

This appeared in The Litchfield County Times, April 6, 2011

The Bulletin (CTBulletin.com)

<http://countytimes.com/articles/2011/04/06/opinion/op-ed/doc4d9d143487a6b724789036.prt>

What is the Real Risk/Benefit of Big Wind?

Wednesday, April 6, 2011

By B. Blake Levitt

Just when there's an enviro no-brainer to embrace—like green renewable energy—careful scrutiny reveals another yawning maw of unintended consequences.

The Berkshire-Litchfield Environmental Council (BLEC) is sponsoring an educational forum April 16 at the Housatonic Valley Regional High School in Falls Village from 1 to 5 p.m., on commercial-scale wind generation. BLEC comes reluctantly to playing Cassandra this time because we like the idea of capturing something abundant, natural and free, then putting it to good use.

As a broad-based environmental organization founded in 1970, BLEC was an early proponent of renewable energy. We even published one of the first booklets on “renewables” in the early 1980s. That was long before notions of industrial Big Wind hooking into the national utility grid existed, or viable technologies for geothermal, fuel cells, roof-top solar, or current/tidal wave renewable energy were on anyone's radar. It's a whole new renewables world now, increasingly motivated by an imploding Middle East.

But it turns out commercial-scale wind generation is far more complex than any-one imagines at first glance. These are not our grandfather's faithful 30-foot tall windmills gracefully spinning in a farm field, generating enough electricity to pump well water. These are towering 300-to-515-foot tall behemoths—some approaching the height of the Washington Monument, often placed atop scenic ridgelines, creating serious obstacles to anything that flies, including airplanes. Humans can navigate around them; it's the migratory birds and bats—both increasingly imperiled—that get clobbered and suffer big time.

According to the BLEC forum's key-note speaker, Dr. Albert Manville, a senior wildlife biologist at the U.S. Fish and Wildlife Service (USFWS) in Washington, D.C., and our nation's authority on avian-structural impact problems, commercial wind turbines kill an estimated 440,000 protected migratory birds each year in the U.S.—an impact increasing with the exponential growth of wind energy. Even more bats may be killed each year from turbine collisions and something called barotraumas—the result of blade wake, turbulence and pressure gradients. The footprint and project area of a wind facility can be enormous—going well beyond just the turbine pads and roads servicing the area, fragmenting habitats, disturbing wildlife, and creating artificial barriers. This can all result in wildlife site avoidance, behavioral modification and the creation of sub-optimal environments. Inappropriately placed wind facilities can even threaten wildlife population viability.

Dr. Manville says that while USFWS acknowledges the critical need to address our carbon footprint and his agency supports renewable energy as a part of that solution, “We cannot afford to create additional problems for wildlife and their habitats in our efforts to address climate change. Proper siting and selecting the most wildlife- and habitat-friendly locations, is the best way to minimize impacts to species and their habitats,” he noted.

Dr. Manville said that his agency prosecutes for illegal “take”—the term used for death or injury of birds, and disturbance to eagles—especially where proven conservation measures are available to avoid or minimize impacts. Proper responsible facility siting is a tool that can be used, he said.

Two draft documents, released to the public for comment through the Feb. 18 Federal Register, address wind development and eagle issues. These include USFWS's "Draft Land-Based Wind Energy Guidelines," based in part on the 2010 recommendations of the Wind Energy Federal Advisory Committee, on how to assess and minimize impacts to birds, bats, other wildlife and habitats.

The "Draft Eagle Conservation Plan Guidance" (also published Feb. 18 and open for comment through May 19), provides additional eagle-specific guidance intended to support issuance of eagle programmatic "take" permits for wind facilities. This draft guidance interprets existing regulations put into force in fall 2009, through which the USFWS finalized a "take" provision for non-purposeful (incidental) "disturbance take" and "take resulting in mortality" for both bald and golden eagles in the U.S. (50 CFR 22.26).

Any "take" of golden eagles in the West-ern U.S., for instance, must be completely offset by compensatory mitigation. In other words, wind companies can't keep killing eagles without taking further steps to stabilize or increase populations through verified practices that protect habitats, or produce more surviving fledglings. Currently, no "take" permit of any kind will be issued for golden eagles in the Eastern U.S., including New England. Both eagle species may be present at potential wind development sites in New England during migration, overwintering or breeding.

While both of these new USFWS guide--lines are voluntary at the moment, es--tablished statutes prevail. The unpermitted "take" of eagles, or any of the other 1,005 species of protected migratory birds, could be a criminal violation of the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act, both of which are strictly liability statutes. Wind developers, their consultants, planning/zoning commissions, and government officials need to carefully assess these issues and potential impacts before approving, siting and building wind facilities.

Dr. Manville wants Connecticut's Department of Energy and Environmental Protection (DEEP), and our siting council, which has final authority over tower siting and is currently reviewing the Colebrook and Prospect wind applications, to know it is extremely important that they work with USFWS at the outset to ensure all project sites are the most environmentally responsible and wildlife-sensitive. Im--prop--erly sited projects can enhance the likelihood of "take," which everyone pre-fers to avoid. This means coordination with his agency before a site is selected, a landowner agreement is reached, a power purchase agreement is negotiated, a bank loan acquired, and the facility is operating. He stresses that the paradigm has shifted significantly, calling for better coordination between USFWS and state agencies.

BLEC has repeatedly invited re--presentatives from both the DEEP and the Siting Council to hear Dr. Manville, but they have refused to send representatives due to perceived "conflicts of interests" while processing wind applications. That's a specious excuse as they have refused to send even non-voting staff. Both agencies appear to look favorably on wind energy—Gov. Dannel Malloy and DEEP Commissioner Daniel C. Esty came out against a proposed moratorium on wind energy while the state created better regulations. But in the hubris of thinking they already know enough, our siting authorities could easily run afoul of the federal guidelines. Connecticut's Attorney General George Jepsen would then have to defend those agencies against USFWS, a waste of taxpayers' money.

Other significant problems for anyone living within several miles of wind turbines include increased ground currents and high-frequency abnormal energy couplings known as "dirty electricity," which can interfere with other electrical appliances; continual low frequency sound that can reeve as loud as an airplane engine; environmental vibration, and constant light flicker from rotating blades. A combination of these factors can lead to something called Wind Turbine Syndrome in people living as far as a mile away. Symptoms include severe headaches, depression, anxiety, sleeplessness and a host of other adverse effects, including seizures in some susceptible individuals.

Then there is property devaluation; structural failures; fires that burn 500 feet in the air; and ice that can be thrown by moving blades. For an eye-opener of what can go wrong, see the Scottish Web site www.caithnesswindfarms.co.uk/fullaccidents.pdf

Wind may still hold promise in wide-open regions unlike interior New England. But we may have to reconsider the entire scale of commercial wind, see it as suitable only for specific regions, and require new, radically different designs. That's where effective legislation and regulation come in. The simple fact is that wind energy may not be viable here.

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