





## Randolph EMC connects solar electric arrays at N.C. Zoo

**R**andolph EMC in December interconnected the largest solar electric system in North Carolina to its electrical grid. The three new photovoltaic, roof-mounted solar arrays, measuring 75 by 40 feet each, are located near the North America entrance of the North Carolina Zoo in Asheboro.

The electricity generated flows directly into Randolph EMC's system. The zoo is likely to use much of the power ultimately, given its electrical demand and close proximity.

In most places, solar electric technology is not profitable to build on a large scale unless backed by subsidies. Randolph EMC will purchase the power produced by the project at a price equivalent to the avoided cost of wholesale power under a contract with Carolina Solar Energy, which developed the project. Carolina Solar Energy, based in Durham, will receive an additional subsidy of 18 cents per kilowatt-hour under a renewable energy certificate contract with NC GreenPower, a nonprofit organization in Raleigh that promotes alternative energy. BB&T Equipment Finance Corp. is financing the solar system with a 5-year, \$847,000 lease, according to

Richard Harkrader, owner of Carolina Solar Energy.

Harkrader, a leading solar developer in the state, estimates that the 104-kilowatt solar system's annual production will be 130,000 kilowatt-hours per year, or enough power for 11 to 13 houses at average use in North Carolina. Harkrader faced hurdles over insurance, making the solar tax credits feasible and other issues during the four-year project, but says the next project will be easier. "The way to get solar prices down is to build the businesses and infrastructure here (in North Carolina) so we have companies that can economically meet solar demand," he says.

Randolph EMC, the Touchstone Energy cooperative that serves the zoo and surrounding counties, supports development of practical, renewable energy technology. "This project represents Randolph EMC's commitment to explore new technologies and work with private industry to develop solutions for alternative energy resources," said Fred Smith, key accounts manager at the cooperative, based in Asheboro.

"It took a lot of innovation, and we're



*The three new solar arrays at the North Carolina Zoo are complete and generating power. One array and shelter is obscured in this view.*

happy that we've all come together in this collaborative project," says Mary Joan Pugh, chief of staff at the zoo. Three new picnic pavilions are underneath the solar arrays. The zoo, which has won awards for its ongoing environmental practices, plans a live readout display that shows visitors how much power the solar system is generating.

Pugh said she appreciated Randolph EMC's willingness to break new ground. The zoo relied on the co-op's technical expertise, she said. "Randolph EMC is great. When we have an idea, they're always willing to listen to us."

—Karen Olson House