COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

ELECTRONIC APPLICATION OF KENTUCKY UTILITIES COMPANY FOR AN ADJUSTMENT OF ITS ELECTRIC RATES AND APPROVAL OF CERTAIN REGULATORY AND ACCOUNTING TREATMENTS	**)** **)** **)** **)** **)** **)**	**CASE NO. 2025-00113**

In the Matter of:

ELECTRONIC APPLICATION OF LOUISVILLE GAS AND ELECTRIC COMPANY FOR AN ADJUSTMENT OF ITS ELECTRIC AND GAS RATES, AND APPROVAL OF CERTAIN REGULATORY AND ACCOUNTING TREATMENTS	**)** **)** **)** **)** **)** **)**	**CASE NO. 2025-00114**

REBUTTAL TESTIMONY OF CHARLES R. SCHRAM VICE PRESIDENT, ENERGY SUPPLY AND ANALYSIS ON BEHALF OF KENTUCKY UTILITIES COMPANY AND LOUISVILLE GAS AND ELECTRIC COMPANY

Filed: September 30, 2025

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INTRODUCTION

Q. Please state your name, position, and business address.

A. My name is Charles R. Schram. I am Vice President, Energy Supply and Analysis for Kentucky Utilities Company ("KU") and Louisville Gas and Electric Company ("LG&E") (collectively, "Companies") and an employee of LG&E and KU Services Company, which provides services to KU and LG&E. My business address is 2701 Eastpoint Parkway, Louisville, Kentucky 40223.

Q. What is the purpose of your rebuttal testimony?

A. I provide rebuttal testimony on two topics. First, I rebut testimony by Attorney General ("AG") and Kentucky Industrial Utility Customers, Inc. ("KIUC") witness Stephen J. Baron concerning the Companies' curtailable service riders ("CSRs"). Second, I respond to Sierra Club witness Jeremy I. Fisher, Joint Intervenors witness James Fine, and Kentucky Solar Industries Association, Inc. witness Jason W. Hoyle concerning various avoided cost components of the Companies' qualifying facility ("QF") rates and Rider NMS-2 net metering compensation rates.

THE COMPANIES' CURRENT CSR RATES REMAIN REASONABLE

Q. Mr. Baron argues at length that avoided costs would justify increasing the compensation the Companies pay to participating Rider CSR-1 and CSR-2 customers by as much as 100%, though he recommends a lower increase of $2.50/kVA-month.[1] How do you respond?

A. Mr. Baron's proposed CSR rates, which include increased noncompliance penalties, are unreasonable because they overstate avoided costs.

[1] Baron at 5 and 40 – 52.

First, Mr. Baron observes the Companies have called on CSR to help maintain system reliability in the past and asserts they are likely to do so more frequently in the future.[2] I would observe (1) that is precisely why the Companies pay CSR customers on a monthly basis, irrespective of whether the Companies require CSR customers to curtail each month, and (2) the Companies are nowhere close to using their existing CSR capacity to the greatest extent allowed under current tariff terms:[3]

CSR Physical Curtailment Events by Year

Year	Events
2021	0
2022	2[4]
2023	0
2024	0
2025	1

This does not suggest increased CSR rates will soon be necessary to account for a high degree of CSR use.

Second, Mr. Baron's use of a simple cycle combustion turbine to establish the avoided generation capacity cost for CSR greatly overstates such avoided costs.[5] Mr. Baron cites the Companies' 2016 base rate case testimony as supporting his approach,[6] but he overlooks two important points: (1) in 2016, the Companies used the fixed costs of already installed—and therefore partially depreciated—combustion turbines, not a

[2] Baron at 42-43.
[3] *See* Companies' Response to AG-KIUC 1-115.
[4] The Companies called two sequential events during Winter Storm Elliott from December 23 to December 24, 2022.
[5] Baron at 45-47.
[6] Baron at 45-46, citing "Direct Testimony of Steven Seelye, Case No. 2016-00370, pages 50-52."

new turbine, to determine avoided costs for CSR;[7] and (2) battery energy storage, which is far more comparable to the performance characteristics of CSR than a combustion turbine, was not a viable, potentially economical supply-side resource in 2016 to use for CSR avoided costs. As the Companies' recent IRP and CPCN analyses have shown, battery energy storage is now more economical than new simple cycle combustion turbines for the Companies' purposes across numerous studied scenarios. Thus, Mr. Baron chose an inappropriate proxy for calculating avoided costs for CSR, invalidating the basis for his suggested CSR compensation rate increase.

Q. Mr. Baron argues the Companies benefit from CSR buy-through revenues, which amounted to a total of $1.9 million across both Companies for calendar years 2022, 2024, and the first two months of 2025.[8] Does this affect your view concerning possible increases to CSR compensation rates?

A. No. First, I would observe that Mr. Baron's Table 18 incorrectly states that the buy-through data for 2025 was only for January and February.[9] Actually, it was for January through and including June; the only buy-through events were in January and February.[10] Thus, what Mr. Baron's table actually shows is buy-through data for January 2022 through and including June 2025, i.e., it shows a total benefit of $1.9 million across both Companies over three and a half years.

[7] *See, e.g., Application of Kentucky Utilities Company for an Adjustment of Its Electric Rates and for Certificates of Public Convenience and Necessity*, Case No. 2016-00370, Direct Testimony of W. Steven Seelye at 55 ln. 1-5 (Nov. 23, 2016); *Application of Louisville Gas and Electric Company For An Adjustment of Its Electric and Gas Rates and For Certificates of Public Convenience and Necessity*, Case No. 2016-00371, Direct Testimony of W. Steven Seelye at 55 ln. 1-5 (Nov. 23, 2016).
[8] Baron at 48-50.
[9] Baron at 50.
[10] Companies' Response to AG-KIUC 1-115.

Second, I showed in my direct testimony that the avoided costs created by a hypothetical CSR offering that would be *more* operationally valuable to the Companies and their customers than the Companies' current CSR offerings would not justify increasing current CSR credits:[11]

CSR Credits for Hypothetical CSR Program ($/kVA-mo.)

	KU	LG&E
Transmission	3.38	3.32
Primary	3.44	3.38

That hypothetical CSR offering did not include a buy-through option because it adds no operational value.

That aside, even adding $1 million per year to the avoided cost value reflected in the table above provides no justification for increasing current CSR-2 credits, and it would perhaps support a small increase to CSR-1 credits (less than $1.00/kVA), but only if one ignored the operational limitations of CSR-1 compared to the hypothetical CSR offering the Companies used to develop avoided costs.[12] The credits for the hypothetical CSR program contemplated in my direct testimony, plus $1 million per year for buy-through revenues, are shown in the table below.

CSR Credits for Hypothetical CSR Program, including $1 million/yr. Buy-Through Revenue ($/kVA-mo.)

	KU	LG&E
Transmission	4.12	4.06
Primary	4.18	4.12

[11] Schram at 25-30.

[12] For example, the actual CSR offerings require advance notice of curtailments (60 minutes for CSR-1); the hypothetical CSR offering assumed no advance notice.

As I noted above, these values are moderately higher than current CSR-1 credits (less than $1.00/kVA higher), but they are almost $2.00/kVA lower than current CSR-2 credits.

Q. Does it continue to be your view that the Companies' current CSR credits are reasonable and should remain at their current levels?

A. Yes. As I stated and showed in my direct testimony, CSR customers' physical curtailments do provide real value to all customers. Therefore, I continue to believe retaining the existing CSR credit levels is appropriate; increasing them is not.

That being said, I do agree with Mr. Baron that any CSR credit increase should include a symmetrical increase to the non-compliance penalty.[13]

THE COMPANIES' PROPOSED QF AVOIDED COST COMPONENTS REMAIN REASONABLE

Q. Mr. Hoyle argues QF energy credits (and thus the Rider NMS-2 avoided energy cost component) should include variable minor maintenance costs based on PJM's most recent default values.[14] Is that reasonable?

A. No. The Companies are not PJM members; therefore, PJM's costs and frameworks do not apply to the Companies. Moreover, as the Companies explained in response to KSIA 3-5(a), it is appropriate to exclude maintenance costs from avoided energy costs because distributed generation resources, whether QFs or net metering customers' generators, do not cause the Companies to avoid any maintenance cost for their generating units. Therefore, it would be inaccurate and inappropriate to include any maintenance cost in the Companies' avoided energy cost for QF or NMS-2 rates.

[13] Baron at 51.
[14] Hoyle at 4-6, 7-10.

Q. Do you agree with Mr. Hoyle that QF capacity compensation should reflect the seasonality and timing of peak loads and provide a price signal sufficient to influence market participants' contribution to peak demand?[15]

A. No. Again, the error in Mr. Hoyle's argument arises from RTO market-related thinking and constructs. The Companies do not have seasonal or peak avoided capacity costs; they do not participate in RTOs' seasonal capacity auctions, for example; they just have avoided capacity costs. In calculating avoided capacity costs, the Companies seek to use an avoided cost proxy unit that reasonably corresponds to the type of unit they might avoid with sufficient distributed resources, e.g., a battery energy storage system ("BESS") or a simple-cycle combustion turbine ("SCCT"). But it would be unreasonable to then allocate those avoided costs only or primarily to certain peak hours if the avoided resource could be called upon around the clock and in any season, as BESS and SCCT can. Thus, it would be unreasonable to attempt to reflect seasonality or peak periods in formulating the Companies' avoided capacity costs for QF or NMS-2 rates.

Q. Have the Companies appropriately addressed avoided generation capacity costs for QF and NMS-2 rates regarding the timing of the Companies' upcoming capacity needs?[16]

A. Yes. The Companies anticipate a small capacity need in 2026 (137 MW winter shortfall; 96 MW summer shortfall), but it is temporary; in 2027, there is a summer surplus of 364 MW and a winter shortfall of just 22 MW (relative to a 1-in-10 loss of load expectation-based reserve margin). Therefore, the Companies do not propose to

[15] Hoyle at 4-6, 10-16.
[16] *See, e.g.,* Hoyle at 4-6, 17-24.

acquire new capacity resources to address the small and temporary shortfall, making zero the appropriate value for the avoided capacity cost of all two-year QF PPAs.

Regarding avoided capacity costs for seven-year QF PPAs and the avoided generation capacity cost component of Rider NMS-2, as I demonstrated in Exhibit CRS-6 to my direct testimony, adding 80 MW of wind resources or any type of solar resources would have no effect on the Companies' resource plans in the relevant timeframe (2030 was the study year).[17] Therefore, it was entirely appropriate to assign a zero-dollar avoided generation capacity cost for seven-year solar or wind PPAs under the Companies' QF rates, and thus a zero-dollar avoided generation capacity cost component for Rider NMS-2.

Q. Do you agree with the Rebuttal Testimony of Michael E. Hornung that behind-the-meter QFs should not receive capacity payments?[18]

A. Yes, though for different reasons; I defer to Mr. Hornung concerning the Commission's QF regulations. It is appropriate for behind-the-meter ("BTM") QFs not to receive capacity payments because any capacity on which another party has first call is not capacity for which any utility of which I am aware would pay. The Companies own generation and contract for other generation resources to ensure they will have sufficient resources available to serve their customers' needs. Any resource that might not be fully available—or available at all—because another party has the first right to use it is not a resource the Companies can reasonably include in their resource planning. It would therefore be unreasonable to require the Companies' customers to make capacity payments for such a resource.

[17] Schram Exh. CRS-6 at 6, Tbl. 5.
[18] Hoyle at 4-6.

Q. Would it be appropriate for the Companies to treat solar or wind distributed generators paired with BESS as an "Other" QF technology type?[19]

A. No. There are two reasons it would be inappropriate to do so, but also another important reason it is unnecessary to do so.

First, the Companies modeled the "Other" resource as an ideal, fully dispatchable resource in all hours.[20] Unless a solar or wind QF resource had a significant amount of energy storage associated with it, it would be unlikely to be fully dispatchable in all hours. For example, to serve a hypothetical 1 MW load around-the-clock with single-axis solar operating in the winter months, you would need at least 8 MW of solar nameplate capacity plus 5.25 MW to 7 MW of 4-hour BESS. This is almost certainly understated because the simple calculation does not account for round-trip losses and assumes 3 hours of sunlight *each* winter day for solar generation to serve the load and charge the BESS.

Second, without the Companies having the ability to monitor and control the BESS, which is not a condition of the Companies' QF tariff provisions, it would be inappropriate to assume for planning purposes that a QF's BESS would be charged and dispatchable to meet the Companies' needs. Therefore, the appropriate categorization of a solar or wind plus BESS for QF purposes—absent the ability for the Companies to monitor and control the BESS—is as a solar or wind resource, not an Other resource.

But the issue of BESS monitoring and control is one the Companies can address with QFs in PPAs. I defer to Messrs. Conroy and Hornung on regulatory issues, but it is my understanding that the Commission's QF regulation allows utilities and QFs to

[19] Hoyle at 4-6, 19.
[20] *See, e.g.,* Schram Exh. CRS-6 at 8.

work out mutually agreeable arrangements for the Commission to review.[21] Thus, the Companies could work with a solar or wind plus BESS QF to arrive at appropriate compensation for allowing the Companies to monitor and control the QF's BESS; it is not a concept the Companies oppose. But as I stated above, precisely because monitoring and control are key to the value of a QF's BESS, it would be inappropriate to classify and compensate solar or wind plus BESS QFs as Other simply because a QF has BESS.

THE COMPANIES' PROPOSED RIDER NMS-2 AVOIDED COST COMPONENTS REMAIN REASONABLE

Q. Do you have any initial observations in response to testimony filed by Mr. Fine concerning the Companies' Rider NMS-2 net metering compensation rates?[22]

A. Yes. As an initial matter, the *maximum* the Rider NMS-2 rate should be is the cost of utility-scale solar plus avoided transmission capacity, avoided distribution capacity, and avoided line loss costs; all other benefits Rider NMS-2 customers provide—100% of whom have solar generation—are equally obtainable through utility-scale solar. Today, the cost of lowest reasonable cost utility-scale solar is $0.07/kWh or less (e.g., the Companies' Mercer County Solar project's levelized cost of $0.06736/kWh). [23]

[21] 807 KAR 5:054 Sec. 7(9) ("This administrative regulation is not intended to restrict voluntary agreements between qualifying facilities and electric utilities. All contracts between qualifying facilities and electric utilities shall be provided to the commission for its review.").

[22] *See, e.g.,* Fine at 15, Fig. JF-3.

[23] Note that the Commission recently held that a proposed utility-scale PPA with a level cost of $83.68/MWh was not least cost. *Electronic Application of Kentucky Power Company for (1) an Order Approving the Terms and Conditions of the Renewable Energy Purchase Agreement for Solar Energy Resources between Kentucky Power Company and Bright Mountain Solar, LLC; (2) Authorization to Enter into the Agreement; (3) Recovery of Costs through Tariff P.P.A.; (4) Approval of Accounting Practices to Establish a Regulatory Asset' and (5) All Other Required Approvals and Relief*, Case No. 2024-00243, Order at 7, 24-25 (Ky. PSC Mar. 31, 2025). Note also that the Commission approved net metering compensation rates for Duke Energy Kentucky less than a year ago—including avoided transmission and distribution costs—of about $0.063/kWh. *Electronic Application of Duke Energy Kentucky, Inc. for an Adjustment to Rider NM Rates and for Tariff Approval*, Case No. 2023-00413, Order at 33 (Ky. PSC Oct. 11, 2024).

That is less than *half* of Mr. Fine's proposed Rider NMS-2 rate less those three avoided cost components (about $0.15/kWh).[24] Therefore, even accepting Mr. Fine's avoided transmission capacity, avoided distribution capacity, and avoided line loss costs solely for the sake of argument, his total proposed Rider NMS-2 rates are overstated by at least $0.08/kWh.

Note that this is true even if one accepts notions of "value of solar."[25] Whatever value solar provides, on a kWh-for-kWh basis, utility-scale solar provides just as much of that value as distributed solar (again, acknowledging the need to account for avoided transmission capacity, avoided distribution capacity, and avoided line loss costs—to the extent they exist). Thus, even if the "value of solar" is close to $0.35/kWh as Mr. Fine's Figure 1 suggests some jurisdictions believe, there is no reason *all* customers should have to pay more for that energy than the cost of utility-scale solar plus avoided transmission capacity, avoided distribution capacity, and avoided line loss costs (again, only to the extent such avoided costs exist). Thus, there is no legitimate cost-based reason to accept Mr. Fine's proposed Rider NMS-2 rates.

Q. Does it remain your view that the correct value of the Rider NMS-2 ancillary services component is zero?[26]

A. Yes, for all the reasons I gave in my direct testimony on this issue, the correct value of the Rider NMS-2 ancillary services component is zero. This is particularly true because, as Mr. Hornung explains, BESS cannot qualify for net metering, and Rider

[24] Fine at 15, Tbl. JF-3. For KU: $0.18198/kWh – $0.01911/kWh (transmission) – $0.00160/kWh (distribution) – $0.00785 (line losses) = $0.15342/kWh. For LG&E: $0.17895/kWh – $0.01911/kWh (transmission) – $0.00230/kWh (distribution) – $0.00409 (line losses) = $0.15345/kWh.
[25] Fine at 13, Fig. JF-1.
[26] *See, e.g.,* Hoyle at 41; Fine at 15 Fig. JF-3.

NMS-2 does not give the Companies the ability to control NMS-2 customers' inverters. Having such control might plausibly allow the Companies to obtain avoided ancillary services cost benefits; without it, such benefits simply are not possible to obtain. I would also note that, as Mr. Hornung testifies, the means by which customers might eventually volunteer to allow the Companies to control their distributed generators, particularly their inverters, will not be through Rider NMS-2 but rather through another tariff offering, likely as a DSM-EE program offering. Thus, it is not reasonable to compensate net metering customers for avoided ancillary services costs through Rider NMS-2 rates.

Q. Contrary to Messrs. Hoyle and Fine,[27] why is the appropriate value for the Rider NMS-2 avoided carbon cost zero?

A. The reason for this is perhaps the most straightforward of all the Rider NMS-2 cost components: *there is no cost of carbon to avoid*. There has not been such a cost since Rider NMS-2 rates first took effect in 2021, and there is none plausibly on the near-term horizon, certainly during the current presidential administration. To be clear, I am not opining on climate change, societal costs of carbon, or anything of the sort; I am simply observing there have not been, are not, and are not likely to be before 2030 any carbon costs the Companies have had to incur or will have to incur that Rider NMS-2 customers' production has avoided or will avoid. Therefore, the appropriate avoided cost of carbon for Rider NMS-2 purposes at this time is zero.

Q. Has any part of Mr. Fine's testimony affected your view concerning the correct value of avoided environmental compliance costs for Rider NMS-2?[28]

[27] *See, e.g.,* Hoyle at 52-53; Fine at 15, Fig. JF-3.
[28] *See, e.g.,* Fine at 15, Fig. JF-3.

A. No. As I stated in my direct testimony, the correct value of avoided environmental compliance costs for Rider NMS-2 is zero because all such costs, to the extent there are any, are already fully taken into account in the avoided energy and generation capacity cost components: avoided energy costs account for variable environmental compliance costs; avoided generation capacity costs account for generation capital costs driven by environmental regulatory changes; and incremental environmental capital projects at existing units would be unaffected by Rider NMS-2 energy exports. Thus, any non-zero Rider NMS-2 avoided environmental compliance cost component would double-count any such avoided costs and would harm other customers.

Q. Do you have any views on Mr. Fine's other Rider NMS-2 components?[29]

A. Yes; the Commission should exclude them all.

First, his reserve margin component double-counts avoided generation capacity costs, and the Commission should ignore it. The reason is simple: The Companies' generation capacity needs include having sufficient capacity to satisfy their reserve margin requirements. Thus, providing a reserve margin bonus as Mr. Fine proposes pretends that an incremental generation resource provides more capacity than it does, and the Commission should disregard it.

Similarly, the Commission should disregard Mr. Fine's proposed risk hedge value component because the avoided energy cost component fully compensates for it.[30] On Mr. Fine's own account, "Fossil fuel energy price shocks have occurred about twice per decade historically, and ratepayers are exposed to that volatility when the

[29] *See, e.g.,* Fine at 15, Fig. JF-3.
[30] Fine at 18-19.

generation is powered by natural gas."[31] Even assuming natural gas prices only go up, as Mr. Fine's "risk hedge value" appears to do, the Companies update their avoided energy cost for QF and NMS-2 rates biannually; presumably any upward gas price movements that are anything more than transitory will factor into such updates. Moreover, the Companies have significant amounts of coal generation resources and long-term coal contracts that do not move with transient gas price changes; thus, the Companies have a built-in ability to hedge short-term gas price increases to some extent by substituting coal-fired generation for gas-fired generation. Thus, there is no evidence at all such a component is justified.

Finally, I will briefly address Mr. Fine's jobs benefit analysis.[32] It shows, unsurprisingly, mounting solar on numerous rooftops requires many more people than does installing the same amount of solar in a single field as part of a utility-scale installation. That does not make it economical or beneficial. Likewise, burying a utility line by hand would take many more people much more time than would having a single skilled operator with a backhoe do the same work. The hand-digging approach would certainly increase employment, but I doubt the Commission would deem the labor expense prudent. Perhaps that is why no party has proposed a "jobs benefit" component value for Rider NMS-2 in these cases, including Mr. Fine. Therefore, in addition to the jurisdictional concerns Mr. Hornung raises, I respectfully suggest there is no economic justification for this component, and the Commission should remove it from future consideration for Rider NMS-2 compensation rates.

Q. Does this conclude your testimony?

[31] Fine at 19.
[32] Fine at Exh. JF-2.

A. Yes, it does.

VERIFICATION

COMMONWEALTH OF KENTUCKY)
)
COUNTY OF JEFFERSON)

The undersigned, **Charles R. Schram**, being duly sworn, deposes and says that he is Vice President – Energy Supply and Analysis for Kentucky Utilities Company and Louisville Gas and Electric Company and an employee of LG&E and KU Services Company, that he has personal knowledge of the matters set forth in the foregoing testimony, and that the answers contained therein are true and correct to the best of his information, knowledge, and belief.

Charles R. Schram

Subscribed and sworn to before me, a Notary Public in and before said County and State, this 25 day of September 2025.

Notary Public

Notary Public ID No. KYNP32193

My Commission Expires:

06-25-2029

JENNIFER LYNN VINCENT
NOTARY PUBLIC
Commonwealth of Kentucky
Commission # KYNP32193
My Commission Expires 6/25/2029