

COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

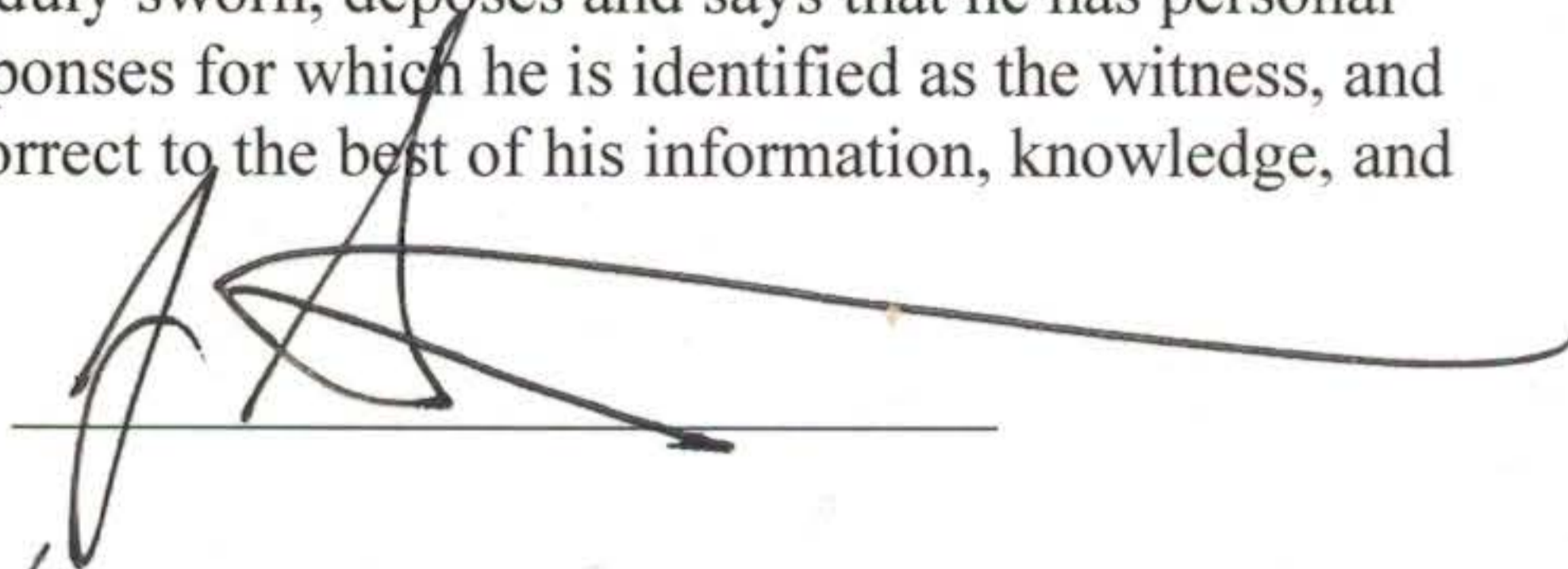
**ELECTRONIC JOINT APPLICATION OF)
KENTUCKY UTILITIES COMPANY AND)
LOUISVILLE GAS AND ELECTRIC COMPANY)
FOR CERTIFICATES OF PUBLIC) CASE NO. 2022-00402
CONVENIENCE AND NECESSITY AND SITE)
COMPATIBILITY CERTIFICATES AND)
APPROVAL OF A DEMAND SIDE MANAGEMENT)
PLAN AND APPROVAL OF FOSSIL FUEL-FIRED)
GENERATING UNIT RETIREMENTS)**

**RESPONSES OF JOINT INTERVENORS
METROPOLITAN HOUSING COALITION,
KENTUCKIANS FOR THE COMMONWEALTH, KENTUCKY SOLAR
ENERGY SOCIETY, AND MOUNTAIN ASSOCIATION TO
COMMISSION STAFF'S FIRST REQUESTS FOR INFORMATION
[DATED JULY 27, 2023]**

FILED: August 4, 2023

VERIFICATION

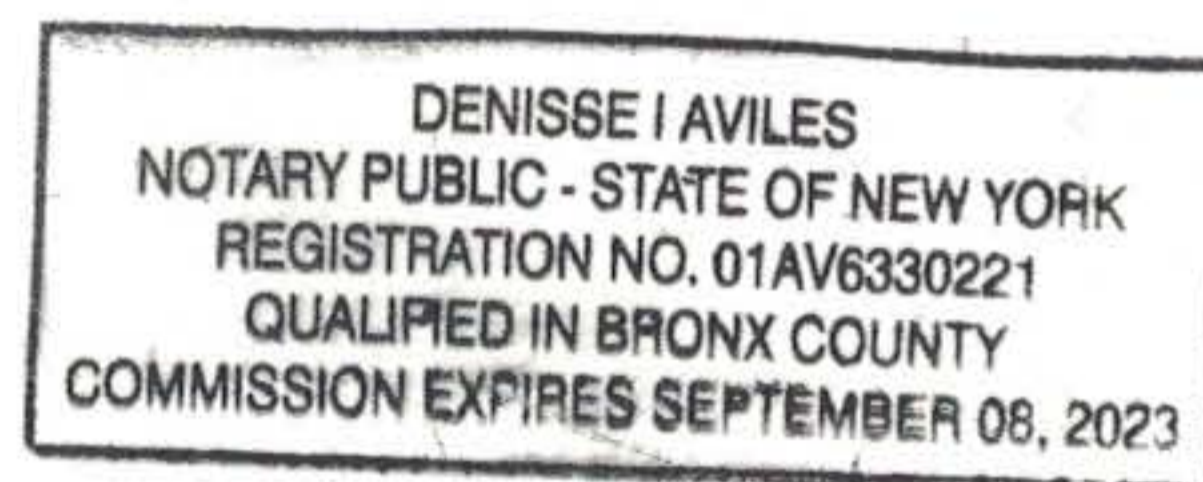
The undersigned, James Grevatt, being first duly sworn, deposes and says that he has personal knowledge of the matters set forth in the responses for which he is identified as the witness, and the answers contained therein are true and correct to the best of his information, knowledge, and belief, after reasonable inquiry.



Subscribed and sworn to before me by James Grevatt this 4th day of August, 2023.

Denisse Aviles
Notary Public

My commission expires: September 08 2023



VERIFICATION

The undersigned, Anna Sommer, being first duly sworn, deposes and says that she has personal knowledge of the matters set forth in the responses for which she is identified as the witness, and the answers contained therein are true and correct to the best of her information, knowledge, and belief, after reasonable inquiry.



Subscribed and sworn to before me by Anna Sommer this 4 day of August, 2023.


Notary Public

My commission expires: April 13 2027

JENNIFER E. GOLLINGER
Notary Public, State of New York
No. 01G06323115
Qualified in St. Lawrence County
Commission Expires April 13, 20 27

VERIFICATION

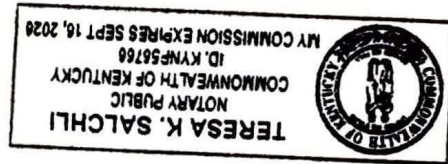
The undersigned, Andrew McDonald, being first duly sworn, deposes and says that he has personal knowledge of the matters set forth in the responses for which he is identified as the witness, and the answers contained therein are true and correct to the best of his information, knowledge, and belief, after reasonable inquiry.

Andrew McDonald

Subscribed and sworn to before me by Andrew McDonald this 4th day of Aug, 2023.

Teresa K. Salchli
Notary Public

My commission expires: 9-16-2026



**JOINT INTERVENORS METROPOLITAN HOUSING COALITION,
KENTUCKIANS FOR THE COMMONWEALTH,
KENTUCKY SOLAR ENERGY SOCIETY, AND MOUNTAIN ASSOCIATION**

RESPONSE TO COMMISSION STAFF'S FIRST DATA REQUEST

Dated July 27, 2023

Case No. 2022-00402

Question No. 1.1

Q-1.1. Refer to the Direct Testimony of Jim Grevatt (Grevatt Direct Testimony), page 10, line 13. Provide copies of analyses or studies that quantify the benefits of demand-side management and energy efficiency (DSM/EE) programs in reducing capacity requirements.

RESPONSE:

In the cited Testimony Mr. Grevatt does not discuss specific quantification of the benefits that DSM/EE programs have in reducing capacity requirements. The quantification of benefits will be entirely dependent on the makeup of the programs, the measures promoted and quantity of each, and so on. The Companies' filing, for example, proposes that in Year 7 the cumulative effect of the EE programs will be to save 874,584 MWh, and that the EE measures that provide this MWh savings will also provide 170.0 MW of reduced capacity. [Exhibit JB-1, Table 1-6. Cumulative Impacts (Energy Efficiency Portfolio) at 20].

For Staff's information, Mr. Grevatt provides a research report from the Regulatory Assistance Project titled "Energy Efficiency Participation in Electricity Capacity Markets – The US Experience." This report describes how the New England Independent System Operator ("ISO-New England") and PJM account for the capacity benefits of energy efficiency, allowing these benefits to be "bid in" to the market effectively on the same basis as generation resources. ISO-New England ensures the reliability of the EE resources by requiring bidders to follow rigorous Evaluation, Measurement, and Verification ("EM&V") protocols.

ATTACHMENT:

01_PSC_DR_1_JI_R_Attach to Q-1.1_Energy Efficiency Participation in Electricity Capacity Markets – The US Experience

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RESPONSE TO COMMISSION STAFF'S FIRST DATA REQUEST

Dated July 27, 2023

Case No. 2022-00402

Question No. 1.2

Q-1.2. Refer to Grevatt Direct Testimony, page 10, line 19. Provide copies of analyses or studies that quantify the benefits of DSM/EE programs about reliability from a grid perspective.

RESPONSE:

In the cited Testimony Mr. Grevatt does not discuss specific quantification of the reliability benefits that DSM/EE programs provide. The quantification of benefits will be entirely dependent on the makeup of the programs, the measures promoted and quantity of each, and so on. As a principle, a MWh or MW that is “saved” by a program means that it is not needed at all – once “saved” it is no longer part of the utilities’ load requirement. As such, the Companies reflect the impact of EE in their load forecasts (see, e.g., Jones Direct at 19: Figure 10: Energy Efficiency Impact – Forecast Comparison (Residential and GS)).

According to the American Council for an Energy Efficient Economy (“ACEEE”), “[e]nergy efficiency supports system reliability by reducing demand, which effectively increases the reserve margin and thereby offsets generation that otherwise would be needed. Efficiency can also function like a transmission and distribution (T&D) resource, reducing throughput needs on installed equipment. These reductions can delay, reduce, or offset the need for traditional grid infrastructure upgrades to handle increased power flows. In this way, energy efficiency can play a role alongside other distributed energy resources (DERs) to meet T&D system needs and maintain reliability.”¹ For Staff’s information, Mr. Grevatt is providing the cited ACEEE report.

ATTACHMENT:

02_PSC_DR_1_JI_R_Attach to Q-1.2_Keeping the Lights On- Energy Efficiency and Electric System Reliability.

¹ Relf, G., D. York, and M. Kushler. 2018. Keeping the Lights On: Energy Efficiency and Electric System Reliability. Washington, DC: ACEEE, p. iv. www.aceee.org/research-report/u1809.

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RESPONSE TO COMMISSION STAFF'S FIRST DATA REQUEST

Dated July 27, 2023

Case No. 2022-00402

Question No. 1.3

Q-1.3. Refer to the Direct Testimony of Anna Sommer (Sommer Direct Testimony), page 50, lines 12–18. Explain whether portfolio re-optimization is necessary for LG&E/KU to identify the least cost, least risk portfolio under the proposed new GHG rules.

RESPONSE:

Yes, it is. As Ms. Sommer noted on pages 34 and 35 of her testimony, the modeling conducted for this application assumes that the Companies' remaining coal units are kept online for the duration of the planning horizon. Retaining this capacity and simply applying a \$25 per ton charge for its CO₂ emissions does not represent a fulsome compliance strategy that is adequately determinative of least cost nor one that fully explores the potential compliance options and the dispatch implications of those compliance options.

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RESPONSE TO COMMISSION STAFF'S FIRST DATA REQUEST

Dated July 27, 2023

Case No. 2022-00402

Question No. 1.4

Q-1.4. Refer to Sommer Direct Testimony, page 50, lines 16–18. Explain in further detail why you believe LG&E/KU's approach of limiting the natural gas combined cycles (NGCCs) to a capacity factor of 50 percent is an insufficient method for identifying a least cost, least risk portfolio.

RESPONSE:

Please see Joint Intervenors' response to Companies' Q-1.14(d). In addition, Ms. Sommer believes the current proposed rule lacks clarity about when a utility could switch from baseload to intermediate operation and comply with the standards and expects that those ambiguities will be clarified by EPA.

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RESPONSE TO COMMISSION STAFF'S FIRST DATA REQUEST

Dated July 27, 2023

Case No. 2022-00402

Question No. 1.5

Q-1.5. Refer to Sommer Direct Testimony, page 28, line 7, through page 29, line 2. Without asking for a legal opinion, explain whether the two portfolios you developed, Renewables Plus MC2 Conversion and Renewables Plus One NGCC, fully comply with all of the requirements of KRS 278.264, and describe how each of the following requirements is met by each portfolio:

- a. That the replacement generating capacity for the retiring unit is dispatchable, will maintain or improve system reliability and resilience, and will maintain sufficient reserve margins;
- b. That the unit retirement will not harm utility ratepayers;
- c. That the unit retirement does not result from federal financial incentives or benefits; and
- d. That the unit retirement will result in cost savings for customers after accounting for all known direct and indirect costs of the retirement.

RESPONSE:

Joint Intervenors object to this request to the extent that it calls for legal conclusions regarding application of KRS 278.264. Subject to and without waiving that objection, Joint Intervenors' counsel responds as follows.

Joint Intervenors do not recommend that the Companies pursue either portfolio presented in Ms. Sommer's testimony. The portfolios are presented to illustrate the sensitivity of the Companies' modeling to refined inputs and settings.

- a. Both portfolios satisfy KRS 278.264(2)(a) by providing dispatchable replacement generating capacity, will maintain or improve system reliability and resilience, and will maintain sufficient reserve margins.

Kentucky law does not define “dispatchable”, does not identify specific characteristics (e.g., ramp rate, quantity), and does not specify some threshold for comparison (i.e., a replacement resource or portfolio of resources does not need to be any more or less dispatchable than the retiring unit). The law asks only for the presence of dispatchable new generating capacity. Both the portfolios modeled by EFG include dispatchable new generating capacity in the form of demand response, storage, and fossil gas resources. The solar capacity in those portfolios can be made dispatchable with a change in contracting provisions.

The EFG modeled portfolios also both improve the reliability and resilience of the electric transmission grid. The EFG modeled portfolios also maintain a loss of load expectation at or below 1 event per ten years. (Sommer)

b. Economic retirement of coal units will not harm the utility’s ratepayers. The majority of the proposed fossil retirements have been repeatedly analyzed by the Companies in recent years and found to be in the best interest of customers.

If the cost numbers for Case 8 + MC2 Gas Conversion portfolio are taken as accurate, possible economic harm to ratepayers should be closely examined by the Commission. NPV alone, however, should not be dispositive of economic harm. Additional indicia could include rate impact analyses, risk or certainty of outlook, and opportunity costs (e.g., optionality). For example, Ms. Sommer’s testimony discusses the smoothing of gas prices in the Companies’ forecasts, such that the variability in gas prices that ultimately will hit customers’ pocketbooks is muted. (Sommer)

c. The Companies’ decision to retire the fossil fuel-fired units was not the result of financial incentives or benefits offered by any federal agency. EFG’s modeling did not re-evaluate the decision to retire the Companies’ fossil fuel-fired electric generating units, and instead focused on the subsequently necessary evaluation of an optimized portfolio of replacement resources. (Sommer)

d. Given the limited extent of Joint Intervenors’ analysis, it is not clear that the Mill Creek Gas Conversion portfolio would result in cost savings for customers. For that portfolio as modeled, the present value of revenue requirements suggests some incremental cost to customers. However, the PVRR for the one NGCC portfolio is comparable to the Companies’ proposed portfolio. As modeled, and compared to the Companies’ preferred portfolio, the one NGCC portfolio may reflect a least cost option for customers, resulting in cost savings relative to identified alternatives.

As compared to the Companies’ preferred portfolio, the one NGCC portfolio modeled by EFG would pose less risk of increased direct and indirect costs. A significant portion of cost and regulatory risk in the Companies’ preferred plan results from each of the two

NGCC projects. Additionally, each of the two proposed NGCCs will have a substantially similar regulatory risk profile, and stranded asset risk profile, with an uncertain ability to continue cost-effective operation over forty years. This regulatory uncertainty and stranded asset risk with new fossil investment is known to the Companies, whose own IRP recently concluded that investment in combined cycle capacity *without* carbon capture and sequestration would be ill-advised. (McDonald)