

Agricultural Microgrid

Rose Acre Farms

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

Tideland Electric Membership Corporation, an electric cooperative serving six coastal NC counties, and its power supplier, **North Carolina Electric Membership Corporation**, 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.

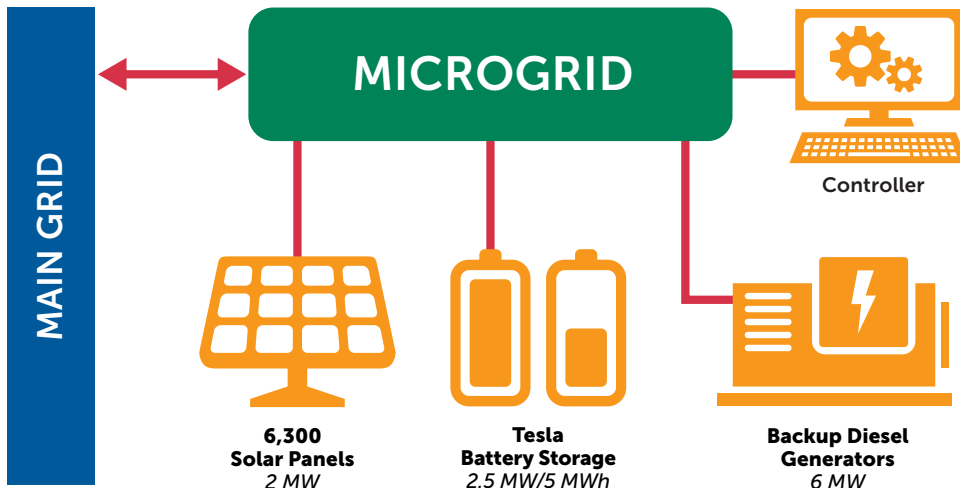
Headquartered in Indiana, Rose Acre Farms is the second largest egg producer in the U.S., and its Hyde County location, which is served by Tideland EMC, is the largest private employer in the county.

Egg Production Facility



The microgrid, which includes a 2 MW solar array, 2.5 MW battery energy storage system and backup diesel generation, typically remains connected to the main grid, adding diversity to traditional power resources. However, the microgrid can also operate in “island mode” during a grid outage to ensure uninterrupted egg production.

The connected battery allows the energy produced by the solar arrays to be stored and then dispatched to the grid when needed, providing for greater resilience and flexibility during times of peak demand or a loss of power to Rose Acre Farms.



Benefits to Rose Acre Farms include:

- Continued egg production in the event of a grid outage.
- On-site renewable energy generation to support Rose Acre Farms' corporate sustainability goals.
- The solar production is expected to offset about one-third of the total energy consumed by the farm.

The partnership between Tideland EMC, North Carolina EMC and Rose Acre Farms demonstrates that agriculture and electric utilities—two of the state's most important industries—can work together to improve power reliability while achieving sustainability goals.