

Kentucky Power Plant Becomes Energy Storage Testing Ground

Electric Power Research Institute to test battery technologies at LG&E and KU's E.W. Brown Generating Station

(LOUISVILLE, Ky.) — Meeting energy demands of the future means exploring the viability of various technologies today. In its latest research project, Louisville Gas and Electric Company and Kentucky Utilities Company is launching a new Energy Storage Research and Demonstration Site at its E.W. Brown Generating Station near Harrodsburg in Mercer County.

The project, which was developed in collaboration with the Electric Power Research Institute (EPRI), became operational in January 2017 and will allow the utilities to develop, test, and evaluate the potential benefits of utility-scale battery technologies, and investigate operating needs and associated costs. Additionally, researchers will be able to use the site to advance control technologies, increase value gained from storage, and determine solutions to integration challenges for energy storage on the electric grid.

The site includes three testing bays for energy storage technologies, each able to house up to one megawatt of storage, resulting in a total hosting capacity of up to three megawatts of energy storage. The first energy storage system installed on the site consists of a one megawatt lithium-ion battery system, a one megawatt smart power inverter and an advanced control system. This storage system was custom-engineered for the site and can support a number of advanced control functions and use cases during testing.

“The Energy Storage Research and Demonstration Site is unique among other sites in the utility industry because it provides us a testbed for evaluating multiple utility-scale energy storage technologies at the same time,” said Dr. David Link, manager of Research and Development for LG&E and KU.

Testing multiple storage technologies at one time will allow researchers to assess how the individual systems operate and any potential grid integration challenges as the systems work together, simulating these technologies operating at the same time on the electric grid.

The site is also designed to be collaborative, creating a “virtual lab” for use by other utilities working with EPRI to address potential gaps associated with utility-scale energy storage, while also providing a platform to share knowledge gained across the utility industry.

“Energy storage is a viable way for grid operators to enhance resiliency, manage costs, and optimally incorporate distributed energy resources on an integrated grid,” said Mark McGranaghan, vice president of Distribution and Energy Utilization at EPRI. “The LG&E and KU testbed will provide valuable data on the performance of energy storage that will help utilities across the country make better decisions about their own systems as well as provide information to other stakeholders.”

The testbed is part of EPRI’s Integrated Grid Initiative Pilot Projects, through which utilities across the country are collaborating in R&D projects to understand the benefits, costs, and technical challenges of integrating new, distributed energy resources, with more traditional, centralized generation. The team expects R&D on the LG&E and KU testbed to last about three years. For more information about EPRI’s Integrated Grid Initiative, visit integratedgrid.epri.com.

In addition to EPRI as the primary project collaborator, equipment suppliers for the project include LG Chem, Dynapower and Greensmith Energy.

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Louisville Gas and Electric Company and Kentucky Utilities Company, part of the PPL Corporation (NYSE: PPL) family of companies, are regulated utilities that serve nearly 1.3 million customers and have consistently ranked among the best companies for customer service in the United States. LG&E serves 322,000 natural gas and

403,000 electric customers in Louisville and 16 surrounding counties. KU serves 546,000 customers in 77 Kentucky counties and five counties in Virginia. More information is available at www.lge-ku.com and www.pplweb.com.

About EPRI

The Electric Power Research Institute, Inc. (EPRI, www.epri.com) conducts research and development relating to the generation, delivery and use of electricity for the benefit of the public. An independent, nonprofit organization, EPRI brings together its scientists and engineers as well as experts from academia and industry to help address challenges in electricity, including reliability, efficiency, affordability, health, safety and the environment. EPRI's members represent approximately 90 percent of the electricity generated and delivered in the United States, and international participation extends to more than 30 countries. EPRI's principal offices and laboratories are located in Palo Alto, Calif.; Charlotte, NC; Knoxville, Tenn.; and Lenox, Mass.

For further information: call the LG&E and KU media hotline at 502-627-4999.

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