**BEFORE THE PUBLIC SERVICE COMMISSION**
**OF THE COMMONWEALTH OF KENTUCKY**

| | |
|---|---|
| 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 |

# Rebuttal Testimony of Benjamin D. Inskeep

On Behalf of Kentucky Solar Industries Association, Inc.

March 25, 2021

## TABLE OF CONTENTS

## I. INTRODUCTION

**Q. PLEASE STATE YOUR NAME, BUSINESS ADDRESS AND CURRENT POSITION.**

A. Benjamin D. Inskeep, 1155 Kildaire Farm Road, Ste. 202, Cary, North Carolina, 27511. My current position is Principal Energy Policy Analyst with EQ Research LLC.

**Q. DID YOU PREVIOUSLY SUBMIT TESTIMONY IN THIS PROCEEDING?**

A. Yes. I submitted direct testimony on October 7, 2020, and testimony for the additional proceedings ("supplemental testimony") on February 25, 2021.

**Q. WHAT IS THE PURPOSE OF YOUR REBUTTAL TESTIMONY AND HOW IT IS ORGANIZED?**

A. The purpose of my rebuttal testimony is to respond to Kentucky Power Company's ("Company" and "KPC") supplemental testimony regarding its net metering tariff proposal ("NMS II"), as authorized under the Kentucky Public Service Commission's ("Commission") January 15, 2021 Order of procedure in this proceeding.

Section II of my rebuttal testimony addresses the Company's net metering cost of service study and explains why the Commission should reject both this flawed study as incomplete and the conclusions made by the Company regarding the impacts of its net metering customers and the reasonableness of Tariff NMS II based on the results of the study.

Section III contains my concluding remarks.

**Q. WHAT ARE YOUR RECOMMENDATIONS TO THE COMMISSION WITH RESPECT TO NET METERING?**

A. I continue to recommend that the Commission reject the Company's proposed Tariff NMS II, which still has not been adequately supported by Kentucky Power, despite multiple rounds of testimony. As I discussed in my supplemental testimony, a critical deficiency of Kentucky Power's Tariff NMS II that the Commission recognized in its January 13, 2021, Order and its February 22, 2021, Order concerning rehearing in this proceeding is that Kentucky Power did not conduct an actual cost of service study or provide any cost support for serving net metered customers and failed to meet its burden of proof that Tariff NMS II produces fair, just, and reasonable rates.

Despite suggesting otherwise in its supplemental testimony, the Company still has not conducted a net metering cost of service study demonstrating the actual costs to serve its net metering customers in Kentucky or showing that Tariff NMS II recovers the net costs (and not more than the costs) to serve its net metering customers. Furthermore, the study suffers from additional serious shortcomings that make it unreliable for evaluating the impacts of net metering customers. Accordingly, I recommend that the Commission now take the next logical step following from its Orders and reject Tariff NMS II and maintain the design and effective compensation rate for net metering customers provided under of Kentucky Power's Tariff NMS (also referred to as Tariff NMS I).

## II. KPC'S NET METERING COST OF SERVICE STUDY

**Q. WHAT DID THE COMPANY PUT FORTH IN ITS SUPPLEMENTAL TESTIMONY?**

A. In its supplemental testimony, the Company purports to have now conducted a cost of service study that includes separate classes for residential and non-residential net metering

customers. Based on its analysis, the Company concludes that the purported load shapes of its residential and non-residential net metering customers are more costly to serve than that of the standard rate classes to which they belong, which it asserts supports its position that net metering customers are being provided a subsidy from non-net metering customers. The Company estimates that residential and non-residential net metering customer classes are each being subsidized by approximately $20,000 each year.[1] The Company concludes that since its cost of service study shows net metering customers are more costly to serve, its proposed Tariff NMS II proposal should be adopted.[2]

**Q. AT A HIGH LEVEL, WHAT ARE YOUR CONCERNS REGARDING THE COMPANY'S SUPPLEMENTAL TESTIMONY AND THE LOGIC AND REASONING USED THEREIN?**

A. As I describe in more detail below, I believe there are fatal problems with the Company's cost of service study on net metering customers and the conclusions the Company draws from its study, including:

1. The Company did not conduct the requisite load research study on its net metering customers to develop representative load profiles of its net metering customers.
2. In place of using actual data about its net metering customers, the Company created "Frankenstein" load profiles for net metering customers that it cobbled together using ill-fitting component parts based on dubious assumptions and

[1] Supplemental Testimony of Alex Vaughan, S-3 [PDF 5 of 11] (filed February 25, 2021); Supplemental Testimony of Stegall, S-4 [PDF 6 of 9] (filed February 25, 2021).
[2] Supplemental Testimony of Alex Vaughan, S-2 [PDF 4 of 11] (filed February 25, 2021).

not based on the actual load profiles of its current net metering customers. The Company's creation here turns out to be more fictional than fact.

3. The Frankenstein load profile created for net metering customers does not match the Company's description of net metering customers as being identical to non-net metering customers (except for the presence of a DG system), and instead results in a load profile where net metering customers having a significantly higher average load during non-solar-producing hours of the day (*i.e.,* nighttime). In other words, the Company created phantom load that offsets the generation from the DG system that meets a customer's own load.
4. The net metering cost of service study contains additional serious flaws not explained or justified by the Company that would further bias the results of the cost of service study to incorrectly indicate that net metering customers are being subsidized by non-net metering customers.
5. The conclusions stemming from the cost of service study reflect the flawed assumptions and data used by the Company as inputs to its study, and not the actual cost to serve Kentucky Power's actual net metering customers.
6. Even if the conclusions stemming from the cost of service study had been conclusively demonstrated by the Company through robust evidence based on load research of its net metering customers, the alleged cross-subsidy is so small as to be immaterial to the Company and other ratepayers (amounting to about 1.2 cents per month per residential customer), whereas the changes proposed by the Company to rectify the alleged subsidy would be severe and detrimental

to prospective net metering customers, businesses that provide net metering systems to customers, and the associated job creation and economic benefits.

7. Perhaps most importantly, the Company did not demonstrate that the proposed Tariff NMS II would actually address the cross-subsidy it identified in its flawed net metering cost of service study, nor did it show that Tariff NMS II would not create new undesirable cross-subsidies from net metering customers to the rest of the Company's customers. Evaluating these issues is one of the main purposes for conducting a full cost of service study in the first place.

**Q. DOES THE COMPANY'S NET METERING COST OF SERVICE STUDY USE CREDIBLE AND ACCURATE DATA ABOUT ITS NET METERING CUSTOMER CLASSES BASED ON LOAD RESEARCH STUDIES OF THESE CUSTOMERS?**

A. Absolutely not. The Company's net metering cost of service study is based on the load profiles created by the Company for all customers of the applicable customer class, and is not based on the actual load profile characteristics of its net metering customers. Because it has failed to actually collect the data necessary to conduct a cost of service study on its actual net metering customers, the Company resorted to creating a load profile by mashing together several ill-fitting component parts.

The Company has admitted that it has failed to conduct the actual load research that would be necessary to establish an accurate load profile of its net metering customers, and it has not collected production data from the small number of net metering systems currently on its system.[3] Instead, the Company decided to make up net metering customer

[3] Kentucky Power response to KYSEIA 1-7(d) and 1-8 [PDF 9-11 of 51] (filed August 26, 2020); Kentucky Power response to KYSEIA 4-4 through 4-6 (filed March 16, 2021) [PDF 4-7 of 16]; Kentucky Power response to Staff 9-20 [PDF 21 of 41] (filed March 16, 2021).

load profiles based on unsupported guesses about the characteristics of its net metering customers that are not supported by any actual evidence. The Company's net metering cost of service study therefore fails to provide any meaningful evidence on what the cost to serve is for the Company's actual net metering customers in Kentucky.

**Q. BASED ON THIS SERIOUS SHORTCOMING WITH THE COMPANY'S NET METERING COST OF SERVICE STUDY, WHAT IS YOUR RECOMMENDATION TO THE COMMISSION?**

A. On this basis alone, the Commission should reject the Company's cost of service study on net metering customers. It should direct the Company to conduct a rigorous load research study on its net metering customers over the coming year(s) and present its data, assumptions, and findings in a transparent manner as part of any future proposal the Company makes to significantly modify its net metering tariff.

**Q. HOW DID THE COMPANY CREATE A LOAD PROFILE FOR NET METERING CUSTOMERS TO USE IN ITS COST OF SERVICE STUDY IF IT DID NOT CONDUCT THE REQUISITE LOAD RESEARCH ON NET METERING CUSTOMERS?**

A. The Company started with the respective class load research profiles (*e.g.*, the Residential "8760 hour" load profile was the starting point for developing the residential net metering load profile). In other words, instead of starting from class load research profiles specific to net metering customers, which would show representative load profiles for its actual net metering customers, it used generic load profiles for the entire respective class.

The Company then subtracted the class average system solar generation, which it apparently based on delivered kWh to its actual net metering customers.[4]

Finally, the Company "scaled" the resulting load profile to align with the actual test year usage for the net metering customers.[5] This scaling technique artificially increased the hourly load calculated for net metering customers.

As an illustration of how this worked, consider the Company's underlying calculations for April 1, 2019, at midnight (hour "0"). The average class load for a residential customer was 2.358 kW at this time. The Company then subtracted out the class average system solar generation, which was 0 kW at this time, as solar does not produce electricity at night. However, rather than using 2.358 kW as the load for the residential solar net metering customer at midnight on April 1, 2019, the Company then applied a scaling factor that artificially increased the net metering class load so that it averaged 2.952 kW per residential net metering customer.[6]

This exercise in "scaling" is inappropriate because it fails to account for the fact that differences in monthly or annual energy usage are driven by individual customer needs, which in turn influence a customer's load shape. For instance, a customer with electric heating (or many other electric appliances) is likely to have higher overall electric usage than a non-electric heating customer, and a load shape that reflects the different pattern in energy consumption associated with electric heating. In addition, all other things

[4] The Company did not specifically describe how it created this solar profile in its Supplemental Testimony, but it appears to match the delivered kWh for net metering customers shown in KPCO_R_KPSC_4_82 (filed August 26, 2020).

[5] KPC Response to Commission Staff's Ninth Set of Data Requests Dated March 8, 2021, KPSC 9_20; Kentucky Power response to Staff 9-20 [PDF 21 of 41] (filed March 16, 2021).

[6] *See* KPCO_R_KYSEIA_4_6_Attachment1, tab "Expanded kW" (filed March 16, 2021). The average residential net metering load for April 1, 2019 at hour 0 was derived by dividing 79.7129 kW (the total residential solar class load calculated by the Company in column Q) by 27, the number of residential net metering customers used by the Company in its net metering cost of service study.

being equal, customers with higher usage are likely to have higher load factors (*i.e.,* an overall flatter load profile). Accordingly, scaling hourly usage based on a class average profile fails to account for the fact that variations in overall energy usage, as driven by variations in end-uses, often present themselves in the form of a different pattern of energy use at different times. This is why load research typically uses a stratification approach, where a total sample is composed of customers grouped into multiple strata (*e.g.,* by monthly energy use), each of which has a unique load shape.

The scaling approach is particularly prone to error in the context of the very small sample size of a hypothetical net metering class because statistical reliability is inversely correlated with the size of the sample. The fewer observed values that we have, the less confident we can be in the statistical accuracy of the results. Stated another way, an average based on 20 customers is likely to depart further from the class average than a sample of 200 customers because each observation carries more weight and anomalies can exert a greater influence on the average.

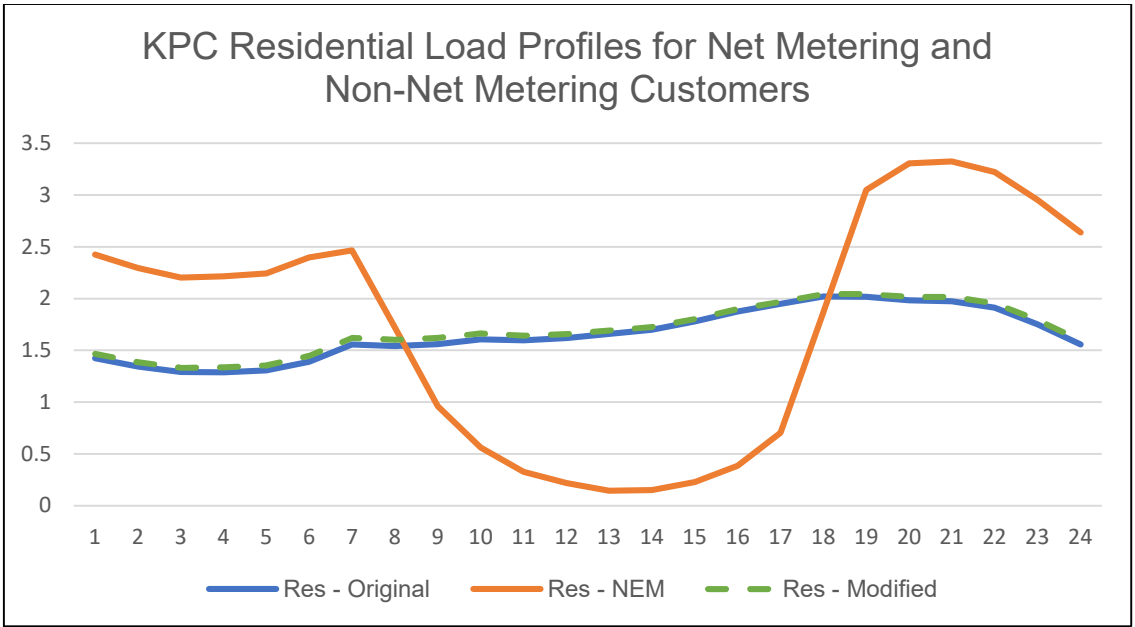
**Q. IN YOUR OPINION, DOES THE METHODOLOGY USED BY THE COMPANY PRODUCE A REASONABLE APPROXIMATION OF THE ACTUAL AVERAGE LOAD PROFILES OF THEIR NET METERING CUSTOMER CLASSES?**

A. No. Since Kentucky Power has failed to conduct the requisite load study and collect the necessary data to develop a load profile of their actual net metering customers, it is not possible to definitely state how accurate their estimated profile is. However, there are several glaring shortcomings that strongly suggest it is unrealistic, insufficiently rigorous, and a poor substitute for actual data about its net metering customers.

Most notably, while the Company has asserted net metering customers are the same as non-net metering customers, absent their distributed generation,[7] the load profiles it created for net metering customers assume the opposite. For example, Figure 1 below compares the Company's residential class load profile provided by the Company to the residential net metering class load profile created by the Company.[8] As is clearly seen in this figure, Kentucky Power's methodology – particularly its use of "scaling" – produces a load profile in which a residential net metering customer has a *substantially higher* average net load compared to non-net metering residential customers during non-solar-producing hours. It shows that a residential net metering customer would have an average peak load that is about 64% higher than a non-net metering customer (*i.e.,* 3.3 kW compared to 2.0 kW at 8pm). In fact, for all non-daylight hours (*i.e.,* 8pm to 6am), the residential net metering profile used by the Company has an average load that is between approximately 64% and 66% higher than the residential class load profile.

[7] Rebuttal Testimony of Alex Vaughan, p. R38 [PDF 249 of 273] (filed November 9, 2020) (stating "Net metering customers' underlying loads are no different than the other customers in their standard tariff class, they have simply chosen to add behind the meter generation to their load.").

[8] Rebuttal Testimony of Alex Vaughan, p. R38 [PDF 249 of 273] (filed November 9, 2020).




*Notes: "Res – Original" depicts the standard residential load profile used in the Company's cost of service study. "Res – NEM" and "Res – Modified" depict the residential load profiles used in the net metering cost of service study for Residential Net Metering and Residential (non-net metering) customers, respectively.*

The Company failed to provide sufficient evidence to support this resulting assumption that residential net metering customers have a remarkably higher loads than non-net metering customers. Furthermore, it directly contradicts the Company's assertions that "[n]et metering customers' underlying loads are no different than the other customers in their standard tariff class, they have simply chosen to add behind the meter generation to their load," as well as the load shapes of the Company's net metering customers in Virginia, which it previously asserted are reasonable comparison points for its Kentucky customers.[9]

Previously, the Commission denied Kentucky Power's request for rehearing on the issue of NMS II, affirming that Kentucky Power has the burden proof to establish sufficient evidence in support of its application, and finding that it failed to do so here. The Commission concluded that "there is no merit to in Kentucky Power's assertion that it

[9] Rebuttal Testimony of Alex Vaughan, p. R38 [PDF 249 of 273] (filed November 9, 2020).

provided sufficient evidence to carry its burden."[10] The Company's supplemental testimony has not changed that conclusion.

**Q. HAVE OTHER UTILITIES USED OR HAVE STATE UTILITY REGULATORS REQUIRED THAT UTILITIES CONDUCT LOAD RESEARCH ON THEIR ACTUAL NET METERING CUSTOMERS TO PRODUCE AN ACCURATE COST OF SERVICE STUDY PRIOR TO MODIFYING NET METERING COMPENSATION RATES?**

A. Yes. Table 1 identifies some examples where other state utility regulators rejected proposed changes to net metering that were based on cost of service studies that failed to use appropriate load profiles for net metering customers, or where the utility used or planned to use such data to support its proposal to make changes to net metering.

**Table 1: Examples of Net Metering ("NEM") Customer Load Research Used or Required in Other Jurisdictions[11]**

| State | Utility | Summary | Key Excerpts |
|---|---|---|---|
| MT | NorthWestern Energy | In Northwestern Energy's 2018 rate case, its embedded cost of service study used NEM customer load data that intervenors described as artificial and derived through a convoluted series of assumptions and adjustments, rather than load research sample data for NEM customers like it did for all other residential customers in the study. Accordingly, the Montana Public Service Commission denied the utility's request to place NEM customers in a separate rate class and charge NEM customers a demand charge rate design. | "The Commission finds that NorthWestern should **develop load research sample data for NEM customers of comparable quality to that used for the broader residential class** for use in future cost of service studies."[12] |

[10] Order regarding rehearing, February 22, 2021, pp. 26-27 and Ordering Paragraph 17.

[11] Key portions of quoted excerpts have been bolded for emphasis. Footnotes from the excerpts have been omitted.

[12] Montana Public Service Commission, Docket No. 2018.02.012, Order, December 20, 2019, p. 63, *available at*: http://psc.mt.gov/Portals/125/Documents/news/NWE%20Rate%20Case/2018212%20FO.pdf

| State | Utility | Summary | Key Excerpts |
|---|---|---|---|
| NV | NV Energy | The Public Utilities Commission of Nevada found that NEM ratepayers had unique service and cost characteristics based on the actual net metering class load shapes of NV Energy net metering customers. | "NV Energy states that the **NEM ratepayer class load shapes were developed using all active NEM ratepayers** as of March 31, 2015, for the entire study period of June 2014 through May 2015. Actual generation data was used when available. Missing hourly generation data was estimated using the average of those ratepayers that have at least 95 percent of the necessary 15-minute generation data. The compiled data was then compared to the National Renewable Energy Laboratory's averages for reasonableness."[13] |
| NH | Eversource Energy<br><br>Liberty Utilities<br><br>Unitil Energy Systems | In its Order adopting an alternative net metering tariff that will be in place "while further data is collected and analyzed, pilot programs are implemented, and a distributed energy resource (DER) valuation study is conducted," the New Hampshire Public Utilities Commission found that "there is little evidence of significant cost-shifting from DG customers to customers without DG," and that additional load research needed to be collected on DG customers. | "…[T]he **utilities should collect and make available load shape data** for individual distribution circuits, or at least for a selected sample of distribution circuits, **as well as customer load data on an hourly or shorter interval basis for at least a representative sample of customers**…Following completion of the value of DER study, and with the availability of the additional customer load and system planning and operations data, the Commission will open a new proceeding to determine whether and when further changes should be made to the net metering tariff structure."[14] |
| OK | Oklahoma Gas & Electric | The Oklahoma Corporation Commission rejected the proposed separate rate classes with three-part rates for DG customers. The utility's cost of service study using smart meter data on its actual DG customers showed DG customers were not subsidized by non-DG customers. | "In the event OG&E proposes, in the future, a demand charge or any other substantive change to a tariff applicable to customers with distributed generation that OG&E deems necessary to comply with 17 O.S. § 156, the Commission will require OG&E to include as part of its case cost effectiveness tests, such as those performed for the company's demand programs, and make available to the parties detailed cost and benefit data."[15] |

[13] Public Utilities Commission of Nevada, Docket Nos. 15-07041 and 15-07042, Order, December 23, 2015, Paragraph 17, *available a*t: http://pucweb1.state.nv.us/PDF/AxImages/DOCKETS_2015_THRU_PRESENT/2015-7/8412.pdf

[14] New Hampshire Public Utilities Commission, Order, June 23, 2017, pp. 66 and 72-73, *available at:* https://www.puc.nh.gov/Regulatory/Docketbk/2016/16-576/ORDERS/16-576_2017-06-23_ORDER_26029.PDF

[15] Oklahoma Corporation Commission, Docket No. PUD 201500273, Order No. 662059, p. 13, March 20, 2017, *available at*: http://imaging.occeweb.com/AP/Orders/occ5360859.pdf

| State | Utility | Summary | Key Excerpts |
|---|---|---|---|
| SC | Duke Energy Carolinas (DEC)<br><br>Duke Energy Progress (DEP) | DEC and DEP used actual metered solar production data on its NEM customers to define solar customer's contributions to their cost of service, the same data that they used to calculate costs and benefits. The utilities reached a settlement agreement, currently pending, on its Solar Choice Net Metering tariff that will replace their existing net metering tariffs in the future if approved. | **"[T]he Companies [Duke Energy Carolinas and Duke Energy Progress] utilized the same factors—including utilizing the same underlying data, such as production meter data—in performing a forward-looking evaluation** for the Companies' proposed Permanent Tariffs (as defined below). In this way, the Commission will be able to compare 'apples to apples' when evaluating the Companies' Permanent Tariffs against the Existing NEM Programs."[16] |
| TX | El Paso Electric (EPE) | EPE began load research studies on DG customers in 2013. The load research was used by the utility in its rate case application to support its proposed DG tariff. The DG tariff was ultimately resolved through an approved settlement agreement with intervenors. | "EPE performed a sample study for the Texas residential customers who have installed rooftop solar. **The study provides data about the different load characteristics of these residential DG customers compared to residential customers (non-DG)** ….As of the end of the Test Year, EPE had 57 customers in its residential DG load study for Texas."[17] |
| UT | Rocky Mountain Power (RMP) | RMP performed load research on net metering customers in 2015 prior to the Commission adopting a net metering transition program in 2017. | "The magnitude of this subsidy, if it exists, will not be readily apparent if the analysis does not 'drill down' another level and separately allocate costs to net metering customers based on their usage characteristics. Analyzing costs at the customer class level ensures the cost to serve the net metering customers is also recognized. PacifiCorp represents **'[u]sing data from the load research study that is currently underway**, [PacifiCorp] will be able to **create a class profile for residential NEM customers**, in the same manner done for other types of customer classes' and '[t]his will |

[16] Public Service Commission of South Carolina, Docket No. 2020-265-E, Direct Testimony of Bradley Harris for Duke Energy Carolinas, LLC and Duke Energy Progress, LLC, November 2, 2020, p. 6, *available at*: https://dms.psc.sc.gov/Attachments/Matter/a570cc88-c495-41a7-af59-65563e253518; *See also* Public Service Commission of South Carolina, Docket No. 2019-182-E, Direct Testimony of Bradley Harris for Duke Energy Carolinas, LLC and Duke Energy Progress, LLC, October 8, 2020, p. 6, *available at*: https://dms.psc.sc.gov/Attachments/Matter/3670a579-5fe0-41c8-82ab-7a4af9f5019b

[17] Public Utilities Commission of Texas, Docket No. 46831, Direct Testimony of George Novela, February 13, 2017, pp. 921-922, *available at*: http://interchange.puc.texas.gov/Documents/46831_2_929022.PDF (Note: Testimony appears at PDF 4-87 of 100 of that file).

| State | Utility | Summary | Key Excerpts |
|---|---|---|---|
| | | | enable [PacifiCorp] to assign costs to the NEM customers based on how they use the utility system.'"[18] |

**Q. ARE THERE OTHER PROBLEMS YOU IDENTIFIED WITH KENTUCKY POWER'S NET METERING COST OF SERVICE STUDY?**

A. Yes. The Company's net metering cost of service study contains other major methodological problems. First, the Company assigns a demand of zero (0) for hours when the respective net metering class is exporting electricity to the grid. This is problematic because the net metering class actually has a *negative* demand during these hours. In other words, the Company accounts for costs (*i.e.,* positive demand) by net metering customers, but not all of the benefits (*i.e.,* negative demand) in its net metering cost of service study. This means that the cost of service study is not fully crediting net metering customers for the benefits they provide through excess energy supplied to the grid, skewing the results in a way that would make net metering customers appear to be more costly to serve than they actually are.

Second, the Company's net metering cost of service study produces a maximum non-coincident peak ("NCP") demand that is different for net-metering and non-net metering customers. For example, for the residential class, the maximum NCP demand is 5.58 MW, whereas for the residential net metering class, the maximum NCP demand is 9.07 MW.[19] This means that all costs that the Company allocates based on a Maximum

[18] Utah Public Service Commission, Docket No. 14-035-114, Order, November 10, 2015, p. 10, *available at:* https://pscdocs.utah.gov/electric/14docs/14035114/270449140351140.pdf

[19] *See* "SECDEM" tab in the Company's JMS_CCOS_Workpaper_w_NMS_Adjustments (filed February 25, 2021). Per-customer values are derived by dividing the class Maximum NCP (Column H) by the respective number of customers (133,754 customers and 27 customers, respectively, for residential and residential net metering customers) shown in the "Customer Allocators" tab from the same workpaper.

NCP basis will be higher per customer for net metering customers compared to the respective customer class.[20] However, this difference is not based on actual measured differences in the Maximum NCP between net metering and non-net metering customers, but rather reflects the flawed assumptions baked into the underlying load profile.

Third, the Company admits that it did not adjust the retail revenue requirement presented in the Company's direct case to reflect changes in the jurisdictional allocation of costs attributable to reductions in coincident peaks produced by net metering customers.[21] The Company also confirmed that if a net metering class reduces its contribution to monthly peaks while all other retail classes retain the same peak contributions, the overall retail jurisdictional revenue requirement would be incrementally lower while the non-Kentucky jurisdictional revenue requirement would be higher.[22] However, the Company's analysis fails to reflect these benefits provided by net metering customers. While the Company correctly pointed out that "[t]he retail revenue requirement, along with the coincident peak values used to allocate the revenue requirement between the Company's retail jurisdiction and the Company's wholesale customers already incorporates the test year benefits provided by net metering customers' generating facilities,"[23] the Company does not actually credit the net metering customers for these benefits. To do so, the Company would have needed to conduct a counterfactual jurisdictional and class cost of service analysis to see how the presence of net metering customers reduces the revenue requirement for the Company's Kentucky customers.

---

[20] For instance, the Secondary Demand Allocator is based on an average of the Maximum NCP and the annual SNCP.

[21] KPC Response to KYSEIA Fourth Set of Data Requests Dated March 8, 2021, 4_8(a) [PDF 9 of 16] (filed March 16, 2021).

[22] *Ibid*, at 4_8(b) [PDF 9 of 16].

[23] *Ibid*, at 4_8(a) [PDF 9 of 16].

Finally, I will note that the very small number of net metering customers used in the test year of the Company's cost of service study (*i.e.,* 27 residential customers and 8 non-residential customers) makes the results particularly susceptible to being skewed by outliers. The results of the cost of service study could also change substantially based on the addition of new net metering customers for the same reason.

**Q. IS THE COMPANY'S PROPOSED TARIFF NMS II BASED ON THE RESULTS OF ITS COST OF SERVICE STUDY?**

A. Absolutely not. The Company filed its rate case, including its proposed Tariff NMS II, in June 2020. It waited nearly eight months before it finally conducted and filed its purported net metering cost of service study through Supplemental Testimony submitted on February 25, 2021. The net metering cost of service study is an after-the-fact, post hoc justification for the Company's proposal, and clearly was not used as an analytical tool for helping to formulate and develop the Company's Tariff NMS II.

The Company is now trying to justify its flawed net metering proposal with a flawed cost of service study. Even so, the Company's Tariff NMS II is still untethered from the results of its net metering cost of service study. While the Company claims the "result is consistent with and was predicted based upon" prior analyses done by the Company,[24] it has not explained in any way how the design of Tariff NMS II is based on the specific findings of the cost of service study or how Tariff NMS II was designed and tailored to address the identified "subsidy." For example, the Company has not explained or connected the results of its cost of service study to its choice to use two netting periods or its proposed compensation rate for energy exported by net metering customers.

[24] Supplemental Testimony of Alex Vaughan, S-4 [PDF 6 of 11] (filed February 25, 2021).

Furthermore, the Company has not conducted an analysis about how its proposed Tariff NMS II would impact the alleged "subsidy" the Company is so keen on addressing. The Company merely assumes that "NMS II customers would not be subsidizing non-participating customers,"[25] but when asked to show how the net metering "subsidy" would change under NMS II, it admitted that "The Company has not performed the requested analysis."[26] Therefore, it is possible that Tariff NMS II could actually be creating a new subsidy where customers served under Tariff NMS II would be paying *more* than their cost of service (*i.e.,* net metering customers could be subsidizing non-net metering customers). Quite simply, the Commission has no ability to determine, based on the evidence offered by the Company, to what degree the net metering "subsidy" would change, and whether it would create new undesirable cross-subsidies.

**Q. WHAT DOES THE NET METERING ACT STATE WITH REGARDS TO RATES TO BE ESTABLISHED FOR NET METERING CUSTOMERS?**

A. The Net Metering Act provides that "[u]sing the ratemaking process provided by this chapter, each retail electric supplier shall be entitled to implement rates to recover from its eligible customer generators all costs necessary to serve its eligible customer-generators…"[27]

**Q. BASED ON THE COMPANY'S NET METERING COST OF SERVICE STUDY, CAN THE COMMISSION CONCLUDE THAT THE COMPANY'S TARIFF NMS**

[25] KPC Response to KYSEIA Fourth Set of Data Requests Dated March 8, 2021, 4_3 [PDF 3 of 16] (filed March 16, 2021).
[26] KPC Response to KYSEIA Fourth Set of Data Requests Dated March 8, 2021, 4_5 [PDF 5 of 16] (filed March 16, 2021).
[27] KRS 278.466(5).

**II RECOVERS THE COSTS NECESSARY TO SERVE NET METERING CUSTOMERS?**

A. No. The Company's net metering cost of service study does not demonstrate the "costs necessary to serve its eligible customer-generators," as it is not based on load research on its actual net metering customers. As described above, additional serious flaws in the Company's cost of service study further suggest that it is an unreliable source for determining the costs to serve net metering customers. The nature of these flaws means the Commission can have no confidence that the inputs and methodology used by the Company will produce a reasonable or reliable estimate of the cost to serve its net metering customers. Instead, the Company's net metering cost of service study is an example of "garbage in, garbage out" modeling in which nonsense and poor quality inputs into the model (*e.g.,* the artificial load profiles of net metering customers created by the Company) result in biased, nonsense outputs (*e.g.,* the results underlying the conclusions about the nature and magnitude of cross subsidies related to net metering customers). Further, the Company has failed to tie the results of the study that it did to the cost allocation and rate design for Tariff NMS II, meaning even if the cost of service study had been based on reasonable inputs and a sound methodology, the Company failed to make a sufficient showing to demonstrate that its proposed changes will address the alleged problem in an appropriate manner.

**Q. DO THE RESULTS OF THE COST OF SERVICE STUDY INDICATE THAT THE COMMISSION SHOULD MODIFY THE NET METERING COMPENSATION RATE IN THIS PROCEEDING?**

A. No. Even assuming for the sake of argument that the results of the Company's cost of service study on net metering customers provided a reasonable basis for determining the cost to serve net metering customers, the results demonstrate that the existing cross subsidy is extremely small, especially in the context of the other class cross-subsidies identified by the Company, and likely many other types of cross-subsidies that exist in rates that are not specifically addressed or analyzed by the Company. The identified subsidy for residential and non-residential net metering customers, respectively, are both smaller than any other cross subsidy identified by the Company.[28]

In other words, even if the Company's net metering cost of service study provided credible results, which it does not, the Company still fails to demonstrate any material harm to the Company or other customers under Tariff NMS. The Company's estimate of the net metering cross-subsidy across all customers is approximately $40,000, and approximately $20,000 for residential net metering customers specifically. The Company's cost of service study identified 133,754 residential customers and 27 net metering customers. Therefore, the total subsidy the Company has identified that is allegedly burdening non-net metering residential customers is about $0.15 each year, or approximately 1.2 cents each month.[29] The overall rate impact using the Company's analysis is approximately $0.00001 per kilowatt-hour.[30] It is hard to think of a less consequential issue in current rates than that.

Whereas the Company and non-net metering customers apparently have very little to lose by the continued existence of retail rate net metering under Tariff NMS according

[28] Supplemental Testimony of Jason Stegall, S4 (filed February 25, 2021) [PDF 6 of 9].

[29] The annual subsidy calculation is based on the following equation: = $20,000 / (133,754 – 27). The resulting answer is divided by 12 to determine the monthly subsidy.

[30] See Exhibit_AEV_R7.xlsx. The approximate rate impact is calculated by dividing $40,000 by the total Test Year Billable Sales kWh identified in the Company's Exhibit to arrive at a per-kWh rate impact.

to the Company's own fatally flawed analysis, the changes proposed by the Company under Tariff NMS II would be devastating to prospective net metering customers with respect to their ability to recoup the costs of a DG investment, as I summarized in more detail in my Supplemental Testimony and KYSEIA Witness Justin Barnes described in his Direct Testimony.

## III. CONCLUSION

**Q. PLEASE SUMMARIZE YOUR RECOMMENDATIONS.**

A. For the reasons discussed above, I recommend that the Commission reject the Company's proposed Tariff NMS II. I recommend that the Commission also reject the Company's net metering cost of service study as insufficient and direct the Company to conduct load research on its net metering customers for use in any future proposals by the Company that would significantly modify its net metering tariff.

**Q. DOES THIS CONCLUDE YOUR TESTIMONY?**

A. Yes.