# Microgrid Guide

*Butler Farms*

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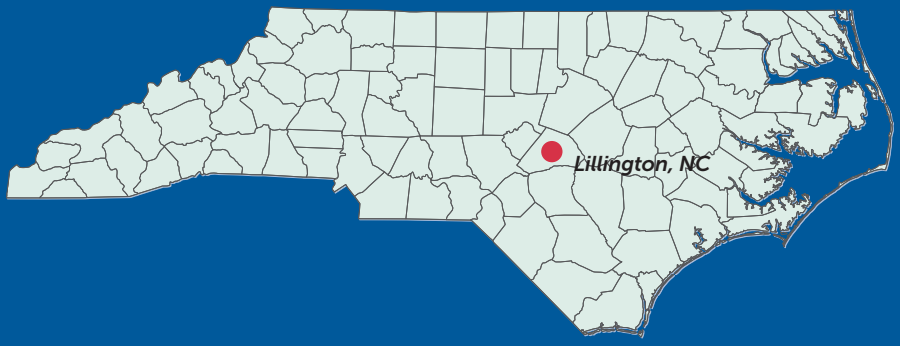
v11, 2018

## A microgrid at Butler Farms




**A microgrid** is an electric system that combines local energy resources and control technologies to provide power to a defined area. Microgrids typically remain connected to the main grid but can also operate independently.

**South River Electric Membership Corporation** and its power supplier, **North Carolina Electric Membership Corporation**, are partnering with **Butler Farms**, a sustainability-focused hog farm in Lillington to develop a local microgrid.

This innovative project brings together resources owned by the farm with components owned by NCEMC to establish a unique partnership that benefits rural North Carolina by leveraging opportunities from two important industries—agribusiness and energy.

During normal conditions, the microgrid will connect to South River EMC's distribution system to supplement and diversify traditional power resources. During outages, it can also operate in island mode to power Butler Farms and surrounding homes.

## The purpose of the Butler Farms microgrid:

Integrate local renewable energy resources, including solar and biogas, with energy storage to supplement traditional power sources, diversify the electric grid and provide environmental benefits.

Improve the reliability of the electric system and farm operations by avoiding prolonged outages after storms or other events that interrupt grid power. The microgrid will also serve as a model for the integration of member-owned power generation that benefits the entire cooperative membership.

Explore the potential benefits of using microgrids as a demand response resource.

Serve as a case study for how agriculture and electric utilities—two of North Carolina's most important industries—can work together to promote sustainability and improve quality of life.

Provide a learning opportunity that will help discover future uses for microgrids and their components.

## Butler Farms Microgrid Components

***Resources owned by the farm:***

*20kW solar panels*

*100kW diesel generator*

*185kW biogas generator*

***NCEMC-owned:***

*250kW/735kWh battery system*

*Controller to integrate and manage all components*