving their proposed rate accounts for all the costs and benefits that net metered solar brings to the grid and to the utility. Without accounting for all of solar's benefits, the Commission cannot know whether solar customers are in fact contributing more value to the utility than the costs of serving them. These benefits include, but are not limited to: 1) reduced transmission and distribution losses; 2) reduced congestion at stressed nodes and distribution points along the grid; 3) peak load reductions or shifts; 4) reduced costs along the fuel supply line; 5) reduced environmental liabilities and/or environmental compliance costs; 6) avoided generation capacity investments; 7) reduced grid support services; and 8) improved grid resiliency.

Q: What is your opinion with regard to the Company's third proposed change to its NMS tariff relating to its NMS tariff involving the cost recovery for excess generation credits?

A: I have no objection to the Company's recovery of costs for excess generation credits to customer-generators, provided that the credits are made at a rate that reflects all of the costs and benefits of net metering.

Q: What is your opinion with regard to the Company's fourth proposed change to its NMS tariff relating to its application fee?

A: The Company proposes higher application fees for level 1 and level 2 net metering applications, and removes the $1,000 cap for level 2 system impact studies if a study is deemed necessary. The Company claims – without proper justification – that the higher fees are intended to recover the costs of serving customer-generators, and that these higher fees still do not recover the full cost.

The Company grossly oversteps its bounds here. Approving such a change would enable KPC to charge customers an unlimited amount for level 2 net metering applications if it was determined to stop a solar project from going forward. The Net Metering Law is clear that net metering is to be offered to all customers: "Each retail electric supplier shall make net metering available to any eligible customer-generator that the supplier currently serves or solicits for service."[29] This open-ended authority to charge unlimited amounts for studies which the utility has sole discretion to determine are needed would give the Company the effective authority to offer or deny net metering to any level 2 applicant as it wished. In addition, the clear impact of higher application fees is to dissuade customers from installing solar. Without a full accounting of all costs and benefits of solar, the Commission has no way of knowing whether customer-generators are contributing more benefits than costs or vice versa.

The Commission should deny the Company's proposed hike in application fees.

Q: Are there other concerns the Commission should consider in approaching the company's proposed changes to its NMS tariff?

A: Yes. As Mr. Vaughan admits on page 26 of his Direct Testimony, the Company only has 44 total net-metered solar customers at the end of the test year.. It is important to

[29] KRS 278.466.2

emphasize how small and insignificant this amount of power is in relation to Kentucky Power Company's entire system, especially considering that each of these 46 solar systems are geographically distributed. Given this small number of current distributed solar customers and the fact that the Company is preparing to make going solar even harder, any risk of cross subsidization is likely to be extremely small for the foreseeable future.

In addition, Mr. Vaughan states that the Company intends to further revise its NMS tariff in the event that its AMI meter proposal is approved. This additional revision would be to more accurately measure net energy on an hourly basis. This is yet another reason why the Commission should refrain from approving the Company's proposed NMS tariff changes. The Commission should proceed with a separate docket to study net metering and conduct a full Cost-Benefit Analysis of distributed solar, utilizing its expert hired through the current RFP. Once the Company's AMI proposal is decided and the Commission has charted a course on how to approach net metering after careful and thorough study, the Company can resubmit its proposed NMS tariff changes. Approving the current proposal would be untimely and inappropriate without further information, and would be a waste of the Commission's time given the Company's plans to seek further tariff changes in the short term.

Accordingly, the Commission would be well served to wait until a thorough Cost-Benefit Analysis for solar in Kentucky can be conducted, so that the Commission can apply a consistent approach across all of the state's investor-owned electric utilities.

Demand-Side Management, Energy Efficiency, and On-Bill Finance Tariffs

Q: Can you briefly summarize KPC's proposal regarding its demand-side management (DSM) budget in this case?

A: Yes. KPC is seeking to adjust the tariff and remove all Tariff and DSM revenue and Operations & Management expenses. These net adjustments for the test year ended in March 31, 2020. The net DSM adjustments result in increases of $196,263 in test year revenue and $497,876 in test year expense.

Q: What are the most recent developments prior to this request that reflect on how the KPC provides funding for its DSM programs?

A: KPC currently offers only one DSM program as a result of a Commission-initiated investigation into the reasonableness of the Company's DSM programs in Case No. 2017-00097. In that case, KPC was ordered to eliminate all offerings except for the programs that target income-eligible residential customers, called Targeted Energy Efficiency (TEE) program. KPC was also ordered to eliminate its commercial DSM programs, but allowed KPC to pay the incentives for certain commercial programs that were in process or had been accepted before KPC's programs were suspended.

Q: How are these programs administered?

The TEE program is administered through community action agencies in KPC's service area. It is designed to improve energy efficiency for low-income customers through energy audits coupled with the installation of various energy conservative measures. It is available to customers whose primary heat source is electricity and who use an average of at least 700 kWh per month. Limited energy efficiency measures are available to customers whose primary heat source is not electricity but who have electric water

heaters and use an average of at least 700 kWh of electricity per month from November through March.

Q: What activity has occurred with DSM since that initial investigatory docket?

A: There have been two filings since Case No. 2017-00097, requesting to continue operating the TEE program. In the filing, case no. 2018-0037, KPC requested to continue the TEE program, not proposing any changes and wanted to maintain the current funding level of $284,800 in 2019.

The most recent DSM filing with KPC is Case No. 2019-00410. KPC requested to increase the TEE budget from its current funding level of $284,800 to $326,800 in 2020. The budget was determined with input from agencies administering the program; it would enable community action agencies to serve additional eligible customers.

Due to the over collection of DSM revenues in 2017, KPC residential DSM factor is ($0.000550) per kWh. The over collection has been returned in full to customers. The proposed residential DSM surcharge includes the TEE ongoing program expenses, budget increase, and Net Lost Revenues. As a result, the residential DSM factor is $0.000187 per kWh for 2020, which is a monthly charge of $0.24 for the average residential customer using 1,274 kWh per month.

The Commission approved continuing the TEE Program through December 31, 2020.

Q: What is your general opinion of the budget being proposed by the Company?

A: It is insufficient. DSM programs have the ability to reduce the generation of power as well as provide customers with the tools and resources to minimize their consumption as well as lower their utility bills. This doesn't even factor in non-economic benefits such as the health benefits of providing upgrades to equipment and appliances in a residential

space[30]. Further, if the Commission decides to increase the fixed charge to each customer bill, there should be some ways to allow the customers to have more power to minimize the volumetric charge to their bill by minimizing consumption through demand-side mechanisms. The Company, as well as the regulators who oversee them, should work hard to ensure DSM products and programs are robust and well-administered.

Q: Is it your understanding that previous DSM budgets submitted by the Company were reduced by the Commission?

A: Yes, that is my understanding. I certainly understand the Commission's reluctance to pass on to customers the expenses incurred with implementing DSM programs. Unfortunately, the Commonwealth of Kentucky offers very few mechanisms to incentivize utility companies to see a positive investment from its DSM budgets.

Q: Has the Company recently made public comments regarding energy efficiency?

A: Yes, in KPC's Integrated Resource Plan[31] filed with the Commission on December 20th of 2019, there is discussion on the benefits of energy efficiency. Specifically, Paragraph 3.4.3 of "Energy Efficiency (EE)" that says:

> EE measures reduce bills and save money for customers billed on a per kilowatt-hour usage basis. The trade-off is the up-front investment in a building/appliance/equipment modification, upgrade, or new technology. If consumers conclude that the new technology is a viable substitute and will pay

[30] According to white paper from E4 The Future, Inc. tilted "Occupant Health Benefits of Residential Energy Efficiency (November of 2016), Occupants can experience fewer asthma symptoms and respiratory-related emergency department visits after energy efficiency (EE) and report better physical and mental health after energy efficiency. Programs delivering energy efficiency with added home repairs and client education can produce more significant improvements in asthma symptoms and indoor environmental conditions. Finally, whole-house ventilation strategies using heat or energy recovery ventilators (HRVs or ERVs) can reduce asthma and respiratory symptoms in children with pre-existing risks. Such strategies are increasingly being considered in energy efficiency programs

[31] The public version of the KPC IRP may be found at KPSC Case No. 2019-00443. The particular section on energy efficiency is found at pages 75-76.

them back in the form of reduced bills over an acceptable period, they will adopt it.

EE measures most commonly include efficient lighting, weatherization, efficient pumps and motors, efficient Heating, Ventilation and Air Conditioning (HVAC) infrastructure, and efficient appliances. Often, multiple measures are bundled into a single program that might be offered to either residential or commercial/industrial customers. EE measures will reduce the amount of energy consumed but may have limited effectiveness at the time of peak demand. EE is viewed as a readily deployable, relatively low cost and clean energy resource that provides many benefits.

Q: Does the Company also note drawbacks to energy efficiency measures?

A: Yes. KPC notes market barriers "may exist" and makes a number of suggestions for mitigating those concerns, including:

- Consumer education
- Technical training
- Energy audits
- Rebates and discounts for efficient appliances, equipment and buildings

The Company notes the "level of incentives (rebates or discounts) offered to participants is a major determinant in the pace of EE measure adoption." Which I agree with them must be addressed.

Q: If you believe the Commission is averse to significant increases to its DSM budget, how do you propose to see a strengthening in demand-side efforts?

A: Regulators and utilities must be creative, which is not common among such actors. But, by looking at other approaches, there are ways to benefit the utility as well as its customers while encouraging investment into demand-side mechanisms.

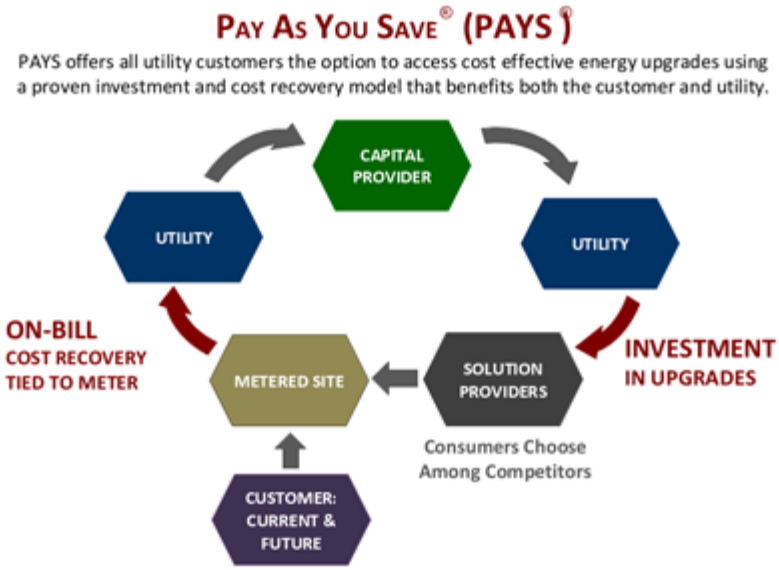
Q: Do you have a proposal in mind?

A: Yes. I would propose an on-bill financing tariff more commonly known as Pay As You Save ®, or PAYS.

Q: What is PAYS®?

A: This is a market-based system that enables utility customers to purchase and install cost-effective energy efficiency upgrades through a voluntary program that assures immediate net savings to customers. The idea behind PAYS® is for energy-saving upgrades to be installed in a customer's home or building, but the utility pays the up-front cost of the installed energy saving measures. To recover its costs, the utility puts a fixed charge on the customer's electric bill that is significantly less than the estimated energy savings from the upgrades. Therefore, the customer sees immediate savings by incurring less expense for energy while paying a fixed charge that is below the total estimated energy savings. Once the utility recovers its costs, the obligation of the customer to pay ends.

I always find illustrative depictions to be helpful. I've included one below in **Graphic JO-6 – How PAYS ® Works:**



Q: How did you become familiar with PAYS®?

A: I originally became familiar with PAYS® from a presentation provided on the program to the Missouri Public Service Commission while I was Public Counsel in 2016. I found the

program could be beneficial to customers as well as to efforts regarding energy efficiency and the reduction of energy generation. The Office of Public Counsel conducted its own research to make sure our understanding of the program was adequate. When I became Executive Director of Renew Missouri, I learned this organization was gearing up its advocacy for the program. Within this organization, I have continued to explore the nuances of this program by meeting with PAYS® program operators across the country to learn about their professional experience with the program.

Q: What are the eligibility requirements for a PAYS® program?

A: The program can be made available to all interested customers who take service under any rate schedule for energy efficiency improvements on a voluntary basis. The program is available to any customer who voluntarily wishes to participate and shall not be a requirement that the structure be all-electric.

Q: Is the PAYS® program only available to property owners?

A: No. The program is available to all customers, but if the customer is not the building owner, the building owner must sign a contract, agreeing to not remove or damage the upgrades, to maintain them, and to provide notice of the benefits and obligations associated with the upgrades at the location to any customer before their rental of the property.

Q: What are the participation requirements for an interested customer?

A: To participate in the program a customer must request an analysis of cost-effective energy efficiency upgrades, agree to the terms of the cost effectiveness analysis fee, and review the Energy Efficiency Upgrade Agreement that defines customers' benefits and obligations.

Q: Who will be doing the energy efficiency upgrade and audit work for customers?

A: An approved energy efficiency contractor including trade allies or a future approved program operator can complete the work for both the energy audit and the energy efficiency upgrades. The contractor will perform a cost-effectiveness analysis and prepare an Energy Efficiency Plan identifying recommended upgrades to make energy savings improvements. The utility may operate the program directly with its own staff resources or hire an experienced program operator to implement the program. When a customer wants to proceed with implementing the Energy Efficiency Plan, the utility staff or program operator determines the appropriate monthly Service Charge.

Q: What energy savings can be expected for the customer?

A: The participating customer can expect to see the estimated energy savings due to the quality assurance requirement of the program. If the work has not been adequately completed, the contractor will not be compensated for their work until the issues have been rectified. The contractor is paid by the utility after the energy efficiency upgrades have been completed and following on-site or telephone inspection and approval of the installation by the utility or its program operator.

Q: How will the PAYS® Services Charge be assessed for participating customers?

A: The utility will recover the costs for its investments including any fees as allowed in the PAYS® tariff through monthly Service Charges assigned to the location where upgrades are installed. Customers occupying that location will continue the payments until all utility costs have been recovered. The Service Charges will be set for a duration not to the exceed 80% of estimated life of the upgrades or the length of a full parts and labor warranty, whichever is greater and in no case longer than twelve years. The Service Charges and

duration of payments will be established and included in the Efficiency Upgrade Agreement.

Q: When will a participating customer receive their first PAYS® Services Charge after completion of the work?

A: The customer shall be billed the monthly Service Charge as determined by the utility no sooner than 45 days after approval by the utility or its program operator. The utility will bill and collect Service Charges until cost recovery is complete except in case of a needed repair at no fault of the program participant. Prepayment of unbilled charges will not be permitted to facilitate installed upgrades remaining and continuing to function at the location for at least the duration of utility cost recovery.

Q: Which energy efficiency upgrades are eligible under this program?

A: All upgrades must have Energy Star certification or must be a Commission approved energy efficiency measure. Based on the types of projects that have been completed in Kentucky through the How$martKY program with Rural Electric Cooperatives across the state, at a minimum an on-bill tariff program should have the following EE measures available. These measures should include, but not be limited to, attic insulation, floor insulation, reduce duct/air leakage, HVAC, LED lighting, water heating, and heat pumps. The utility may seek to negotiate with contractors or upgrade suppliers extended warranties to minimize the risk of upgrade failure on behalf of all participating customers and prices (e.g., per square foot in the case of insulation) to assure the lowest possible cost for all projects.

Q: Is there a savings requirement for customers that participate in a PAYS® program?

A: Yes. To ensure that participants benefit from the program, the recommended upgrades shall

be limited to those where the annual Program Service Charges, including program fees and the company's cost of capital are no greater than 80% of the estimated annual benefit from reduction to the participating customers' annual utility charges based on current rates in electricity costs. This requirement reasonably assures customers participating in the program that they will receive a minimum reduction of 20% in their annual utility charges. To get a better sense of how this could look for customers in Kentucky, the How$martKY program has an average monthly projected savings of $51.98 and an average monthly charge is $39.98.

Q: How will a PAYS® program interact with currently available energy efficiency rebate programs?

A: Offering customers the option to participate in a PAYS® program will complement the currently available Targeted Energy Efficiency Program and would enable more robust and diverse customer participation. The Targeted EE program for residential customers provides weatherization and energy efficiency services, if customers meet the income-eligible guidelines that are designated by poverty guidelines administered through the Kentucky Community Action network through local community action agencies. The PAYS® program has very similar measures available, but instead of being paid for through LIHEAP or utility dollars, the upgrades are paid for by the participating customer. These programs could even be coupled for low-income qualifying customers and would allow for these customers to finance additional upgrades by allowing them a co-pay option for any upgrades that would not be cost-effective under the Targeted EE Program. The PAYS® program would work well with this existing program and would provide energy efficiency savings opportunities to all residential customers, regardless of their income. Additionally,

the Commission could establish a multi-stakeholder process to support program design of any financing offering for low-income renters that are eligible for both the Targeted EE Program and the PAYS® program.

Q: Will PAYS® offer a co-pay option?

A: Yes. The co-pay is used to pay for measures that do not pass as cost-effective after the analysis or audit has been completed. This would be a key condition to include in any PAYS® or similar on-bill tariff financing program to allow customers the ability to finance additional efficiency measures that are not cost-effective or have lower savings potential.

Q: How will the utility be made whole in the event of an uncollectable service charge?

A: Since the PAYS® program is tied to the metered location, the person responsible for paying the bill at that location will be subject to the Service Charge until it is fully recovered. In the event that the participant moves from the location, the next property owner or occupant will resume payment of the PAYS® Service Charge on his or her utility bill. Under this model, there is little room for an uncollectable account, but one could still arise if there is a natural disaster or the location is abandoned. In the event there is such a disaster, the utility can establish a loss reserve fund and I am aware of experienced program operators that have established this type of a fund for the utility. The only other example of uncollectable would be in the case that an upgrade fails and cannot be repaired or replaced cost-effectively through no fault of the customer, which would require the utility to waive all remaining charges. You can read more details on how repairs are handled under PAYS® in Section 8 of the PAYS Exemplar Tariff attached as **Schedule JO-2**. Additionally, we do not foresee an event of an uncollectable service charge outside of abandonment or a natural disaster, due to the success of the How$martKY program in the state. There has not been

an issue in Kentucky for the How$martKY program which has been operating in the state since 2011 through six rural electric cooperatives offered through the Mountain Association as the program operator[32]. As of last June, the program had assessed 607 buildings, offered upgrades to 405 member-owners, and facilitated 320 energy efficiency retrofits. There have been zero disconnections for non-payment in Kentucky.

Q: How will maintenance of PAYS® energy efficiency upgrades be accounted for?

A: Participating customers and building owners (if the customer is not the building owner) must agree, when signing the Efficiency Upgrade Agreement or the Owner Agreement, to keep the upgrades in place for the duration of Service Charges, to maintain the upgrades per manufacturers' instructions, and report the failure of any upgrades to the Program Operator or utility as soon as possible. If the upgrade fails, the utility is responsible for determining its cause and for repairing the equipment in a timely manner as long as the owner, customer, or occupants did not damage the upgrades, in which case they will reimburse the utility.

Q: How will energy audits be paid for as part of the PAYS® program requirement for a cost-effectiveness analysis?

A: The cost of the energy audit will be included in the PAYS® tariff fee on the participating customer's utility bill. This cost can vary depending on the building type. Homeowners can expect an energy audit cost of $300-$800 according to RESNET.[33] Additionally, the energy audit is valued at $300 by Ouachita Electric's HELP PAYS® program.[34] The cost for an

[32] It is imperative to note I am not suggesting Mountain Association, one of the organizations for which I am providing testimony, serve as the administrator of this program. Utilities should consider managing the program internally or contracting with third-party administrators as part of a robust bidding process.

[33] https://www.resnet.us/home-energy-audits-faqs

[34] https://www.oecc.com/help

energy audit or energy assessment in a multifamily housing property has a larger range of $1,000-$4,000. This range is dependent on the American Society of Heating, Refrigerating and Air-Conditioning Engineers ("ASHRAE") level of the completed assessment. While the level of detail in the energy assessment contributes to the cost, the other important factor is the size of the property including the number of units. The cost of this audit would also be included in the PAYS® Service Charges paid by the participating customer. If the customer chooses not to sign an Efficiency Upgrade Agreement to roll the energy audit cost into the Service Charges, charges for the cost of the audit will appear on the next monthly bill.

Q: When the utility's investment is fully paid off, how will the Service Charge be terminated?

A: Once the utility's costs for upgrades at a location have been recovered including: its cost of capital, the cost paid to the contractor to perform the work, and costs for any repairs made to the upgrades, the monthly Service Charge will no longer be billed. Additionally, after completion of payment of the Service Charges the ownership of the installed upgrades will be transferred to the property owner.

Q: Has PAYS® been implemented in other states?

A: Utility regulators in Arkansas, Kansas, Missouri, and more have already approved opt-in tariffs for building efficiency upgrades. Although only a few leading utilities in each of those states are taking advantage of the opportunity thus far, all of them are using the same system for their program design, called Pay As You Save®. PAYS® offers all customers the option to access cost-effective energy upgrades using a proven investment and cost recovery model that benefits a participating utility. Opt-in on-bill financing tariff programs

have also been ordered at public service commissions in California (specific to water measures), Hawaii, and Michigan.

Q: Can PAYS® be considered a "demand-side program"?

A: Yes. Kentucky law describes "demand side management as "any conservation, load management, or other utility activity intended to influence the level or pattern of customer usage or demand, including home energy assistance programs."[35] PAYS ® would fit under that definition. Why PAYS® is important is due to the fact that it can specifically target residential customers and renters who cannot afford those energy efficiency programs or do not qualify for demand-side programs usually reserved for low-income residents or large-scale customers. PAYS®, as considered as a part of these other programs already being offered by the Company, allows for a demand-side portfolio that indeed provides benefits for all customers of all classes. Adding a PAYS ® program is a way for KPC to encourage energy efficiency as it stated a desire to do in its IRP plan.

Q: How so?

A: On Page 9 of their executive summary, KPC notes their intentions to pursue certain energy efficiency programs over the course of the three-year IPR plan. To-wit, they write of their intention to:

"3. Further examine opportunities to increase cost effective levels of (energy efficiency) in alignment with the Preferred Plan." It is my belief that exploring a PAYS® program would fit incredibly well with the plan the Company has already developed.

[35] KRS 278.010(17)

Q: What is your recommendation to the Commission?

A: The Commission should require KPC through an order to develop a tariff to facilitate a PAYS® program or similar tariff on-bill financing program for their customers. This program should be available specifically for customers without access to credit, renters, rental property owners, and small businesses. It is my assertion that PAYS®, if developed properly with proper marketing efforts, will greatly enhance participation in energy efficiency efforts, provide greater earnings opportunities.

AMI meters

Q: What is Advanced Metering Infrastructure ("AMI")?

A: AMI is an integrated system of smart meters, communication networks, and data management systems that enables two-way communication between utilities and customers. The system provides a number of functions that were not previously possible or that had to be performed manually, functions such as the ability to automatically and remotely measure electricity use, connect and disconnect service, detect tampering, identify and isolate outages, and monitor voltage. Combined with smart appliances, such as programmable thermostats or water heaters, AMI also enables utilities to offer new time-based rate programs that encourage customers to reduce peak demand and manage energy consumption. In theory, AMI should reduce costs for metering and billing, and lower utility capital expenditures and outage costs.

Q: What does the company propose in this case related to AMI meters?

A: KPC proposes to transition all of its customers to AMI meters beginning in 2021 and ending 2024, with an approximate total cost of $36,960,260. As described in the testimony

of Company witness Blankenship, this figure would include capital plant (the meters themselves), Capital IT, and operations and maintenance expenses.

Q: Is the company's proposal to begin deploying AMI meters reasonable?

A: In part. Witness Blankenship – in pages 14-15 of his testimony - accurately lay out that AMI meters are becoming the industry standard for electric utilities and have the potential to offer customers benefits including improving system reliability, decreasing O&M costs, increasing usage information, facilitating energy efficiency programs, and can support distributed energy resources. These benefits are laudable goals but they will not be achieved without detailed plans and appropriate programs offered by the utility.

The Company also asserts that its current AMR meters are nearing the end of their useful lives and the software is no longer supported by manufacturers. Simply replacing the AMR meters upon failure with similar AMR meters would cost less than installing AMI meters, but the customers would lose out on the potential benefits enabled by the more expensive AMI meters.

Q: If the Commission approves AMI deployment, how would you recommend the Commission ensure that customers will experience the benefits?

A: The Commission should require the company to offer programs and rate designs aimed at accomplishing the goals the company itself outlines as benefits for deploying AMI meters. This includes (1) supporting distributed energy resources through appropriate net metering tariffs, (2) developing a plan to offer energy efficiency programs, and (3) eliminating connection and reconnection fees and (4) rejecting the GMR cost recovery mechanism.

These protections are important to establish at the outset because installing new AMI meters will be a significant capital expenditure that does not necessarily offer benefits

to customers until full deployment. For example, in response to a data request, KPC acknowledges that it "anticipates that operational benefits, to the extent they can be accurately quantified *once full AMI deployment has been completed*, will be flowed back to customers over time as they are reflected in the Cost of Service in future base rate cases," according to KPC's Response to the Kentucky Attorney's General's data request. Deployment, if approved, is expected to be completed at the end of 2024. (See KPC Response to Attorney General Data Request #116). This delay leads to a timing lag between when the customer pays increased rates and when, if ever, the customer sees the benefit. Beyond the normal lag, if the company's preferred cost recovery mechanism is approved in this case, customers will be paying for these meters without the close scrutiny given in rate cases on increased intervals. On top of that, during this deployment period customers will have to bear the increased costs for operating <u>two</u> metering systems in parallel for years until all customers have been transitioned to AMI, according to KPC's response to the Kentucky Attorney General Data Request #90. The incremental O&M costs alone for operating the two metering systems were provided in response to a data request and are detailed below found in Attachment 1 of KPC response to the Kentucky Attorney General's Data Request #90:

Software	
SaaS Ongoing Fee Year @172,233	$228,889.90
Test Environment	$28,750.00
Dev Environment	$28,750.00
EasyLink Annual Maintenance & Support	$21,120.00
Communication Equipment (Aps, Towers)	
Cellular Cost	$128,772.00
IT Work	
IT Support	$100,000.00
Additional FTE's	
MRO - 2 FTE	$200,000.00
AMI Office Support	$200,000.00

The combination of those delays in experiencing the benefits with the immediate increased costs is difficult for customers to handle in normal circumstances. On top of the normal difficulties in transitioning to an AMI system, the current economic circumstances and public health crisis will make this a more difficult process. The Commission should take care to ensure that KPC is undertaking this AMI meter project with its customers in mind and a plan to deliver benefits as soon as possible.

Q: You mention this delay between when benefits are realized and when the costs have been charged, why do you believe this is a concern?

A: One of my first regulatory experiences with AMI meters was in Missouri when Kansas City Power & Light (now named "Evergy") moved forward with its own plan to install the meters system-wide. The company began installing the AMI meters in 2014, raising many of the same points that K PC has done in this case. For example, Evergy communicated with customers that the old meters were reaching obsolesce and unsupported and the technology of the AMI meters would enable customers to have lower costs and additional programs. Eventually all meters were installed (or perhaps "replaced" is a better term) and placed into rates. Many stakeholders expressed support for the AMI meters on the basis of the new program offerings that were promised to justify the costs. Six years later - in October of 2020 – the company is still in the early phases of rolling out its AMI enabled rate designs and programs to customers. For example, approximately 4,000 customers are now enrolled under TOU rates (out of over 600,000 in the Missouri service areas). If KPC follows a similar timeline, customers will not be able to take advantage of the meter investment.

Q: How does the Company intend to charge these AMI capital and operational costs to customers?

A: Through a new Grid Modernization Rider ("GMR") that the company proposes in this case. Basically, according to Company witness Vaughn's testimony (page 32), this mechanism would allow the company to recover the costs of AMI deployment outside of rate cases as these meters are placed in service. This includes the Company's estimates for a return on invested capital (net of accumulated depreciation and ADFIT), depreciation expense, O&M expense, and incremental property tax expense as testified by Company witness Vaughn on page 39 of his testimony. In testimony, the company has estimated that the year 1 revenue requirement for the AMI meters through the GMR would be $1,105,046, or an increase of 31 cents per month for a residential customer.[36] However, by program year 5 (2025) the GMR revenue requirement associated with AMI meters grows to $6,192,178.[37] As a broad example, using the allocator and number of bills the same, the year 5 impact is approximately $1.73 per bill for RS customers.

Q: You've talked about some of the costs, can you give a bit more detail about any reduced costs to customers from the new meters the company has identified?

A: As I mentioned, many of these cost savings cannot be realized until the system is fully deployed at the end of 2024. The Company estimates, in response to the Kentucky Attorney General's Data Request #91, that yearly savings to the various meter accounts would be $623,200 once the four-year AMI deployment is completed and fully implemented. These estimated savings are based on reducing five internal positions, two

[36] Vaughan Exhibit AEV 8, p. 3.
[37] Vaughan Exhibit AEV 8, p. 1.

external positions, seven vehicles, and fifteen mobile data collector and twelve handheld collectors. That yearly reduction in costs is much smaller than the increase that AMI implementation will cause.

Q: Has the Company performed a cost-benefit analysis for the AMI system deployment?

A: No, and the KPC has stated it does not intend to perform such a cost study in its response to the Kentucky Attorney General for Data Requests 89 and 91. In response to data requests the company offers that "limitations associated with unverifiable assumptions and the challenges of assigning a quantitative value to unquantifiable benefits" makes performing a study impractical. Instead of providing a normal cost-benefit analysis to support the transition, the company relies on benefits that are not easily quantifiable, such as marginal improvements in reliability and more up-to-date usage communication with customers.

Q: What are some of those other benefits?

A: As I mentioned above, Company witness Blankenship, in page 14 and 15 of his testimony, explains that AMI meters have the potential to offer customers benefits including improving system reliability, increasing usage information and communication with customers, facilitating energy efficiency programs, and supporting distributed energy resources.

Q: Does the KPC have a long-term plan to develop rate offerings that will offer customers choice and savings through the increased information and communication?

A: No, it does not appear to have a complete plan. While Company witness Blankenship proposes to incorporate a pre-pay program in pages 14 and 15 of his testimony, the Commission should require KPC to present a plan to utilize the full capabilities for these

expensive new AMI meters. In response to the question "[i]n the event the Commission approves KPC's CPCN application, explain whether the Company will propose: (i) a Peak Time Rebate program; and (ii) any new Demand Side Management (DSM) and/or Demand Response (DR) programs, and if so, provide as much detail as possible regarding each such program," the company responded it "*has not determined what future tariff or customer program offerings it may propose in future proceedings*." (Editor emphasis.) These are the kind of programs that could incentivize customers to reduce the system peak and save money, and the company should be discussing with regulatory stakeholders how to move towards using the AMI meters with rate designs that will justify the cost. The company's lack of planning to design and implement program and rate offerings that will give customers the opportunity to choose to save money and energy is troubling. The Commission should not approve any AMI deployment without requiring the company to put forward detailed plans on future rate designs that will enable customers to modify their behavior to reduce their bills and lower their energy consumption.

Q: Does the Company have a long-term plan to use the AMI meters to facilitate energy efficiency programs?

A: In part, but I don't believe the plan is adequate. Company witness Wiseman, on page 9 of his testimony, says it intends to deploy a Home Energy Management system (referred to as the Customer Engagement Platform). In a data request response, the Customer Engagement Platform is described as a tool that provides residential customers with energy usage data and cost information during the billing period that they do not have access to today.[38] The efficiency benefit of this is that the Customer Engagement Platform will allow

[38] All references to the Customer Engagement Plan can be found in Kentucky Power Response to JI_1_048.

residential customers to download energy usage information into an Excel format that is easily transferrable by the customers to third parties assisting the customer to manage the customer's energy usage. It is unclear to me that this passive approach will have the effect of increasing energy savings or customers taking control of their bills by adjusting usage. In effect, the Company is relying on the customer to find a 3rd party to help translate this data into a plan to save energy. This is consistent with the company's recent approach to energy efficiency. The Company currently only offers its Targeted Energy Efficiency ("TEE") program, which is a weatherization program for low-income customers administered by the Community Action Agencies in the Company's service territory. This "hands-off" approach has been the case since Case No. 2017-00097, when all energy efficiency programs, except for the TEE program, were terminated. According to the company, this termination of efficiency programs was driven by the Company's "significant excess capacity position" and "lack of an immediate and near term need for capacity and energy."

In order to justify the cost of AMI deployment, the Company says it is relying on facilitating energy efficiency and so it should be required to take a more active approach to encouraging efficiency. I understand the argument that being long on capacity is used to oppose utility sponsored efficiency programs because without avoiding enough costs, it is only the direct program participants who likely benefit. However, terminating the programs is not the approach I would recommend, and given this current case seeking AMI approval, the company should reconsider implementing its efficiency programs to increase the value of AMI meters.

First, utility-sponsored energy efficiency programs are often cumulative. The energy and demand savings from one year often will have an impact on subsequent years and a level of continuity is required to defer major investments. Just like AMI meters themselves, efficiency programs are a long-term benefit proposition. When you do need them it's more difficult to start "flat-footed" than to either ramp-up or continue a program. Second, if the efficiency programs benefit direct participants the most, then the goal should be to increase customer participation. I have made this argument in Missouri in several recent cases, by advocating for a complimentary Pay-As-You-Save® program. I detail PAYS® in another section of my testimony, but essentially customers can save money and be more efficient while ultimately paying for the investment themselves.

If the Commission is going to approve the AMI deployment on the basis that the meters facilitate energy efficiency, it should require the KPC to develop and implement a PAYS® program that will enable customers to reduce their bill and lower their energy consumption without requiring contributions to program costs from other customers. I have spoken previously in my testimony to the benefit of PAYS® and I believe such a program would benefit customers with AMI.

Q: Does the Company have a long-term plan to use the AMI meters to support distributed energy resources, such as solar?

A: No. Company witness Blankenship asserts on page 15 of his testimony that "AMI technology can also support distributed energy resources, such as wind, solar, microgrids, and battery storage, by providing real-time, bi-directional measurements of the energy metrics required to support these resources." It's hard to see this general statement as a genuine commitment to supporting DER development when the company is

simultaneously proposing a new restrictive tariff that is sure to discourage solar development and additional DERs on its system. I discuss additional reasons to reject the new NMS II tariff elsewhere in this testimony. Ultimately, if the Commission is going to approve AMI deployment on the basis that it will facilitate DER development, it should reject the proposed NMS II tariff. Furthermore, the Commission should require the Company to report the changes in DER development and distribution that can be attributed to AMI meters on an annual basis.

Q: You have discussed the relationship in the timing between when the customers pay increased costs and when customers can expect to see benefits from the new AMI meters. How does this impact whether the Commission should approve the proposed Grid Modernization Rider ("GMR")?

A: The Commission should reject the Grid Modernization Rider. KPC acknowledges that the benefits to customers will not accrue until the AMI meters are fully deployed. Additionally, as I described above, the benefits are speculative and unlikely to happen naturally – the company needs to take affirmative steps to develop DER, facilitate energy efficiency, and reduce costs. In the interim years, customers would be paying for parallel meter hardware and software. By allowing recovery through the GMR, rather than after a rate case when the meters are in-service and without the additional requirements I outlined above, the customers pay now for benefits that may or may not materialize later. Although there may be other ways, one important way to help customers realize the benefits sooner is to discontinue all connection and reconnection fees for AMI meters. These fees will no longer be necessary with AMI meters because it will be able to connect and reconnect customers remotely without sending an employee and truck to turn on service. Company witness

Blankenship says it "does not plan at this time to charge a fee to reconnect AMI meters" in page 15 of his testimony. This is appropriate but should be made permanent and extended to all fees previously charged to customers for services that can be done remotely with AMI technology.

Q: What is your conclusion and recommendation regarding Kentucky Power's proposed AMI meter deployment?

A: AMI metering is a technology that enables a utility to improve its service offerings to customers potentially for many years. However, the company has not performed a cost-benefit analysis of AMI deployment to quantify and measure whether the investment will be beneficial for customers. Instead, the utility relies on unquantified benefits that are far from certain to happen. In order to guard against the risk that these benefits do not materialize the Commission should not approve the AMI meter deployment unless:

- The Company puts forward detailed plans on future rate designs that will enable customers to modify their behavior to reduce their bill and lower their energy consumption;
- KPC develops and implement a PAYS® energy efficiency program that will enable customers to reduce their bill and lower their energy consumption without requiring contributions to program costs from other customers;
- KPC withdraws the proposed NMS II tariff and agrees to report the changes in DER development and distribution that can be attributed to AMI meters on an annual basis; and
- discontinue all connection and reconnection fees for AMI meters.

With the conditions I've described above the Commission should permit KPC to pursue its plan to deploy AMI meters. Absent these conditions, customers will pay millions of dollars with a peak of $6,192,178 in year 5 compared to an annual reduction in meter costs of $623,200. In such a scenario, AMI meters should be rejected. If AMI technology is to become the industry standard for KPC, it should adopt these recommendations to ensure the best outcome for its customers.

Q: Does this conclude your testimony?

A: Yes.

KENTUCKY POWER COMPANY

P.S.C. KY. No. _____ _____ Original Sheet No. _____

Cancelling P.S.C. KY. No. _____ _____ Sheet No. _____

PAY AS YOU SAVE® ON-BILL PROGRAM

(PAYS®)

1 **Eligibility:** Eligible on an optional and voluntary basis to any customer who takes service under any rate schedule for energy efficiency improvements (upgrades) where the utility provides electric service to the structure. It shall not be a requirement that the structure be all-electric.

2 **Participation:** To participate in the Program, a customer must: 1) request from the utility an analysis of cost-effective upgrades, 2) agree to the terms of the cost-effectiveness analysis fee as described in Section 3.4, and 3) sign the Efficiency Upgrade Agreement that defines customer benefits and obligations, and implement any project that does not require an upfront payment from the customer as described in Section 3.3.

2.1 **Ownership**: If the customer is not the building owner, the building owner must sign an Owner Agreement, agreeing to not remove or damage the upgrades, to maintain them, and to provide notice of the benefits and obligations associated with the upgrades at the location to any customer before their rental of the property.

2.2 **Notice**: The owner of the location must agree in writing as part of the Efficiency Upgrade Agreement (if the Owner is the customer) or Owners Agreement that they agree to a Notice of the tariffed benefits and obligations attached to their property records. Failure to obtain the signature of a successor customer who is renting the premises on Notice form or a purchaser in jurisdictions in which the customer or utility is not permitted attach the Notice to the property records, indicating that the successor customer received notice will constitute the owner's acceptance of consequential damages and permission for a tenant or purchaser to break their lease or sales agreement without penalty.

3 **Energy Efficiency Plans:** The utility will have its Program Operator or approved energy efficiency contractor perform a cost-effectiveness analysis and prepare an Energy Efficiency Plan (Plan) identifying recommended upgrades to improve energy efficiency and lower power costs, including those that require no customer copayment.

3.1 **Incentive Payment:** The utility may reduce the upgrade cost with an incentive payment for program participation that is less than or equal to the value of the upgrades to the utility.

Date of Issue: _____ Date Effective: _____

Issued By: _____ Title: _____

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3.2 **Net Savings:** Recommended upgrades shall be limited to those where the annual Program Service Charges (Service Charges), including program fees and the utility's cost for capital, are no greater than 80% of the estimated annual benefit from reduction to customers' annual utility charges based on current rates in electricity and/or gas costs.

3.3 **Copay Option:** In order to qualify a project that is not cost effective for the Program, customers may agree to pay the portion of a project's cost that prevents it from qualifying for the Program as an upfront payment to the contractor. The utility will assume no responsibility for such upfront payments to the contractor.

3.4 **Cost Effectiveness Analysis Fee**: If the cost of the cost-effectiveness analysis exceeds the value to the utility of upgrades accepted by customers for installation based on the Utility Cost test, the utility will recover from participants the portion of the cost for the analysis that is greater than the value of the upgrades to the utility. The utility will not recover costs for the analysis if the Energy Efficiency Plan concludes that proposed upgrades are cost effective only with a copay. The utility will recover all of its costs for the analysis at a location from a customer who declines to install upgrades identified in an Energy Efficiency Plan that do not require a copayment. Customer costs for analyses, if any, will be recovered from participants by rolling them into Service Charges as described in Section 7, unless the customer does not sign an Efficiency Upgrade Agreement in which case the charges will appear on the next monthly bill.

3.5 **Existing Buildings:** Projects that address upgrades to existing buildings deemed unlikely to be habitable or to serve their intended purpose for the duration of utility cost recovery will not be approved unless other funding can effect necessary repairs. If a building is a manufactured home, to be eligible it must be built on a permanent foundation and fabricated after 1982.

4 **Approved Program Operator:** Utility may operate the program directly with its own staff resources or hire an experienced program operator to implement the program.

5 **Approved Contractor**: Should the customer determine to proceed with implementing The Plan, the utility or its program operator shall determine the appropriate monthly Service Charge as described below. The customer shall sign the Agreement and select a contractor from the utility's list of approved contractors.

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6 **Quality Assurance:** When the energy efficiency upgrades are completed, the contractor shall be paid by the utility, following on-site or telephone inspection and approval of the installation by the utility or its program operator.

7 **Program Services Charge:** The utility will recover the costs for its investments including any fees as allowed in this tariff through monthly Service Charges assigned to the location where upgrades are installed to be paid by customers occupying that location until all utility costs have been recovered. Service Charges will be set for a duration not to the exceed 80% of estimated life of the upgrades or the length of a full parts and labor warranty, whichever is greater and in no case longer than twelve years. The Service Charges and duration of payments will be included in the Efficiency Upgrade Agreement.

7.1 **Cost Recovery:** No sooner than 45 days after approval by the utility or its program operator, the customer shall be billed the monthly Service Charge as determined by the utility. The utility will bill and collect Service Charges until cost recovery is complete except in cases discussed in Section 8. Prepayment of unbilled charges will not be permitted to facilitate installed upgrades remaining and continuing to function at the location for at least the duration of cost recovery.

7.2 **Eligible Upgrades**: All upgrades must have Energy Star certification, if applicable or must be a commission approved energy efficiency incentive program. The utility may seek to negotiate with contractors or upgrade suppliers extended warranties to minimize the risk of upgrade failure on behalf of all customers and prices (e.g., per square foot) to assure the lowest possible cost for all projects.

7.3 **Ownership of Upgrades:** During the duration that Services Charges are billed to customers at locations where upgrades have been installed, the utility will retain ownership of the upgrades. At the termination of Services Charges, ownership will be transferred to the building owner.

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7.4 **Maintenance of Upgrades**: Participating customers and building owners (if the customer is not the building owner) must agree, when signing the Efficiency Upgrade Agreement or the Owner Agreement, to keep the upgrades in place for the duration of Service Charges, to maintain the upgrades per manufacturers' instructions, and report the failure of any upgrades to the Program Operator or utility as soon as possible. If the upgrade fails, the utility is responsible for determining its cause and for repairing the equipment in a timely manner as long as the owner, customer or occupants did not damage the upgrades, in which case they will reimburse the Utility as described in Section 8.

7.5 **Termination of Service Charge:** Once the utility's costs for upgrades at a location have been recovered, including its cost of capital, the cost paid to the contractor to perform the work, costs for any repairs made to the upgrades as described in Section 8 the monthly Service Charge shall no longer be billed, except as described in Sections 7.7 and 8.

7.6 **Vacancy**: If a location at which upgrades have been installed becomes vacant for any reason and electric service is disconnected, Service Charges will be suspended until a successor customer takes occupancy. If a building owner maintains electric service at the location, the building owner will be billed Service Charges as part of any charges it incurs while electric service is turned on.

7.7 **Extension of Program Charge:** If the monthly Service Charge is reduced or suspended for any reason, once repairs have been successfully effected or service reconnected, the number of total monthly payments shall be extended until the Service Charges collected equal the utility's cost for installation as described in Section 7, including costs associated with repairs, deferred payments, and missed payments as long as the current occupant is still benefitting from the upgrades.

7.8 **Tied to the Location:** Until cost recovery for upgrades at a location is complete or the upgrades fail as described in Section 8, the terms of this tariff shall be binding on the metered structure and any future customer who shall receive service at that location.

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7.9 **Disconnection for Non-Payment:** Without regard to any other Commission or utility rules or policies, the Service Charges shall be considered as an essential part of the customer's bill for electric service, and the utility may disconnect the metered structure for non-payment of Service Charges under the same provisions as for any other electric service. If service is disconnected for customers on pre-paid payment plans, Service Charges will be pro-rated by the day.

8 **Repairs:** Should, at any future time during the billing of Service Charges, the utility determine that the installed Upgrades are no longer functioning as intended and that the occupant, or building owner if different, did not damage or fail to maintain the upgrades in place, the utility shall suspend the Service Charges for any failed upgrade until such time as the utility and/or its contractor can repair the upgrade. If the upgrade cannot be repaired or replaced cost effectively, the utility will waive remaining charges.

If the utility determines the occupant, or building owner if different, did damage or fail to maintain the upgrades in place as described in Section 7.4, it will seek to recover all costs associated with the installation, including any fees, incentives paid to lower project costs, and legal fees.

The Service Charges will continue until utility cost recovery is complete.

PRIOR CASE PARTICIPATION OF JAMES OWEN

Date	**Proceeding**	**Docket No.**	**On Behalf of:**	**Issues**
10/20/2017	In the Matter of a Working Case to Explore Emerging Issues in Utility Regulation	EW-2017-0245	Renew Missouri Advocates	**Comments:** Distributed Energy Resources
2/7/2018	In the Matter of the Application of The Empire District Electric Company for Approval of Its Customer Savings Plan	EO-2018-0092	Renew Missouri Advocates	**Rebuttal**: Customer savings plan, wind generation, Asbury retirement, federal tax changes
Rebuttal 7/27/2018 Surrebuttal (9/4/2018)	In the Matter of KCP&L Greater Missouri Operations Company's Request for Authority to Implement a General Rate Increase for Electric Service In the Matter of Kansas City Power & Light Company's Request for Authority to Implement a General Rate Increase for Electric Service	ER-2018-0145/ER-2018-0146	Renew Missouri Advocates	**Rebuttal:** Demand Response Program **Surrebuttal:** Demand Response Program
6/8/2018	In the Matter of the Application of Union Electric Company d/b/a Ameren Missouri for Approval of 2017 Green Tariff	ET-2018-0063	Renew Missouri Advocates	**Surrebuttal:** Eligibility parameters, wind generation
9/17/2018	In the Matter of Union Electric Company d/b/a Ameren Missouri's 3rd Filing to Implement	EO-2018-0211	Renew Missouri Advocates	**Surrebuttal:** Statutory Requirements of MEEIA

	Regulatory Changes in Furtherance of Energy Efficiency as Allowed by MEEIA			
9/28/2018	In the Matter of the Application of Union Electric Company d/b/a Ameren Missouri for Permission and Approval and a Certificate of Public Convenience and Necessity Authorizing it to Construct a Wind Generation Facility	EA-2018-0202	Renew Missouri Advocates	**Surrebuttal:** Second Non-unanimous Stipulation and Agreement; Need for the project; Conservation conditions
11/16/2018	In the Matter of the Application of Union Electric Company d/b/a Ameren Missouri for Approval of Efficient Electrification Program	ET-2018-0132	Renew Missouri Advocates	**Surrebuttal:** Charge Ahead Programs
1/15/2019	In the Matter of a Workshop Docket to Explore the Ratemaking Process	AW-2019-0127	Renew Missouri Advocates	**Comments:** Ratemaking Process
1/22/2019	In the Matter of the Application of Union Electric Company d/b/a Ameren Missouri for Permission and Approval and a Certificate of Convenience and Necessity Authorizing it to Construct a Wind Generation Facility	EA-2019-0021	Renew Missouri Advocates	**Surrebuttal:** Conservation conditions; Tax revenue; Benefits of wind generation

1/28/2019 9/16/2019	In the Matter of Kansas City Power & Light Company's Notice of Intent to File an Application for Authority to Establish a Demand-Side Programs Investment Mechanism	EO-2019-0132	Renew Missouri Advocates	**Rebuttal:** PAYS Program **Surrebuttal:** Energy Efficiency Policy; Additional programs
3/5/2019	In the Matter of the Application of The Empire District Electric Company for Certificates of Convenience and Necessity Related to Wind Generation Facilities	EA-2019-0010	Renew Missouri Advocates	**Surrebuttal:** Benefits of wind generation; Conservation conditions; OPC's CCN standard
3/27/2019	In the Matter of the Joint Application of Invenergy Transmission LLC, Invenergy Investment Company LLC, Grain Belt Express Clean Line LLC and Grain Belt Express Holding LLC for an Order Approving the Acquisition by Invenergy Transmission LLC of Grain Belt Express Clean Line LLC	EM-2019-0150	Renew Missouri Advocates	**Rebuttal:** Commission standard; Benefits of transaction

7/15/2019	In the Matter of the Application of Union Electric Company d/b/a Ameren Missouri for Permission and Approval and a Certificate of Public Convenience and Necessity Under 4 CSR 240-3.105	EA-2019-0181	Renew Missouri Advocates	**Rebuttal:** Benefits of wind generation

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

ELECTRONIC APPLICATION OF KENTUCKY POWER COMPANY FOR (1) A GENERAL ADJUSTMENT OF ITS RATES FOR ELECTRIC SERVICE; (2) APPROVAL OF TARIFFS AND RIDERS; (3) APPROVAL OF ACCOUNTING PRACTICES TO ESTABLISH REGULATORY ASSETS AND LIABILITIES; (4) APPROVAL OF A CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY; AND (5) ALL OTHER REQUIRED APPROVALS AND RELIEF	)	CASE NO. 2020-00174

AFFIDAVIT

I hereby affirm that my prefiled direct testimony in the matter of *Electronic Application Of Kentucky Power Company For (1) A General Adjustment Of Its Rates For Electric Service; (2) Approval of Tariffs And Riders; (3) Approval Of Accounting Practices To Establish Regulatory Assets And Liabilities; (4) Approval of A Certificate Of Public Convenience And Necessity; And (5) All Other Required Approvals And Relief,*
is true and accurate to the best of my information and belief.

James Owen

Subscribed and sworn to before me, a notary public in the County of Boone, by James Owen, this 07 day of October, 2020.

LUCAS WILLIAMSON
Notary Public - Notary Seal
STATE OF MISSOURI
County of Boone
My Commission Expires 9/9/2022
Commission # 18646620

Notary Public

My commission expires 09/09/2022