COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

ELECTRONIC TARIFF FILINGS OF	**)**	
LOUISVILLE GAS AND ELECTRIC COMPANY	**)**	
AND KENTUCKY UTILITIES COMPANY TO	**)**	
REVISE PURCHASE RATES FOR SMALL	**)**	**CASE NO. 2023-00404**
CAPACITY AND LARGE CAPACITY	**)**	
COGENERATION AND POWER PRODUCTION	**)**	
QUALIFYING FACILITIES AND NET	**)**	
METERING SERVICE-2 CREDIT RATES	**)**	

BRIEF OF
LOUISVILLE GAS AND ELECTRIC COMPANY
AND KENTUCKY UTILITIES COMPANY

Dated: May 24, 2024

TABLE OF CONTENTS

INTRODUCTION 1

ARGUMENT 3

I. The Commission Should Approve the Proposed SQF and LQF Rates Because No Party Has Challenged Them and Because They Are Consistent with the Commission's September 24, 2021 Final Order. 3

A. The Commission should approve the SQF and LQF rates the Companies provided in response to PSC 1-1, which appropriately account for the Commission's Final Order in the Companies' 2022 CPCN-DSM application case (Case No. 2022-00402). 4

B. The Commission Should Not Use the Avoided Energy Cost Calculated in Response to PSC 3-5, Which Would Be Inconsistent with the Commission's Final Order in the 202 Rate Cases and Would Overstate Avoided Energy Cost Because the Methodology Prescribed in the Request Results in Understated Unit Commitment Costs. 5

C. The Commission Should Not Use an NGCC Unit in Calculating Avoided Generation Capacity Cost Because the Commission Explicitly Rejected It in the 2020 Rate Cases and Because a Peaking Unit Like a CT Is the "Least-Cost Proxy Unit for Valuing Avoided Capacity." 6

II. The Commission Should Approve the Rider NMS-2 Avoided Energy and Generation Capacity Cost Components the Companies Calculated in Response to PSC 1-1 Because No Party Has Challenged Them and Because They Are Consistent with the Commission's September 24, 2021 Final Order. 7

III. There Is No Credible or Competent Evidence Supporting a Change to Either the Avoided Carbon Cost or the Jobs Benefit Rider NMS-2 Component. 9

A. The Companies were not obligated to propose changes to *any* component of Rider NMS-2's compensation rates; rather, they proposed to adjust the avoided energy and generation capacity cost components for the sake of consistency with the revised SQF and LQF rates. 9

B. There is no credible or competent evidence to support increasing the NMS-2 avoided carbon cost component as Mr. McDonald proposes, but there is evidence to support decreasing it. 10

1. Mr. McDonald's recommended range of avoided carbon costs rests on fundamentally flawed evidence concerning carbon capture and sequestration. 10

2. Other states' carbon pricing approaches are irrelevant. 13

3. Whatever their merits, social cost of carbon calculations are beyond the Commission's jurisdiction. 14

IV. Increasing the Rider NMS-2 Avoided Carbon Cost Component as Mr. McDonald Recommends Would Require the 99.7% of the Companies' Customers Who Are Not NMS-2 Customers to Overpay for NMS-2 Energy 15

CONCLUSION 18

INTRODUCTION

The Commission should approve the Small Qualifying Facility ("SQF"), Large Qualifying Facility ("LQF"), and Net Metering Service-2 ("NMS-2") rates the Companies calculated in response to Commission Staff's First Request for Information No. 1 ("PSC 1-1") in this proceeding because all of the evidence in the record of this case supports approving them. The Companies calculated these rates in full accordance with the requirements and approach taken in the Commission's September 24, 2021 Final Order in the Companies' 2020 base rate cases regarding the same rates and rate components.[1] Notably, although all parties to this case issued data requests to the Companies, *none* offered testimony challenging the rates or rate components the Companies calculated in response to PSC 1-1.

Indeed, the sole piece of intervenor testimony in this proceeding challenged two NMS-2 rate components that the Companies do not propose to change, namely the avoided carbon cost and jobs benefits components.[2] Regarding avoided carbon cost, the intervenor witness, Andrew McDonald testifying on behalf of the Joint Intervenors,[3] offered testimony that was fatally flawed in every respect: he testified on state and regional carbon pricing schemes that do not apply to the Companies;[4] he testified on social cost of carbon estimates that vary widely and are outside the Commission's jurisdiction according to Kentucky courts and the Commission's own orders;[5] and

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[1] *Electronic Application of Kentucky Utilities Company for an Adjustment of Its Electric Rates, a Certificate of Public Convenience and Necessity to Deploy Advanced Metering Infrastructure, Approval of Certain Regulatory and Accounting Treatments, and Establishment of a One-Year Surcredit*, Case No. 2020-00349, and *Electronic Application of Louisville Gas and Electric Company for an Adjustment of Its Electric and Gas Rates, a Certificate of Public Convenience and Necessity to Deploy Advanced Meter Infrastructure, Approval of Certain Regulatory and Accounting Treatments, and Establishment of a One-Year Surcredit*, Case No. 2020-00350, Order (Ky. PSC Sept. 24, 2021).

[2] Case No. 2023-00404, Testimony of Andrew McDonald (Feb. 29, 2024) ("McDonald Testimony").

[3] The Joint Intervenors in this proceeding are the Kentucky Solar Energy Society and Mountain Association.

[4] McDonald Testimony at 13-15.

[5] *Id.* at 15-16; *Electronic Joint Application of Louisville Gas and Electric Company and Kentucky Utilities Company for Review, Modification, and Continuation of Certain Existing, Demand-Side Management and Energy Efficiency Programs*, Case No. 2017-00441, Order at 28 (Ky. PSC Oct. 5, 2018):

he testified about a single, generalized, and outdated cost estimate of carbon capture and sequestration ("CCS") that has no relation to the Companies' potential cost of complying with any applicable carbon regulation (which might not involve CCS at all),[6] was far higher than the U.S. Environmental Protection Agency's ("EPA") own more recent estimate of CCS costs,[7] and was fundamentally flawed for a number of reasons, including entirely omitting the Section 45Q tax credit for CCS.[8]

Regarding the jobs benefit component, Mr. McDonald offered no evidence at all concerning what the value should be and incorrectly asserted that the Companies had failed to comply with the Commission's September 24, 2021 Final Order.[9] In reality, the Commission's Order required the Companies to "evaluate job benefits and economic development as an export rate component for LG&E/KU's next *rate case* filing," which the Companies' October 2023 tariff filing that eventually became this proceeding certainly was not.[10]

> [T]he Commission disagrees with MHC's recommendation to include the cost of non-energy factors and benefits. KRS Chapter 278 creates the Commission as a statutory administrative agency empowered with "exclusive jurisdiction over the regulation of rates and service of utilities." The Commission has no jurisdiction over environmental impacts, health, or other non-energy factors that do not affect rates or service. Lacking jurisdiction over these non-energy factors, the Commission has no authority to require a utility to include such factors in benefit-cost analyses of DSM programs. As LG&E/KU correctly note, it does not follow from their citing in 2014 of the potential avoidance of environmental compliance costs in rates in support of the construction of a 10 MW solar facility that the Commission has jurisdiction in a DSM case to require an analysis of non-energy criteria such as environmental and health factors that have no impact on rates.

See also In the Matter of: Application of Louisville Gas and Electric Company for an Adjustment of Its Electric and Gas Rates, a Certificate of Public Convenience and Necessity, Approval of Ownership of Gas Service Lines and Risers, and a Gas Line Surcharge, Case No. 2012-00222, Order at 4 (Ky. PSC Oct. 17, 2012) (*quoting Enviro Power, LLC v. Public Service Commission of Kentucky*, 2007 WL 289328 at 3 (Ky. App. 2007) (not to be published) ("'[R]ates' or 'service' … are the only two subjects under the jurisdiction of the PSC.")).

[6] McDonald Testimony at 12-13, *citing* Moch, J., Xue, W., and Holdren, J., Carbon Capture, Utilization, and Storage: Technologies and Costs in the US Context, Harvard Kennedy School, Belfer Center for Science and International Affairs, January 2022, at 3-4 and 7-8, available at https://www.belfercenter.org/sites/default/files/files/publication/Brief_CCUS_FINAL.pdf.

[7] 88 Fed. Reg. 33,301 (May 23, 2023), available at https://www.govinfo.gov/content/pkg/FR-2023-05-23/pdf/2023-10141.pdf.

[8] *See* Case No. 2023-00404, Rebuttal Testimony of Stuart A. Wilson at 3 and 5 (Apr. 4, 2024).

[9] McDonald Testimony at 17-18.

[10] Case Nos. 2020-00349 and 2020-00350, Order at 58 (Ky. PSC Sept. 24, 2021) (emphasis added).

In sum, Mr. McDonald offered no competent or credible evidence that the Commission should alter the current avoided carbon cost or jobs benefit components of the Companies' NMS-2 rates.

But more importantly, the result of implementing Mr. McDonald's recommended increase to the NMS-2 avoided carbon cost component would be to cause the 99.7% of the Companies' customers who are not NMS-2 customers to overpay for NMS-2 energy. Because *all* of the Companies approximately 3,300 NMS-2 customers have solar generation, the *most* the NMS-2 compensation rate should be is the cost of comparable utility-scale solar adjusted for any additional benefits and costs of distributed solar. As the Companies' rebuttal testimony shows, because both the current and proposed NMS-2 rates already exceed the comparable cost of utility-scale solar, there is no justification for increasing the rate further and harming customers.

Therefore, the Commission should approve the SQF, LQF, and NMS-2 rates the Companies calculated in response to PSC 1-1 because they are fully supported by the evidence in the record of this case, they are consistent with the Commission's own approach and requirements set out in its September 24, 2021 Final Order in the Companies' 2020 base rate cases, and because they are in *all* customers' best interest.

ARGUMENT

I. The Commission Should Approve the Proposed SQF and LQF Rates Because No Party Has Challenged Them and Because They Are Consistent with the Commission's September 24, 2021 Final Order.

The only rates the Commission required the Companies to update "in the fall of 2023" were their SQF and LQF rates.[11] The Companies complied with that requirement with their October 31, 2023 tariff filings that gave rise to this proceeding, calculating the avoided energy and generation

[11] *Id.* at 38.

costs for the rates in accordance with the Commission's September 24, 2021 Final Order.[12] Notably, no party to this proceeding has challenged the Companies' proposed SQF or LQF rates. Therefore, the Commission should approve the Companies' proposed SQF and LQF rates, albeit the ones the Companies provided in response to the Commission Staff's first round of data requests, which appropriately account for circumstances that changed shortly after the Companies filed their proposed SQF and LQF tariff sheets.

A. The Commission should approve the SQF and LQF rates the Companies provided in response to PSC 1-1, which appropriately account for the Commission's Final Order in the Companies' 2022 CPCN-DSM application case (Case No. 2022-00402).

As explained in the Companies' "2024-2025 Qualifying Facilities Rates & Net Metering Service-2 Bill Credit" document filed with the Companies' October 2023 tariff filings, the Companies calculated their then-proposed SQF and LQF rates assuming the Commission would approve all requested resources in the Companies' 2022 CPCN-DSM proceeding, Case No. 2022-00402.[13] The Commission ultimately granted nearly all of the relief the Companies requested in that case in an Order dated November 6, 2023, but it denied the Companies a CPCN for one requested NGCC unit.[14] Because that Order changed the resource assumptions underlying the Companies' previous avoided energy and generation cost calculations for SQF and LQF (as well as the relevant NMS-2 rate components), the Commission Staff issued a data request to the Companies in this case (PSC 1-1) asking the Companies to recalculate their proposed SQF and

[12] *See id.* at 29-37; Case No. 2023-00404, "2024-2025 Qualifying Facilities Rates & Net Metering Service-2 Bill Credit, Generation Planning & Analysis, October 2023" at 3-14 (Oct. 31, 2023).

[13] Case No. 2023-00404, "2024-2025 Qualifying Facilities Rates & Net Metering Service-2 Bill Credit, Generation Planning & Analysis, October 2023" at 3 (Oct. 31, 2023) ("In the 2024 BP, the Companies' resource plan through 2028 assumes approval of the resource portfolio the Companies proposed in Case No. 2022-00402.").

[14] *Electronic Joint Application of Kentucky Utilities Company and Louisville Gas and Electric Company for Certificates of Public Convenience and Necessity and Site Compatibility Certificates and Approval of a Demand Side Management Plan and Approval of Fossil Fuel-Fired Generation Unit Retirements*, Case No. 2022-00402, Order at 178-81 (Ky. PSC Nov. 6, 2023).

LQF rates, as well as their proposed Rider NMS-2 avoided energy and generation capacity cost components. The Companies responded with rate calculations that again conformed to the requirements of and approach taken in the Commission's September 24, 2021 Final Order in the Companies' 2020 rate cases, resulting in higher avoided energy and generation capacity costs.[15] Although the Companies' SQF and LQF rates were correct and reasonable when the Companies filed them in October 2023, the Companies recognize that the changed circumstances resulting from the Commission's Final Order in Case No. 2022-00402 required updating the proposed rates. The Companies therefore respectfully ask the Commission to approve the SQF and LQF rates contained in the Companies' Response to PSC 1-1 in this proceeding.

B. The Commission Should Not Use the Avoided Energy Cost Calculated in Response to PSC 3-5, Which Would Be Inconsistent with the Commission's Final Order in the 202 Rate Cases and Would Overstate Avoided Energy Cost Because the Methodology Prescribed in the Request Results in Understated Unit Commitment Costs.

In the Companies' response to Commission Staff's Third Request for Information No. 5 ("PSC 3-5"),[16] the Commission Staff asked the Companies to calculate avoided energy cost using a methodology inconsistent with the approach the Commission explicitly found reasonable in the Companies' 2020 rates cases,[17] namely rerunning production cost modeling assuming 80 MW of QF solar with zero cost and comparing the cost of that run to the same run without the QF solar.[18] As the Companies explained in their response, the fundamental problem with that approach is that the model, which effectively has perfect foresight, changes unit commitment in response to 80 MW of QF solar that no prudent system operator ever would precisely because system operators cannot know exactly how much energy an 80 MW solar facility will produce at every moment

[15] *See* PSC 1-1.
[16] Companies' Response to Commission Staff's Third Request for Information No. 5 (Mar. 22, 2024).
[17] Case Nos. 2020-0049 and 2020-00350, Order at 29-32 (Ky. PSC Sept. 24, 2021).
[18] PSC 3-5.

(other than at night) *ex ante*.[19] In other words, the model's perfect foresight allows it to avoid unit commitment costs no prudent system operator could avoid, resulting in artificially high avoided costs for 80 MW of QF solar. That is why the Companies' approach to calculating avoided energy cost, which the Commission explicitly found reasonable in the Companies' 2020 rate cases, is much more reliable than the PSC 3-5 approach: it runs the model without the QF energy and *then* gives the QF credit for the highest-cost energy avoided in each hour, which does not artificially avoid unit commitment costs. Therefore, the avoided energy cost the Companies calculated in response to PSC 3-5, which the Companies calculated exactly as requested in step-by-step instructions included in the request, is necessarily overstated, and the Commission should disregard it.

C. The Commission Should Not Use an NGCC Unit in Calculating Avoided Generation Capacity Cost Because the Commission Explicitly Rejected It in the 2020 Rate Cases and Because a Peaking Unit Like a CT Is the "Least-Cost Proxy Unit for Valuing Avoided Capacity."[20]

The Commission should disregard the avoided generation capacity costs the Companies calculated in response to Commission Staff's First Request for Information No. 4 ("PSC 1-4"), which asked the Companies to calculate avoided generation capacity cost using the costs of the just-approved Mill Creek Unit 5 NGCC. The Commission explicitly adopted using a simple-cycle CT as the proxy unit to calculate avoided generation capacity cost—and explicitly rejected using an NGCC unit for the same purpose—in the Companies' 2020 rate cases:

> The Commission adopts the use of a simple cycle CT as the proxy for avoided generation capacity. … [U]sing a CT as a proxy for avoided generation capacity is a well-founded methodology that has been used by utilities in Kentucky and is used across the country for valuing avoided generation capacity. … [A] CT is the best generic substitute as it is generally regarded as the least-cost capacity resource. By relating the expected costs of a new CT to the

[19] *See id.*
[20] Case Nos. 2020-00349 and 2020-003540, Order at 34 (Ky. PSC Sept. 24, 2021).

> generation of solar and wind resources, this method offers a reasonable proxy of the costs LG&E/KU's ratepayers would be able to forgo by contracting intermittent assets.
>
> … As a final determination on this specific issue, we also reject KYSEIA's proposal to use a natural gas combined cycle as the appropriate proxy resource as it is not the appropriate, least-cost proxy unit for valuing avoided capacity.[21]

All of the Commission's reasons for adopting the simple-cycle CT as the proxy for avoided generation capacity and rejecting an NGCC unit are just as valid today as they were when the Commission issued its September 24, 2021 Final Order. As the Companies stated in their response to PSC 1-4:

> [T]he cost of a CT was used in the calculation of avoided capacity cost so that the result would reflect a capacity-only value; a CT is often considered a proxy for capacity cost because it can be quickly started to meet a reliability need in any hour during the year and typically operates at low capacity factors. As discussed in Case No. 2022-00402, the Mill Creek 5 NGCC is being added primarily to replace the round-the-clock dispatchable capacity and energy provided by the retiring coal units. Because QF technologies do not have similar operating characteristics and because the avoided capacity cost is intended to be a capacity-only value, it is not appropriate to use the cost of an NGCC in the calculation of avoided capacity cost. Furthermore, it is not appropriate to use the cost of the Mill Creek 5 NGCC because QFs added over the next two years will not enable the Companies to avoid a portion of this unit.

The Commission should therefore decline to use Mill Creek Unit 5 or any other NGCC unit as the proxy avoided unit to calculate avoided generation capacity cost; rather, the Commission should approve the Companies' calculation of avoided generation capacity cost using the levelized cost of a simple-cycle CT approach as consistent with the Commission's approach and clear text in the September 24, 2021 Final Order.

II. The Commission Should Approve the Rider NMS-2 Avoided Energy and Generation Capacity Cost Components the Companies Calculated in Response to PSC 1-1

[21] Case Nos. 2020-00349 and 2020-00350, Order at 34 (Ky. PSC Sept. 24, 2021).

Because No Party Has Challenged Them and Because They Are Consistent with the Commission's September 24, 2021 Final Order.

The Commission should approve the Rider NMS-2 avoided energy and generation capacity cost components the Companies calculated in response to PSC 1-1 for the same reasons the Commission should approve the SQF and LQF rates the Companies calculated in response to PSC 1-1, namely because they are fully consistent with the Commission's September 24, 2021 Final Order and no party has challenged them. In that Order, the Commission stated concerning the NMS-2 avoided energy cost component for each of the Companies, "[T]he Commission approves an average of the 2022 and 2023 7-year avoided energy contract prices for distribution-connected [fixed-tilt solar] resources as modified and described in the QF section above … as the fair, just and reasonable avoided energy costs."[22] In this proceeding, the Companies' NMS-2 avoided energy cost component for each utility is the average of the 2024 and 2025 QF seven-year avoided energy contract prices for distribution-connected fixed-tilt solar resources, precisely in accordance with the approach the Commission prescribed.

Similarly, the Commission stated that the average of the 2022 and 2023 QF seven-year avoided generation capacity contract prices for distribution-connected fixed-tilt solar resources should be the NMS-2 avoided generation capacity component for each of the Companies.[23] In this proceeding, the Companies' NMS-2 avoided generation capacity cost component for each utility is the average of the 2024 and 2025 QF seven-year avoided energy contract prices for distribution-connected fixed-tilt solar resources, again precisely in accordance with the approach the Commission prescribed.

[22] Case Nos. 2020-00349 and 2020-00350, Order at 49-50 (Ky. PSC Sept. 24, 2021).
[23] *Id.* at 50-51.

Finally, no party to this proceeding has challenged the Companies' calculation of these NMS-2 components in the Companies' Response to PSC 1-1. Therefore, the Commission should approve the use of these NMS-2 components in the NMS-2 rates resulting from this proceeding.

III. There Is No Credible or Competent Evidence Supporting a Change to Either the Avoided Carbon Cost or the Jobs Benefit Rider NMS-2 Component.

The sole piece of intervenor testimony in this case, offered by Andy McDonald on behalf of the Joint Intervenors, addressed only two NMS-2 components, neither of which the Companies were obligated to change, neither of which the Companies proposed to change, and neither of which the Commission should change because Mr. McDonald offered no credible or competent evidence to support doing so.

A. The Companies were not obligated to propose changes to *any* component of Rider NMS-2's compensation rates; rather, they proposed to adjust the avoided energy and generation capacity cost components for the sake of consistency with the revised SQF and LQF rates.

Mr. McDonald's testimony erroneously states that the Companies "failed" to address the jobs benefit component of Rider NMS-2 in their October 2023 tariff filings "[d]espite the Commission's direction."[24] But the relevant text from the Order actually states, "The Commission directs LG&E/KU to evaluate job benefits and economic development as an export rate component for LG&E/KU's *next rate case filing*."[25] The Companies' October 2023 tariff filing was not, and is not now, the Companies' "next rate case filing"; indeed, the Companies are under a rate case stay-out obligation that precludes the Companies from having their "next rate case filing" any earlier than would be necessary for new rates to take effect on July 1, 2025.[26] Therefore, Mr.

[24] McDonald at 17-18.
[25] Case Nos. 2020-00349 and 2020-00350, Order at 58 (Ky. PSC Sept. 24, 2021) (emphasis added).
[26] Case Nos. 2020-00349 and 2020-00350, Order at 13-15, 69 (Ky. PSC June 30, 2021).

McDonald's testimony on this point is entirely incorrect, and the Companies are in full compliance with the Commission's Final Order.

More broadly, nowhere in the Commission's September 24, 2021 Final Order is there a requirement for the Companies to update *any* component of Rider NMS-2 prior to their next base rate cases, and there is no other such requirement in KRS Chapter 278, Commission regulations, or other Commission Orders. Thus, the Companies had no obligation to address Rider NMS-2 in their October 2023 tariff filings; rather, the Companies chose to do so for consistency because the avoided energy and generation capacity costs used for QF rates are also two components of the Rider NMS-2 compensation rates as prescribed by the Commission.[27] But the Companies did not attempt to adjust the other six NMS-2 components, which are most efficiently addressed in base rate case proceedings and which the Companies had no obligation to address in their October 2023 tariff filings.[28]

B. There is no credible or competent evidence to support increasing the NMS-2 avoided carbon cost component as Mr. McDonald proposes, but there is evidence to support decreasing it.

In addition to there being no requirement to change the Rider NMS-2 avoided carbon cost component in this proceeding, there is no competent or credible evidence to support increasing the component as Mr. McDonald advocates, though there is evidence to support decreasing it. That notwithstanding, the Companies do not advocate decreasing the component.

1. Mr. McDonald's recommended range of avoided carbon costs rests on fundamentally flawed evidence concerning carbon capture and sequestration.

Mr. McDonald's recommendation to establish the avoided carbon cost component of NMS-2 in the range of "$58 - $188 per ton CO_2 *starting in 2024* and then escalating annually"

[27] Case No. 2023-00404, Rebuttal Testimony of Michael E. Hornung at 1-2 (Apr. 4, 2024).
[28] *Id.* at 3.

based on his claimed all-in cost of CCS is entirely unreliable and provides no basis for changing the current NMS-2 avoided carbon cost component.[29]

First, Mr. McDonald establishes his recommendation solely on his asserted cost of CCS, effectively assuming—with no supporting analysis—that CCS will be the Companies' sole and lowest reasonable cost Greenhouse Gas Rule compliance alternative for *all* of its generation; he provides no account of how other compliance alternatives might affect avoided carbon cost or any analysis of what would be the lowest reasonable cost means of compliance.[30] In addition, he asserts that "CCS technology continues to be extremely costly and would require infrastructure that does not yet exist at-scale (such as CO_2 pipelines and storage reservoirs),"[31] which would tend to make CCS *less* likely to be the lowest reasonable cost compliance alternative, not the *sole* compliance alternative the Companies would pursue.[32] This alone suffices to undermine his proposal and the credibility of his assertions.

Second, even if CCS were the sole compliance approach available to the Companies, Mr. McDonald's asserted avoided cost range is flawed and far too high.[33] The EPA's own analysis supporting the proposed Greenhouse Gas Rule gives an all-in levelized net cost of CCS for "a representative new base load stationary combustion turbine" ranging from $19 to $44 per ton of carbon sequestered (adding $6 to $15 per MWh to the levelized cost of energy).[34] The EPA's

[29] *See* McDonald Testimony at 17.
[30] *See id.*; Wilson Rebuttal at 4-5.
[31] McDonald Testimony at 10.
[32] Wilson Rebuttal at 4-5.
[33] *See* Wilson Rebuttal at 5.
[34] 88 Fed. Reg. 33,301 (May 23, 2023):

> Even considering that the IRC section 45Q tax credits are currently available for only 12 years and would, therefore, only offset costs for a portion of a new NGCC turbine's expected operating life, the current overall CO2 abatement costs of CCS of a 90 percent capture amine-based post combustion capture system, accounting for the tax credit, are $44/ton ($49/metric ton) and the increase in the LCOE is $15/MWh. These costs assume a stable 30-year operating life, transport, storage, and monitoring costs of $10/metric ton, and do not include any revenues from sale of the CO2 following the 12-year period when the IRC section 45Q tax credit is available. An alternate costing approach is to assume all capital costs are amortized during the

range is dramatically lower than Mr. McDonald's proposed $58 to $188 per ton of sequestered carbon in large part because Mr. McDonald omitted the effect of CCS-related Section 45Q tax credits even though the paper he cites for CCS costs explicitly discusses them.[35] These credits are non-trivial: $85/ton of sequestered CO_2.[36] This significant omission causes Mr. McDonald's recommendation to be unreliable.

Additionally on the same point, the Companies' current NMS-2 avoided carbon cost component is $13.38/MWh, which is already near the maximum value of $15/MWh that EPA has said it expects for CCS.[37] It is also *more than double* the $6/MWh that is the low end of EPA's range.[38] Thus, even assuming CCS were required for all of the Companies' fossil fuel-fired generation units—which it is not—the current NMS-2 avoided carbon cost is at the high end of the CCS cost range anticipated by the very federal agency creating the potential requirement. This suggests the Companies' current NMS-2 avoided carbon cost component is too *high*, not too low, though the Companies are not proposing to change it at this time.

Third, *none* of the Greenhouse Gas Rule compliance alternatives would require implementation prior to 2032.[39] Thus, Mr. McDonald's recommendation to establish the avoided

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12-year period when tax credits are available. These tax credits are a significant source of revenue and would lower the incremental generating costs of the unit. Therefore, under the 12-year costing approach the EPA increased the assumed annual capacity factor from 65 to 75 percent. The 12-year CO2 abatement costs are $19/ton ($21/metric ton) and the increase in the LCOE is $6/MWh. These costs are for a combined cycle unit with a base load rating of 4,600 MMBtu/h with an output of approximately 700 MW. These costs could be higher for small units and lower for larger units.

[35] Moch, J., Xue, W., and Holdren, J., Carbon Capture, Utilization, and Storage: Technologies and Costs in the US Context, Harvard Kennedy School, Belfer Center for Science and International Affairs, January 2022, at 3-4 and 7-8, available at https://www.belfercenter.org/sites/default/files/files/publication/Brief_CCUS_FINAL.pdf. *See* Wilson Rebuttal at 5.

[36] Wilson Rebuttal at 5.

[37] *See* LG&E-KU Generation Planning & Analysis, 2024-2025 Qualifying Facilities Rates & Net Metering Service-2 Bill Credit (Oct. 2023) at 17; 88 Fed. Reg. 33,301 (May 23, 2023).

[38] *See id.*

[39] Wilson Rebuttal at 6. *See, e.g.*, U.S. Environmental Protection Agency, "Overview Presentation: Clean Air Act Section 111 Regulation of Greenhouse Gas Emissions from Fossil Fuel-Fired Electric Generating Units," at 8 and 13, available at https://www.epa.gov/system/files/documents/2023-

carbon cost component of NMS-2 in the range of "$58 - $188 per ton CO_2 *starting in 2024* and then escalating annually" is both disconnected from the proposed Greenhouse Gas Rule's text and practical reality.[40] The Companies will pay *zero* dollars per ton of CO_2 for CCS in 2024 both because it is impossible to construct the infrastructure to do so in this calendar year and because there is no requirement to do so.[41]

Therefore, all of the evidence Mr. McDonald provided concerning his proposed pricing range for the Companies' NMS-2 avoided carbon cost component is entirely unreliable and cannot support any change to the component. If anything, the evidence in the record of this proceeding suggests the component should decrease, not increase, though the Companies are not proposing to change it.

2. Other states' carbon pricing approaches are irrelevant.

Although certain other states may have voluntarily chosen to constrain or impose costs on carbon emissions from utilities in their jurisdictions, Kentucky clearly has not done so and is perhaps singularly unlikely to do so. KRS 278.020(1)(c) continues to support the use of Kentucky coal. In its two most recent legislative sessions, the Kentucky General Assembly has passed bills that have become law that make it more difficult, not less so, to retire any fossil-fueled electric generating unit, i.e., the enactment of KRS 278.262, 278.264, and 2024 S.B. 349 concerning the Energy Planning and Inventory Commission.[42] Thus, notwithstanding what certain other states might be doing, Kentucky is highly unlikely to voluntarily impose carbon pricing or restrictions in

05/111%20Power%20Plants%20Stakeholder%20Presentation2_4.pdf; U.S. Environmental Protection Agency, "Final Carbon Pollution Standards to Reduce Greenhouse Gas Emissions from Power Plants," at 10 and 12, available at https://www.epa.gov/system/files/documents/2024-04/cps-presentation-final-rule-4-24-2024.pdf.

[40] McDonald Testimony at 17 (emphasis added).

[41] Wilson Rebuttal at 6.

[42] *See* Hornung Rebuttal at 4.

the foreseeable future, making any other states' carbon pricing regimes irrelevant regarding the avoided carbon cost component of the Companies' NMS-2 rates.[43]

3. Whatever their merits, social cost of carbon calculations are beyond the Commission's jurisdiction.

The social cost of carbon,[44] insofar as it extends beyond costs imposed upon the Companies' operations that necessarily affect rates charged to customers, is beyond the jurisdiction of this Commission.[45] It is not a close issue; the Commission has clearly stated, "The Commission has no jurisdiction over environmental impacts, health, or other non-energy factors that do not affect rates or service."[46] In contradistinction, the lowest reasonable cost means for the Companies to comply with enforceable carbon requirements is well within the Commission's jurisdiction, but any social cost of carbon a governmental entity like the EPA might construct to justify its actions is *not* jurisdictional to this Commission. Therefore, barring legislative expansions of the Commission's jurisdiction, any entity's social cost of carbon calculation has no place in evaluating

[43] *Id.*
[44] *See* McDonald Testimony at 15-16.
[45] *See, e.g., Electronic Joint Application of Louisville Gas and Electric Company and Kentucky Utilities Company for Review, Modification, and Continuation of Certain Existing, Demand-Side Management and Energy Efficiency Programs*, Case No. 2017-00441, Order at 28 (Ky. PSC Oct. 5, 2018):

> [T]he Commission disagrees with MHC's recommendation to include the cost of non-energy factors and benefits. KRS Chapter 278 creates the Commission as a statutory administrative agency empowered with "exclusive jurisdiction over the regulation of rates and service of utilities." The Commission has no jurisdiction over environmental impacts, health, or other non-energy factors that do not affect rates or service. Lacking jurisdiction over these non-energy factors, the Commission has no authority to require a utility to include such factors in benefit-cost analyses of DSM programs. As LG&E/KU correctly note, it does not follow from their citing in 2014 of the potential avoidance of environmental compliance costs in rates in support of the construction of a 10 MW solar facility that the Commission has jurisdiction in a DSM case to require an analysis of non-energy criteria such as environmental and health factors that have no impact on rates.

See also In the Matter of: Application of Louisville Gas and Electric Company for an Adjustment of Its Electric and Gas Rates, a Certificate of Public Convenience and Necessity, Approval of Ownership of Gas Service Lines and Risers, and a Gas Line Surcharge, Case No. 2012-00222, Order at 4 (Ky. PSC Oct. 17, 2012) (*quoting Enviro Power, LLC v. Public Service Commission of Kentucky*, 2007 WL 289328 at 3 (Ky. App. 2007) (not to be published) ("'[R]ates' or 'service' … are the only two subjects under the jurisdiction of the PSC.")).
[46] Case No. 2017-00441, Order at 28 (Ky. PSC Oct. 5, 2018).

the avoided carbon cost component of Rider NMS-2 rates, making Mr. McDonald's testimony on this topic entirely irrelevant to this proceeding.

IV. Increasing the Rider NMS-2 Avoided Carbon Cost Component as Mr. McDonald Recommends Would Require the 99.7% of the Companies' Customers Who Are Not NMS-2 Customers to Overpay for NMS-2 Energy.

In addition to lacking any credible evidentiary support, any increase to the NMS-2 avoided carbon cost component would suffer from an even more fundamental flaw, namely that it would require the 99.7% of the Companies' customers who are not NMS-2 customers to overpay for the energy NMS-2 customers export.[47] This is unavoidably so because all of the Companies' nearly 3,300 NMS-2 customers have solar generation.[48] Thus, an important limiting factor to the plausible magnitude of any avoided cost component is the avoided cost of other solar generation, particularly utility-scale solar generation. In other words, if all customers are obligated to pay NMS-2 customers for solar-generated electricity exported to the Companies' grid, they should have to pay *at most* what comparable utility-scale solar electricity would cost.[49]

Ensuring comparability between utility-scale solar and NMS-2 requires determining which NMS-2 components are equally well provided by utility-scale solar. The Commission's prescribed eight NMS-2 components are: (1) avoided energy cost, (2) avoided generation capacity cost, (3) avoided ancillary services cost, (4) avoided carbon cost; (5) avoided environmental compliance cost; (6) avoided transmission cost; (7) avoided distribution cost; and (8) jobs benefits.[50] As Stuart A. Wilson testified, items 6, 7, and 8 (avoided transmission and distribution costs and jobs benefits)

[47] *See* Wilson Rebuttal at 6; Hornung Rebuttal at 5.
[48] Wilson Rebuttal at 6.
[49] *Id.* at 6-8; *id.* at 7 fn. 15 ("Utility-scale solar pricing is a *cap* on the amount customers should have to pay for the five discussed components of NMS-2 rates, not a floor.").
[50] *See, e.g., 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, Order (Ky. PSC May 14, 2021).

are not accounted for in market utility-scale solar pricing and should not be included when comparing the cost of utility-scale solar to the avoided cost components of NMS-2.[51] But the other five NMS-2 cost components would be avoided by utility-scale solar, and it is therefore appropriate to compare the sum of those five NMS-2 components to current market prices for utility-scale solar.[52]

Indeed, it is more than appropriate; it is *necessary* to perform this comparison to ensure that all customers are not overpaying for solar-generated energy exported by NMS-2 customers. Under any given set of circumstances and assumptions—including current and projected solar market prices—there is a theoretically optimal amount of solar resources for a given utility. Adding solar beyond that point would be suboptimal by definition; all other things being equal, the only reason to acquire more solar would be if one could obtain it for *less* than the market price. Of course, if a utility has a less than optimal amount of solar capacity, it should never pay more than market price to obtain it. In short, the market price of utility-scale solar should always be the *most* customers have to pay for the sum of the five NMS-2 components described above.

As Mr. Wilson testified, the current market price of utility-scale solar available to the Companies, not just the broader market, is now well established.[53] The Companies' current estimated levelized cost of energy for the Marion County and Mercer County Solar Facilities—for which the Commission granted the Companies a CPCN just over six months ago—is about $[redacted]/MWh to $[redacted]/MWh.[54] Fully accounting for the net cost of utility-scale solar energy requires subtracting the potential revenue from renewable energy certificate ("REC") sales for

[51] Wilson Rebuttal at 7.
[52] *Id.*
[53] *Id.* at 8.
[54] *Id.*

energy produced by such facilities.[55] Since January 2020, the Companies have always received at least $6.00/REC for Brown Solar RECs, and more recently they have received much more.[56] In 2023, the Companies received REC revenues averaging $21.15 per MWh for solar RECs sold from their Brown Solar Facility.[57] In January and February 2024, the Companies sold Brown Solar RECs for $27.00/REC.[58] Although the Companies are not forecasting any particular REC pricing, it is currently reasonable to expect that the Companies' levelized cost of energy from its own recently approved solar facilities will be less than $[redacted]/MWh.

Regarding Rider NMS-2, the sum of the five NMS-2 components that in total are comparable to utility-scale solar, as the Companies computed them in response to PSC 1-1, is $65.09/MWh for LG&E and $69.04/MWh for KU. There are no offsetting REC revenues to account for because, to the extent they exist, Rider NMS-2 customers receive them.[59]

Clearly, after accounting for any plausible level of REC revenues for utility-scale solar, these values show that increasing the avoided carbon cost component of NMS-2 while holding the other four components constant would result in all customers overpaying for NMS-2 exported energy relative to the cost of utility-scale solar.[60] Indeed, these values suggest that the sum of the five NMS-2 components discussed above should *decrease*, not increase, though that is not what the Companies are proposing in these tariff filings. Therefore, there is no economic rationale for increasing the NMS-2 avoided carbon cost component at all, much less to the levels Mr. McDonald has recommended.

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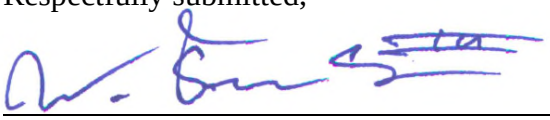
[55] *Id.*
[56] *Id.* at 8-9.
[57] *Id.* at 9.
[58] *Id.*
[59] *Id.*
[60] *Id. See also id.* at fn. 18 ("Importantly, this comparison does not consider the timing of the Companies' assumed need for capacity (2030). The Marion and Mercer County Solar Facilities were approved to meet a 2028 need for capacity. Customers would pay a discounted value today to meet a 2030 capacity need, but this discounting is ignored here to simplify the comparison.").

CONCLUSION

The Commission should approve the SQF, LQF, and NMS-2 rates the Companies calculated in response to PSC 1-1 in this proceeding. Those rates strictly follow the Commission's requirements and approach for avoided energy and generation capacity cost set out in the Commission's September 24, 2021 Final Order in the Companies' 2020 base rate cases, and they appropriately account for the changes to the Companies' generation portfolio that will result from the Commission's recent Final Order in Case No. 2022-00402. Notably, no party to this proceeding has challenged the SQF or LQF rates or offered evidence concerning them, just as no party has challenged or offered evidence concerning the NMS-2 rate components based on the QF rate calculations. And there is neither a requirement nor any credible evidence to support changing the NMS-2 jobs benefits or avoided carbon cost component. Indeed, the evidence shows that increasing the avoided carbon cost component would necessarily harm customers; customers should never pay more for the sum of the five NMS-2 components what utility-scale solar equally provides, and any increase to the avoided carbon cost component would necessarily bring about that result. Therefore, the Commission may confidently approve the SQF, LQF, and NMS-2 rates calculated by the Companies in response to PSC 1-1 as consistent with its own Orders and as being in customers' best interest.

Dated: May 24, 2024

Respectfully submitted,



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Louisville Gas and Electric Company
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CERTIFICATE OF COMPLIANCE

In accordance with the Commission's Order of July 22, 2021 in Case No. 2020-00085 (Electronic Emergency Docket Related to the Novel Coronavirus COVID-19), this is to certify that the electronic filing has been transmitted to the Commission on May 24, 2024; and that there are currently no parties in this proceeding that the Commission has excused from participation by electronic means.

Counsel for Louisville Gas and Electric Company and Kentucky Utilities Company