

March 8, 2008

**Public Forum on Wind Energy
Lenny Bernstein**

On March 7, Don Walton and I attended the Public Forum on Wind Energy at the NC Arboretum organized by the NC Wind Working Group. The NC Wind Working Group is one of a number of similar groups started by the U. S. Department of Energy to educate the public on wind energy issues. The head of the group is Prof. Dennis Scanlin, from the Appalachian State University Department of Technology, but it appears that most of the organizational work is done by Brent Summerville, a young engineer in that department.

The forum was well attended – my guess is that there were about 200 people present at the peak. Since the forum continued at least three hours, I, and the majority of people, left before it ended. With the exception of representatives of the John Locke Society, a libertarian group that opposes most government programs, the audience was generally in favor of wind energy, though some questioned its application on NC mountain ridges.

The forum began with presentations by Prof. Scanlin and Ann Waling from Acciona Energy, N.A. the North American branch of a Spanish company developing utility-scale wind energy projects. After a break, they were joined by a panel for a question and answer and discussion session. The panel was composed of:

Matt Cooper – Appalachian Institute for Renewable Energy;
Ole Sorenson – Solar Dynamics, a company that installs small-scale solar and wind energy systems;
Curtis Smalling – NC Audubon Society;
Paul Quinlan, NC Sustainable Energy Association; and
Bob White – AES, another developer of utility-scale wind energy projects;

There was explicit recognition that siting of wind facilities must take the scenic and recreational values of ridgelines into account. The Blue Ridge Parkway was mentioned several times as a location that would be unsuitable for wind development. I did not hear a specific mention of the A.T., but the strong implication was that it, too, would be unsuitable. However, since the presentations were strongly pro-wind development, arguments were presented minimizing the negative impacts of wind energy.

Three types of wind turbines were discussed: individual-scale turbines, typical about 10 kW; community-scale turbines, typically about 100 kW; and utility-scale turbines, typically less than one MW. Most of the discussion focused on individual- and community-scale turbines. In his presentation, Prof. Scanlin showed computer simulations of what these two types of turbines would look like from a Blue Ridge Parkway overlook 1.25 miles away. It was impossible to see the individual-scale turbine, and the community-scale turbine was barely visible. Since this was a simulation, it is impossible for me to judge the validity of the presentation. On noise, the argument was made that when the wind is high enough for the sound of the wind turbine to be noticeable, the noise of the wind through trees, etc. completely covers it. This position was strongly support by a Prof. Louis Mes, who recently installed a 10 kW turbine near his house outside Canton. He has also installed solar energy units on his house. (Parenthetically, Prof. Mes appears to be a strong advocate of wind and solar energy and would probably be happy to show the units he has installed to anyone who was interested. However, be prepared for a long lecture on their virtues.) The impact of large wind turbines on birds and bats was acknowledged, but the argument was made that other human activities have far greater impacts on them.

There was much discussion on the impact of NC's ridgeline law, which severely limits development on ridgelines over 3,500 feet, on the outlook for wind energy in our state. Western North Carolina has about 1,000 miles of ridgeline that have wind speeds that would make wind development attractive; most, if not all, above 3,500 feet. Some of this ridgeline would be excluded because of its scenic or recreational value, or because it is too hard to access or too far from transmission lines. There was no indication of

how much ridgeline would be left after these exclusions. There are also good wind resources off the NC coast, but offshore wind is very expensive and unlikely to be competitive in the short term.

The ridgeline law includes a specific exemption for WINDMILLS. However, NC's Attorney General, Roy Cooper, has issued an opinion that this exemption is limited to single, farm-style windmills, and that any larger scale development of wind energy on these ridges would be precluded. This position has been challenged by several people who were members of the legislature at the time the law was passed, but currently the Attorney General's view prevails.

Conflicting with the Attorney General's view is an NC law passed last year that requires that energy efficiency and renewables reduce dependence on fossil fuels and nuclear for electricity generation by 12.5% by 2021. The experts on the panel thought that co-firing of biomass would be the first renewable option used and wind, the second. Two paths were seen around the current interpretation of the ridgeline law: a new Attorney General could issue a different opinion, or the legislature could change the law to specifically allow development of wind energy on ridgelines. Much was made of the fact that Santa Barbara County in California, a very environmentally conscious area that has a ridgeline protection law, has recently decided that development of wind energy is the use of their ridgelines that provides the highest value to society. A third alternative, a legal challenge the Attorney General's interpretation, would be costly, time-consuming, and uncertain.

Attempts to develop a statewide standard for permitting of wind facilities have been stalled in the NC legislature. In the absence of statewide regulation, individual counties have come up with their own regulations. Ashe County has an ordinance that prohibits wind turbines from rising more than 35 feet above the tree line. This effectively bans turbines, since as Prof. Scanlin pointed out, the bottom of the turbine blade must be at least 30 feet above the trees to avoid the turbulence caused by the wind hitting the trees. A woman from Ashe County defended their regulation saying that they have narrow ridge tops that would have to be flattened to allow wind development, and that the road and transmission line access to the wind turbines would cause even more disruption.

Much of the audience and most of the panel favored community-scale development of wind energy, at least as a first step. This scale development would allow people to learn about both the advantages and disadvantages of wind energy before having to decide on larger-scale projects. Some of the audience clearly liked the fact that this kept the development in the hands of small organizations, not the large utilities. Community-scale development also would be less likely to impact on recreational areas, such as the A.T. However, the cost of electricity from community-scale turbines is higher than from utility-scale turbines or from conventional electricity generation.

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