

# LG&E and KU, EPRI, University of Kentucky, begin industry-leading research

*Research will explore potential for utility-scale carbon capture from natural gas at Cane Run Generating Station*

LOUISVILLE, Ky., March 31, 2023 [/PRNewswire/](#) -- Ground-breaking energy research that could lead to the first-of-its-kind deployment of carbon-capture technology at a natural gas combined-cycle power plant is now underway in Kentucky. The research involves collaboration among PPL Corporation subsidiaries Louisville Gas and Electric Company and Kentucky Utilities Company (LG&E and KU); independent, non-profit energy R&D institute [EPRI](#); and the University of Kentucky (UK). Engineering, construction and project management company Bechtel and the University of Michigan are also participating.

The carbon capture research project, funded primarily by a \$5.8 million grant from the Department of Energy in 2022, involves LG&E and KU's natural gas combined cycle (NGCC) facility, located at Cane Run Generating Station in Louisville, Ky. The NGCC, known as CR7, has been in operation since 2015 and is one of just two NGCCs in the country awarded DOE research funding. The project entails a front-end engineering design (FEED) study to evaluate the feasibility and approximate cost to pilot and deploy the University of Kentucky-developed carbon-capture technology on CR7 to capture at least 95% of carbon dioxide from gases exiting the unit's stacks.

CR7 is representative of NGCC power plants in the Midwest and Midsouth where geographical storage for carbon dioxide is limited. The results of the CR7 project are expected to yield valuable information relevant to retrofitting a carbon-capture process on other NGCC units.

The study will lay the groundwork for a full-scale, 10-to-20-megawatt carbon capture sequestration pilot unit at Cane Run. If the unit is deployed as proposed by the group's FEED study, it would be the first of its kind in the world.

"As part of our commitment to achieve net-zero carbon emissions by 2050, decarbonization technology is a key focus area for our utilities and others across the energy industry with similar goals," said LG&E and KU President John R. Crockett. "We've been involved in leading carbon capture research for nearly 20 years and believe the experience we bring, along with our partners' innovation, will play a critical role in advancing this technology."

"Demonstrating emerging technology at scale is a critical step in the journey from concept to commercialization," said Neva Espinoza, vice president, Energy Supply and Low-Carbon Resources at EPRI. "This foundational research has the potential to shed new light on the potential for carbon capture technology in Kentucky and help inform clean energy development around the world."

"This research will ultimately enable us to complete all of the assessments needed, scale up our existing carbon capture technology and move to a fully-functioning, utility-scale operation that would be able to sell the carbon captured to one or more local businesses for their needs, or permanently store it underground," said Kunlei Liu, associate professor in the Department of Mechanical and Aerospace Engineering at UK.

The FEED study will take place from now through mid-2024 and involves pre-FEED research by the University of Kentucky focused on the project scope and design among other factors; the FEED itself conducted by Bechtel; commercial, environmental and economic assessments performed by EPRI; and a life-cycle assessment performed by the University of Michigan.

This federal award for the study is the largest won by LG&E and KU since 2011, when the same team — UK, EPRI, and LG&E and KU — won an award for a carbon capture pilot at the utilities' E.W. Brown Generating Station.

The research is also another milestone in the longtime partnership between UK, and LG&E and KU. The two have partnered on carbon capture research since 2005; built and operate Kentucky's largest carbon capture system at E.W. Brown since 2014; and, in partnership with the utilities' parent company, PPL, and the PPL Research and Development Center based out of KU headquarters in Lexington, Kentucky, continue to innovate in decarbonization, hydrogen and other technologies.

Learn more about LG&E and KU's innovative projects at [lge-ku.com/research](https://lge-ku.com/research).

*About LG&E and KU:*

*Louisville Gas and Electric Company and Kentucky Utilities Company, part of the PPL Corporation (NYSE: PPL) family of companies, are regulated utilities that serve more than 1.3 million customers and have consistently ranked among the best companies for customer service in the United States. LG&E serves 333,000 natural gas and 429,000 electric customers in Louisville and 16 surrounding counties. KU serves 566,000 customers in 77 Kentucky counties and five counties in Virginia. More information is available at [www.lge-ku.com](https://www.lge-ku.com) and [www.pplweb.com](https://www.pplweb.com).*

*LG&E and KU, along with parent company PPL, are dedicated to empowering customers and advancing Kentucky's clean energy future while preserving affordability and reliability. The utilities are committed to achieving net-zero carbon (GHG) emissions by 2050, with interim reduction targets of 70% from 2010 levels by 2035 and 80% by 2040. Since 2005, LG&E and KU have partnered on ground-breaking industry research including decarbonization and hydrogen technology. The utilities operate Kentucky's largest carbon capture system, Kentucky's first and largest utility-scale solar facility and Kentucky's first and largest utility-scale energy storage system. Find out more information about LG&E and KU's innovation at [lge-ku.com/research](https://lge-ku.com/research).*

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