



## Battery Storage Case Study: Duke Energy Progress

To meet rising electricity demand in Duke Energy Progress' West Region of North Carolina, the company announced in 2015 a long-term solution to cost-effectively serve its customers. The resulting Western Carolinas Modernization Plan balances public input, environmental impacts and the need to provide safe, affordable and reliable electricity.

As part of the plan, Duke Energy committed to installing at least five megawatts (MW) of energy storage, and in late 2017, the utility announced it would spend \$30 million on two utility-scale battery energy storage systems totaling 19 MW. These systems will be the largest in North Carolina and are expected to come online in 2019.

A smaller battery installation in the region went online in 2017 to provide energy to a remote emergency communications tower atop Mt. Sterling. The project combined a 10-kilowatt solar installation with a fluidic 95-kilowatt-hour zinc-air battery.



The first larger project will consist of a 9-MW lithium-ion battery system that will be installed at a substation in the Rock Hill community in Asheville. The system will provide frequency regulation and other support services to help the grid run more efficiently. A second 4-MW lithium-ion battery system in Madison County will enhance electric reliability in the town of Hot Springs and aid the overall electric system. A solar facility may be added in the future to work in conjunction with this battery system.

**"Duke Energy has experience with many battery storage projects around the nation," said Robert Sipes, vice president of Western Carolinas Modernization for Duke Energy. "Western North Carolina is an ideal spot to use this technology to serve remote areas, or where extra resources are needed to help the existing energy infrastructure."**

Beyond these two sites, Duke Energy is planning additional battery storage projects in the region. The utility has been partnering with local stakeholders, including the Energy Innovation Task Force (EITF), to discuss future energy needs. The EITF is a collaboration between the city of Asheville and Buncombe County. One focus of the group has been looking toward emerging technologies, such as battery storage.

Given Duke Energy's experience with battery storage projects and the goals of the EITF, the technology was a great fit for the region. The battery systems produce little noise and no emissions and will help make a more reliable and resilient grid.