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Watauga Commissioners Pass Wind Ordinance

Story by Kathleen McFadden

On Monday, August 7, Watauga County became the first county in North Carolina to pass an ordinance to regulate wind energy systems. The ordinance establishes permitting requirements for small- and large-scale wind turbine installations and incorporates changes suggested by County Attorney Andrea Capua to resolve ambiguities in the ordinance draft presented at the commissioners' July 18 meeting.

Under the ordinance, small-scale systems for residential use are limited to a rated capacity of not more than 20 kW, but multiple systems with a capacity of greater than 20 kW can be installed on farms and still be defined as small systems. The adopted ordinance, unlike the previously proposed draft, clearly spells out this farm exemption and states that such installations are not subject to the county's High Impact Land Use ordinance.

The county planning staff can permit small-scale installations; the Planning Board will review permit applications large wind energy systems that are subject to more stringent requirements than small-scale onsite power generation systems.

Regulations for small wind energy systems appropriate for residential use limit the wind turbine height to a maximum of 135 feet and require a setback from surrounding property lines of the same amount and a setback from inhabited structures on adjacent properties of 1.5 times the turbine height. A building permit is required to erect the system, and standard drawings of the structure, including the tower, base and footings, must be submitted to the Planning and Inspections Department, along with standards for ice/wind loading.

Small wind energy systems must comply with FAA regulations, and no small wind energy system can be installed until the permit applicant provides evidence that the utility company has been informed of the customer's intent to install an interconnected customer-owned generator. Off-grid systems are exempt from this requirement.

Under the ordinance, turbine owners are not allowed to install signs, pictures or writing that can be construed as advertising on the turbine, nor can owners attach flags, streamers or decorative items.

The cost of the permit is yet to be determined.

According to the American Wind Energy Association a 10-kW wind turbine can generate about 16,000 kWh annually, and the average U.S. household consumes about 10,000 kWh of electricity each year. The Watauga County ordinance allows the installation, subject to the permit requirements, of a 20-kW system.

Learn About Wind Power at ASU Workshops

The public can learn more about small-scale wind power at three upcoming workshops sponsored by Western North Carolina Renewable Energy Initiative (WNCREI) at Appalachian State University.

The fall workshops address systems suitable for homes, farms or businesses. All workshops are from 9:00 a.m. to 4:00 p.m. unless otherwise noted. For more information about any of the workshops or to register, click to wind.appstate.edu or call 828-262-7333.

Introduction to Small Scale Wind Energy will be held Saturday, September 9, at the Wind Energy Research and Demonstration facility on Beech Mountain. The cost is $40 for students and $90 for others. Participants will learn about characteristics of a good wind site, how to assess your wind resource, siting a wind turbine, the various types of residential wind turbines on the market, towers and other system components, and regulations and incentives. The workshop includes a tour of the Beech Mountain facility that has six turbines.

WNCREI staff, and faculty and staff from Appalachian's appropriate technology program will lead the program.

Wind Resource Assessment will be held Friday evening, September 22, and Saturday, September 23, on the Appalachian campus. Saturday's itinerary includes a field trip. The cost is $70 for students and $150 for others. Participants will receive classroom instruction from WNCREI staff on the fundamentals of wind resource assessment and install a 20-meter meteorological tower as part of WNCREI's Anemometer Loan Program.

Small Scale Wind Energy with Southwest Windpower will be held Saturday and Sunday, October 21 and 22, at the Wind Energy Research and Demonstration facility on Beech Mountain. The cost is $70 for students and $150 for others. Southwest Windpower is the world's leading manufacturer of small wind turbines. Participants will learn the basics of residential wind systems, tour SWWP products and install SWWP's newest product, the Beta 1.8, described as "the first affordable energy producing appliance for homes and businesses." Workshop leaders will be SWWP's Josh Levinson, North American sales director, and Jay Yeager, technical services manager. More information is available at www.windenergy.com.