RESEARCH TRIANGLE CLEANTECH CLUSTER™

» Transformation Through Collaboration

MEMBER STORIES OF IMPACT

The Rose Acre Farms microgrid serves as an example of how North Carolina's electric cooperatives are working toward a shared vision for a brighter future that includes reliable, affordable electricity, sustainability goals and a commitment to supporting cooperative communities.

Tideland EMC
Real People. Real Power.

NC Electric Cooperatives
Your Touchstone Energy® Cooperatives

ROSE ACRE Farms

CHALLENGE

Sustainability & Reliability

Rose Acre Farms supplies Walmart, whose sustainability goals are defined in Project Gigaton, which commits to a one billion metric ton reduction of CO2e emissions in its global value chain by 2030. As a part of Walmart's supply chain, Rose Acre Farms sought to increase its percentage of emissions-free energy. Additionally, like most large producers and manufacturers, the farm was also concerned with ensuring a reliable supply of electric power to maintain consistent operations.

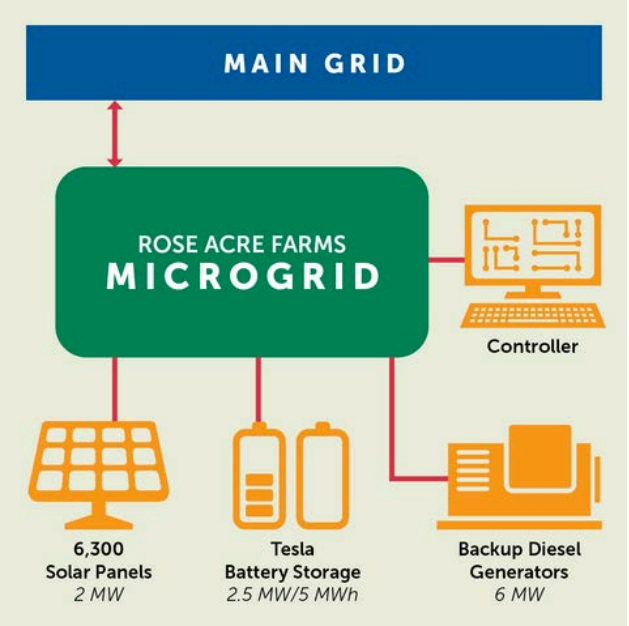
SOLUTION

Cleantech Meets Agriculture

Tideland Electric Membership Corporation, an electric cooperative serving six coastal N.C. counties, and its power supplier, North Carolina Electric Membership Corporation (NCEMC), partnered with Hyde County egg producer Rose Acre Farms to develop an innovative agricultural microgrid designed to enhance reliability and resilience at the production facility.

Headquartered in Indiana, Rose Acre Farms is the second largest egg producer in the U.S., and its Hyde County location, which is served by Tideland EMC, is the largest private employer in the county.

Phase I of the Rose Acre Farms Microgrid was completed in 2022 following the installation of a 2 MW solar array and a 2.5 MW Tesla battery pack that allows the energy generated by the panels to be stored and dispatched when needed. Phase II of the project saw the installation of a microgrid controller, expanding the project's capabilities to include the utilization of the facility's existing backup diesel generators.



Graphic from Carolina Country

IMPACT

Resiliency, Grid Diversity...and Eggs!

The Rose Acre Farms microgrid typically remains connected to the main grid, adding resiliency and diversity to traditional power resources. But should an outage occur, the microgrid can also operate in "island mode," keeping egg production online. The solar production offsets about a third of the energy consumed by the farm, stemming from the installed 2 MW of solar capacity, 2.5 MW of energy storage capacity and 6 MW of backup diesel generators.

During Winter Storm Elliott, the Rose Acre Farm microgrid resources were dispatched to support grid stability during a time of unprecedented demand. The partnership between two of the state's most important industries demonstrates that agriculture and electric utilities can work together to improve power reliability while achieving sustainability goals.

ABOUT US

RTCC

The Research Triangle Cleantech Cluster (RTCC) accelerates growth and leadership of the cleantech economy, leveraging the unique concentration of industry, academic, and government leaders in the Research Triangle to create benefits through innovation, deployment, and talent in the region, North Carolina, and beyond.

NCEMC

North Carolina's 26 not-for-profit electric cooperatives are powering a brighter future for 2.5 million people and rural communities statewide. Led by local consumers, electric cooperatives are working together to deliver value and expand energy services that benefit members.