

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 ) CASE NO. 2022-00402  
PUBLIC CONVENIENCE AND )  
NECESSITY AND SITE COMPATIBILITY )  
CERTIFICATES AND APPROVAL OF A )  
DEMAND SIDE MANAGEMENT PLAN )

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**LEXINGTON-FAYETTE URBAN COUNTY GOVERNMENT AND  
LOUISVILLE/JEFFERSON COUNTY METRO GOVERNMENT’S  
JOINT SUPPLEMENTAL REQUEST FOR INFORMATION TO THE JOINT APPLICANTS**

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In accordance with the Public Service Commission’s (“Commission”) January 6, 2023, Order, Intervenor Lexington-Fayette Urban County Government (“LFUCG”) and Louisville/Jefferson County Metro Government (“Louisville Metro”) propound the following data requests upon the Kentucky Utilities Company (“KU”) and Louisville Gas and Electric Company (“LG&E”)(collectively, “Joint Applicants” or “Companies”). The Joint Applicants shall respond to these requests in accordance with the provisions of the Commission’s January 6, 2023, Order, applicable regulations, and the instructions set forth below.

**INSTRUCTIONS**

1. Please provide written responses, together with any and all exhibits pertaining thereto, separately indexed and tabbed by each response.
2. The responses provided should restate LFUCG and Louisville Metro’s request and also identify the witness(es) responsible for supplying the information.

3. If any request appears confusing, please request clarification directly from counsel for LFUCG and Louisville Metro.

4. Please answer each designated part of each information request separately. If you do not have complete information with respect to any item, please so state and give as much information as you do have with respect to the matter inquired about, and identify each person whom you believe may have additional information with respect thereto.

5. To the extent that the specific document, workpaper, or information does not exist as requested, but a similar document, workpaper, or information does exist, provide the similar document, workpaper, or information.

6. To the extent that any request may be answered by way of a computer printout, please identify each variable contained in the printout which would not be self-evident to a person not familiar with the printout.

7. If the Joint Applicants object to any request on any grounds, please notify counsel for LFUCG and Louisville Metro as soon as possible.

8. For any document withheld on the basis of privilege, state the following: date; author; addressee; blind copies; all persons to whom distributed, shown, or explained; and, the nature and legal basis for the privilege asserted.

9. In the event any document called for has been destroyed or transferred beyond the control of the company, state the following: the identity of the person by whom it was destroyed or transferred, and the person authorizing the destruction or transfer; the time, place, and method of destruction or transfer; and, the reason(s) for its destruction or transfer. If destroyed or disposed of by operation of a retention policy, state the retention policy.

10. These requests shall be deemed continuing so as to require supplemental responses if the company receives or generates additional information within the scope of these requests between the time of the response and the time of any hearing conducted hereon.

Respectfully submitted,



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1. Refer to the response to Louisville Metro/LFUCG Initial Request for Information, Item 1, in which the Companies state that its “CO<sub>2</sub> goals are important for many reasons and reflect their expectations that economic retirements will result in a lower CO<sub>2</sub>-emitting generation resource portfolio over time.” The Companies also state in the response that, in the context of a CPCN application, instead of proposing a least-cost option it could “otherwise explain why a particular proposal may not be least cost but should still be approved.” Identify the reasons why CO<sub>2</sub> goals are important from the Companies’ perspective. Also, provide the Companies’ reasoning for determining when to select an alternative that is not least cost for approval in a CPCN application.

2. Refer to the response to Louisville Metro/LFUCG Initial Request for Information, Item 5, regarding “best practice.” Please elaborate on how the BESS system will be used – as backup power, optimization of NGCC, load shifting, etc. Do the Companies have any BESS plans that support solar generation at the distribution level of the grid?

3. Refer to the response to Louisville Metro/LFUCG Initial Request for Information, Item 6.

(a) State whether the Companies have developed plans, on an LG&E/KU specific basis, to achieve net-zero carbon emissions by 2050, with interim reduction targets of 80 percent from 2010 levels by 2040 and 70 percent by 2035. If so, provide those plans. If not, state how the Companies intend to achieve these carbon emissions goals.

(b) Further, the Companies primarily reference emission targets set by PPL in which the majority of reductions (57%) occurring between 2010 and 2021 due to the removal of

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emissions associated with PPL Energy Supply, LLC (see “PPL Corporation 2021 Carbon Emissions and Intensity Data” footnote 1, attached hereto as Exhibit 1 and available at [https://pplweb.wpenginepowered.com/wp-content/uploads/2022/07/PPL\\_CSR-2021-Carbon-Intensity\\_Data.pdf](https://pplweb.wpenginepowered.com/wp-content/uploads/2022/07/PPL_CSR-2021-Carbon-Intensity_Data.pdf)). In contrast, the Companies’ cited a reduction of 19% during the same time period in their response to Louisville Metro/LFUCG Initial Request for Information Item 12. For clarity, please provide carbon emissions and intensity goals specific to LGE-KU generation for the time periods 2010, 2021, 2035, 2040 and 2050 (the years coinciding with PPL milestones per <https://www.pplweb.com/sustainability/environment/climate-action/>, a copy of which is attached hereto as Exhibit 2.

4. Refer to the response to Louisville Metro/LFUCG Initial Request for Information, Item 13. What is the anticipated service life of the newly proposed NGCC plants?

5. Refer to the response to Louisville Metro/LFUCG Initial Request for Information, Item 14. Provide an updated status of the Companies’ request to U.S. EPA to allow the option of evaluating replacement generation for Mill Creek 2 and Ghent 2 as a Good Neighbor Plan compliance alternative now that the rule has been finalized.

6. Refer to response to Louisville Metro/LFUCG Initial Request for Information, Item 20 acknowledging that “tracts of land large enough for utility scale solar facilities are very limited in Kentucky” and noting that such tracts are likely to compete with other farm and business interests and also refer to the responses to Item 28 and 31. Please explain why the Companies’ established a 100 MWac threshold for project development.

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7. Refer to response to Louisville Metro/LFUCG Initial Request for Information, Item 23. Quantify the benefits of the proposed solar PPAs as a hedge on future fuel prices and CO<sub>2</sub> regulation risk. Further, please quantify the emission reductions associated with the proposed solar projects as a percent of the total emissions anticipated. Are the Companies committed to securing an equivalent (or greater) hedge in the event the proposed solar projects do not come to fruition?

8. Refer to response to Louisville Metro/LFUCG Initial Request for Information, Item 31 and 35. Planned solar capacity by the Companies greatly exceeds the forecast of distributed generation by customers and the response to Item 90(c) of the Commission Staff's Initial Request for Information predicts that growth of distributed generation will slow when the 1% cap defined in KRS 278.466 is reached. Considering the Companies' request to add significant solar capacity and to install generation and storage that can better accommodate renewable energy, limited land available for utility scale projects, potential CO<sub>2</sub> regulations in the future, and the Companies' goal of net-zero emissions by 2050, do the Companies still advocate for the 1% cap on distributed generation?

9. Refer to response to Louisville Metro/LFUCG Initial Request for Information, Item 41. The "midstream lighting" program described in Lana Isaacson Direct Testimony offers incentives to product distributors to stock higher efficiency models.

(a) What conditions need to be met for distributors to receive midstream lighting incentives?

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(b) Will the incentives be proportional to products installed by LGE-KU customers?

10. Refer to response to Louisville Metro/LFUCG Initial Request for Information, Item 47 and Item 48. There is a significant gap between Green Tariff Option #3 and the other programs. To illustrate the gap, please quantify the capacity installed or purchased for the available programs: Net Metering, Solar Share, Green Tariff Option #1, Green Tariff Option #2 and Green Tariff Option #3. Are the Companies amenable to lowering the minimum monthly billing load of Green Tariff Option #3 to facilitate participation?

11. Refer to the response to Commission Staff's Initial Request for Information, Item 58, regarding the drop in pressure on the Texas Gas Transmission system during Winter Storm Elliott which resulted in curtailed output from the Companies' Cane Run 7 combined cycle unit and the Trimble County simple cycle units.

a. State when the Companies anticipate completing its investigation into the events of Winter Storm Elliott.

b. State whether the Companies have reviewed the upgrades in equipment and operating procedures that Texas Gas Transmission have proposed to implement to address the failure at one of its compressor stations to provide adequate pressure during Winter Storm Elliott. Also, state whether the Companies agree that these changes will mitigate similar type of failures on Texas Gas Transmission's system occurring in the future.

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c. State whether the Companies have reached out to Texas Eastern or Tennessee Gas to discuss the impacts, if any, of Winter Storm Elliott on those two gas systems and whether there will be any changes made to either of those gas systems to address those impacts.

13. Refer to the response to Commission Staff's Initial Request for Information, Item 92(a). The question quoted the following statement from the Companies' 2021 IRP: "**the current environment** does not support the installation of NGCC without CCS **due to its CO2 emissions.**" (Emphasis added.) The Companies' response indicated that no proposal was submitted with a proposal for an NGCC with CCS because an NGCC without CCS was "economically preferred." The response, however, does not fully address the question posed. Aside from the economics of an NGCC with CCS vis-à-vis an NGCC without CCS, provide an explanation as to why the Companies accepted NGCC without CCS as a resource proposal to the RFP and are now proposing to construct NGCC units without CCS when the Companies' 2021 IRP clearly determined that NGCC without CCS could not be a reasonable resource replacement alternative given the "current environment" and "due to its CO<sub>2</sub> emissions."

14. Refer to the response to Commission Staff's Initial Request for Information, Item 98. Provide the CO<sub>2</sub> emissions rates for the proposed new NGCC units on an annual basis.

15. Refer to the response to Kentucky Coal Association's Initial Request for Information, Item 13(p). Provide an explanation as to what caused the forced outage to one of the Companies' coal units and the derates to several coal units during the course of Winter Storm Elliott.



# PPL Corporation

## 2021 Carbon Emissions and Intensity Data



### Net-Zero Goal Related Emissions

Year	Scope 1: Gross MWh of Owned Generation Includes CO <sub>2</sub> , N <sub>2</sub> O and CH <sub>4</sub> (metric tonnes of CO <sub>2</sub> e)	Scope 1: Fleet Vehicles (metric tonnes of CO <sub>2</sub> e)	Scope 1: Small Plant Stationary Fuel Combustion Sources not included in Stack Emissions (metric tonnes of CO <sub>2</sub> e)	Scope 1: Plant Mobile Equipment (metric tonnes of CO <sub>2</sub> e)	Scope 1: Fugitive SF <sub>6</sub> Emissions (metric tonnes of CO <sub>2</sub> e)	Scope 2: Electricity Use in Buildings (metric tonnes of CO <sub>2</sub> e)	Scope 2: Gas Use in Buildings (metric tonnes of CO <sub>2</sub> e)	Scope 3: Electricity Purchased for End Use Customers - LG&E and KU (MWh)	Scope 3: Electricity Purchased for End Use Customers - LG&E and KU (metric tonnes of CO <sub>2</sub> e)	Total Goal Related Emissions (metric tonnes of CO <sub>2</sub> e)
2010	60,736,086 <sup>1</sup>	48,343	2,515	4,893	114,727	89,732	18,250	1,906,442	1,597,157	62,577,296
2017	28,407,677	47,630	8,984	4,893	90,107	69,781	18,311	530,829	470,110	29,083,085
2018	29,480,129	43,256	1,097	6,459	49,513	67,316	20,058	273,821	241,199	29,873,408
2019	26,740,576	46,646	4,056	5,898	88,669	30,646 <sup>2</sup>	17,914	594,506	532,952	27,467,358
2020	24,971,324	45,524	2,297	5,157	43,616	25,712 <sup>2</sup>	16,294	624,561	541,242	25,651,166
2021	26,369,339	24,982	4,411	5,696	10,436	18,626 <sup>2</sup>	13,573	243,296	219,132	26,666,195

<sup>1</sup>2010 Scope 1 Plant Emissions is the only data point that includes PPL Energy Supply, LLC.

<sup>2</sup>LG&E and KU's emissions captured in Scope 1 Gross MWh.

### Other CO<sub>2</sub>e Emissions

Year	Scope 1: Gas Operations (metric tonnes of CO <sub>2</sub> e)	Scope 3: Electricity Purchased for End Use Customers - PPL Electric (MWh)	Scope 3: Electricity Purchased for End Use Customers - PPL Electric (metric tonnes of CO <sub>2</sub> e)	Scope 3: Gas Purchased for End Use Customers - LG&E (MMCUFT)	Scope 3: Gas Purchased for End Use Customers - LG&E (metric tonnes of CO <sub>2</sub> e)	Scope 3: Employee Commuting <sup>1</sup> (metric tonnes of CO <sub>2</sub> e)	Scope 3: Business Travel <sup>1</sup> (metric tonnes of CO <sub>2</sub> e)
2010		15,980,340	7,263,132	44,546	2,389,400		
2017	28,132	9,134,536	4,110,251	40,656	2,034,406		
2018	29,040	10,263,461	4,415,253	46,474	2,267,656		
2019	27,909	10,884,062	4,383,993	45,182	2,230,727	15,654	1,824
2020	22,204	10,705,000	4,132,207	41,589	2,002,542	11,158	613
2021	22,118	11,307,000	4,056,857	43,273	2,059,996	9,113	623

<sup>1</sup>Emission data for PPL Electric, LG&E and KU and PPL Services.

**Key Adjustments:** The 2021 reporting year does not include WPD emissions, which has contributed to one-time reductions in Scope 1: Fleet Vehicles, Scope 1: Fugitive SF<sub>6</sub> Emissions, Scope 2: Electricity Use in Buildings and Scope 2: Gas Use in Buildings. LG&E and KU Purchased Power for End Use Customers is now reported as Scope 3; emissions will remain part of PPL's 2050 goal. The 2010 baseline data remains unchanged after the sale of WPD, which had a minor contribution to overall emissions. Further adjustments are expected in 2022 resulting from the anticipated addition of Rhode Island operations.

# PPL Corporation

## 2021 Carbon Emissions and Intensity Data



### Carbon Intensity

Year	USD Million Sales (in millions)	Revenue Carbon Intensity <sup>1</sup>	Owned Net Generation <sup>2</sup> (MWh)	Gross Generation Carbon Intensity <sup>4</sup>
2010				
2017	\$7,447	0.00391	32,704,089	0.869
2018	\$7,785	0.00384	34,546,832	0.853
2019	\$7,769	0.00354	32,282,872	0.828
2020	\$7,607	0.00337	29,916,634	0.835
2021	\$5,783	0.00461	31,336,074 <sup>3</sup>	0.842 <sup>5</sup>

<sup>1</sup>Total CO<sub>2</sub>e goal-related emissions divided by revenue.

<sup>2</sup>Net Generation data excludes LG&E and KU Purchased Power. Includes 75% Trimble County Unit 1 & 2 ownership.

<sup>3</sup>Owned Net Generation includes 176,372 MWh generated by Safari Energy, LLC.

<sup>4</sup>Total CO<sub>2</sub>e associated with gross owned generation divided by net generation.

<sup>5</sup>Emissions intensity for LG&E and KU equals 0.846.

### Other Air Emissions

Year	Owned Net Generation <sup>1</sup> (MWh)	Total NOx Emissions (metric tonnes)	Total NOx Emissions Intensity (metric tonnes/owned net MWh)	Total SO <sub>2</sub> Emissions (metric tonnes)	Total SO <sub>2</sub> Emissions Intensity (metric tonnes/owned net MWh)	Total HG Emissions (kg)	Hazardous Air Pollutants Intensity (kg/owned net MWh)	Particulate Matter (metric tonnes)
2017	32,704,879	15,710	0.00048	13,499	0.00041	77	2.35E-6	1,900
2018	34,546,832	17,329	0.00050	16,698	0.00048	71	2.06E-6	2,241
2019	32,282,872	14,633	0.00045	13,487	0.00042	55	1.70E-6	1,653
2020	29,916,634	11,948	0.00040	13,194	0.00044	48	1.60E-6	643
2021	31,336,074 <sup>2</sup>	12,571	0.00040	15,225	0.00049	46	1.48E-6	605

<sup>1</sup>Net Generation data excludes Purchased Power. Includes 75% Trimble County Unit 1 & 2 ownership.

<sup>2</sup>Net Generation includes 176,372 MWh generated by Safari Energy, LLC.



Sustainability / Environment / Climate Action

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# Reshaping our energy future.

The transition to a clean energy future offers opportunities for us to further reduce our environmental impact and invest in new technologies while driving value for our customers and shareowners.

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**Wildflowers bloom along a transmission line in Kentucky.**

# Clean energy strategy

Our clean energy strategy drives an efficient transition and economic development, while maintaining affordability.

**PPL Climate Policy Principles**

**PPL Climate Assessment Report**

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## Four pillars of our strategy



### **Decarbonize our Kentucky generation fleet**

Economically retire coal generation.

Advance clean power generation and leverage future technologies.

Maintain reliability and affordability for our Kentucky customers and support state economic development.



## **Drive digital innovation and R&D to enable new technologies**

Advance new technologies through research, development and innovation, in partnership with industry and research institutions.



## **Position the grid as an enabler for clean energy resources and drive energy efficiency and demand side management**

Leverage leading performance across our utilities to expand and modernize the grid and integrate utility-scale renewables and distributed energy resources.

Advance electrification and support adoption of electric vehicles.

Promote options to reduce customer energy use.

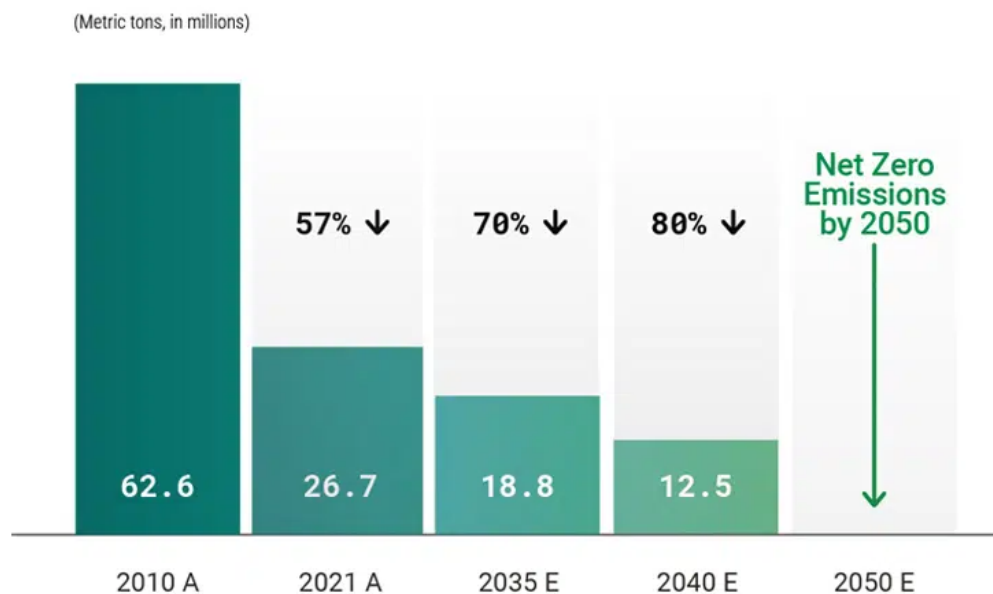


## **Decarbonize our non-generation operations**

Electrify fleet vehicles.

Reduce emissions associated with our electric and gas use, including increasing renewables consumption at PPL's company buildings.

Assess operational improvements and investments necessary to maintain emissions rates at or below industry average across PPL's utilities, including an assessment of gas distribution system operations.



## Our path to Net-Zero

PPL has set an ambitious goal to achieve net-zero carbon emissions by 2050. In addition, we are targeting a 70% reduction from 2010 levels by 2035 and an 80% reduction by 2040.

We continue to make progress toward our goal, and we are on track to achieve our interim targets. Through 2021, we reduced carbon emissions nearly 60% from 2010 levels.

[Access our carbon emissions and intensity data](#)

[Download our climate assessment report](#)

## Economically transitioning our Kentucky fleet

Exhibit 2

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Decarbonizing our generation fleet in Kentucky is a critical component to achieving net-zero emissions. We continue to assess the dynamic energy landscape to identify opportunities to economically support this transition and we have committed not to burn unabated coal by 2050.

[Read LG&E and KU's Integrated Resource Plan](#)

# 2,000MW

We expect to retire 2,000 megawatts of coal generation over the next 15 years.

# 1,500MW

At least 1,500 MW is planned for retirement by 2028.

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## Enabling clean energy resources and R&D

We're leading the way in deploying smart grid technology and automation necessary to drive deep decarbonization and accommodate more renewable energy. In addition, we're investing in clean energy research and development to deliver on our goal of net-zero carbon emissions by 2050 while preserving energy reliability and affordability.



More about innovation at PPL

# \$50M

**Invested in Energy Impact  
Partner's global investment  
platform** to help drive commercial-  
scale solutions needed to deliver  
deep, economy-wide  
decarbonization.

[Find out more](#)

# 100+

**Participating in more than 100  
research projects**, steering key  
industry partnerships and  
collaborating with industry and  
academia to enable  
decarbonization.

[Technology & Research](#)

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## Electrification and Decarbonization

We are working to make system enhancements necessary to meet electricity demand over the long term and support increased electrification of the economy, including greater adoption of electric vehicles.

More on electrification

# 100%

100% of all **PPL's light-duty vehicles** to be electrified by 2030.

# ~30%

Targeting about **30% decrease in energy use** in buildings decrease by 2030.

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## Our Strategy in Action

See our clean energy strategy at work across the PPL family of companies.



Proven expertise and innovation

## powering a responsible path to net-zero



## Appliance Recycling Program Receives Federal Recognition



## Helping customers meet their sustainability goals



## Delivering reliable power – responsibly



### **About Us**

- Who We Are
- Our Vision
- Our Companies
- Leadership Team
- Awards & Recognition
- Our Heritage

### **Innovation**

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- Renewable Energy
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- Electrification

### **Investors**

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### **Sustainability**

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### **Communities**

- Empowering Communities
- Volunteerism
- Giving
- Support For Education
- PPL Foundation

### **Careers**

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