

## Sound pollution from wind turbines

Wind turbines create noise from either the blades moving through the air or from the mechanical hub that produces the electricity. Sounds from wind turbines are a problem for some who live closest to the machines.

### 2 Pulsing sounds

**Outdoors** Turbines may appear to move slowly, but the tips of their blades often reach speeds of more than 100 mph. This, coupled with wind conditions that may include faster-moving air at the top of the arc and slower winds at the bottom, can produce a pulsing or oscillating sound.

**Indoors** Low-frequency sounds can penetrate walls and windows and are sensed as vibrations and pressure changes.

### 5 Shadows

The flickering shadows of rotating turbine blades at certain times of the day can also disturb residents.

### 1 Air-foil turbulence

Sound is generated by air moving over the surface of the blade or at the trailing edge of the blade called "vortex shedding."

### 3 High-pitched sounds

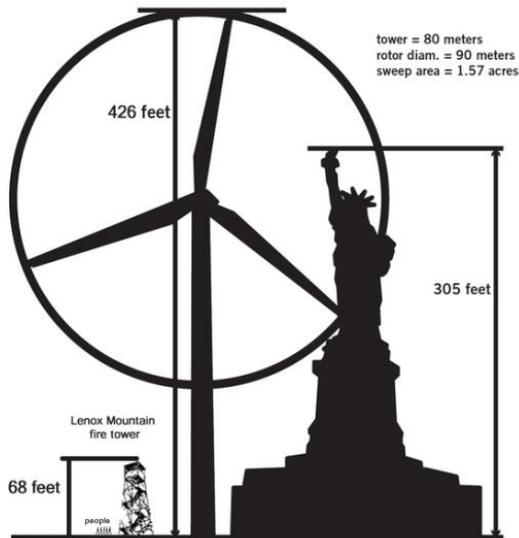
Some noise may come from the nacelle, or hub: a high-pitched whining similar to a jet engine, but not as loud.

### 4 Distance differences

Standing beneath a turbine may not be as noisy as standing further away. Depending on wind conditions, some types of sound increase with distance before becoming quieter.

Source: American and Canadian Wind Energy Associations

MARK BOSWELL - Minneapolis Star Tribune



## WHO WE ARE

We are people from Lenox and the surrounding communities who have come together out of an informed belief that siting industrial-scale wind turbines on the ridges of the Berkshires is a not a wise choice.

We believe in smart alternative energy.

We support alternative sources of energy that have real benefits for our communities. We believe in energy efficiency and conservation. We believe in being smart about being green.

## OUR MISSION

To *learn* about the impact of the Lenox wind turbine project as well as to fight the passage of the Wind Energy Siting Reform Act (WESRA) which seeks to remove local control of industrial wind siting decisions.

To *share* what we learn with others in our community.

To *insure* that our neighbors and political leaders have access to objective, unbiased information about the effects that industrial wind turbines on the ridges of the Berkshire mountains will have on our communities.

To *promote* the conservation of energy and the choice of smart alternative energy technologies. To *protect* the health of our citizens, the beauty of our environment and the future of the Berkshires.

## PLEASE JOIN US

Each of us at PLM realized if we did not stand up for our special place in the world, no one would. But we need your help too. Please get involved.

[www.preservelenoxmountain.org](http://www.preservelenoxmountain.org)  
[facebook.com/preservelenoxmountain](https://facebook.com/preservelenoxmountain)



## THE FACTS REGARDING THE TOWN OF LENOX TURBINE PROPOSAL FOR LENOX MOUNTAIN

**Low Benefit**  
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**Negative Impact**

huge towers 426 feet high – blades sweep 1.5 acres vertical area – tip speed 185mph – dead birds and bats – disturbed ground animals – noise and vibration – hundreds of tons of concrete and steel in each foundation – access roads and transmission lines – blasting – disrupted water flow – clear cutting – fragmented wildlife habitat – shadow flicker – strobe lights day and night – visual intrusion and distraction – degradation of social and natural environments – misplaced public funds – loss of property values – loss of tourism – permanently impact quality of life

**Ridges are not renewable.**  
Protect Our Berkshires.

**LOCATION.** The Town of Lenox is proposing to build industrial wind turbines on Town-owned land that feeds the Lenox Reservoirs, the primary source of water for Lenox. The site is located about 1.5 miles northwest of the Town of Lenox at the top of an 1,815-foot peak of Lenox Mountain. Lenox Mountain is part of 9-mile long Yokun Ridge that runs from below West Stockbridge north to the Bosquet Ski area. The more northerly turbine would be 350 feet from the boundary of the Pleasant Valley Wildlife Sanctuary. Most of Yokun Ridge is either conserved or public land and crisscrossed with hiking and biking trails.

#### **ACCESS ROADS AND CONSTRUCTION.**

Because the blades are as much as 164 feet long, a wide turning radius is required to transport the turbine components to the site. The slope at certain points is steep enough that components might need to be pulled up the Mountain. The expected transport route is through the Town of Lenox. Reservoir and Osceola roads in Richmond are also potential access points. Blasting is required to anchor the structures. Blasting risks disrupting groundwater sources and contaminating water supplies with blasting chemicals.

**TOURISM.** Tourism is a \$337 million dollar business for Berkshire County, according to the Berkshire Business Bureau. In a recent Bureau survey, 86% of overnight visitors say scenic beauty is an extremely or very important reason they visit the Berkshires. National Geographic ranked the Berkshires 15<sup>th</sup> among all tourism destinations worldwide for its balance of culture and environmental beauty. A former travel editor for Harper's Bazaar UK said, “. . . I have learned that visitors will travel a long way for landscapes that are unique, and the indefinable magic that draws visitors, would be catastrophically diminished by turbines”.

**PROPERTY VALUES.** In expert testimony, a certified property appraiser reports losses of 25% to 40% of property values with properties up to two miles away impacted.

**SAFETY ISSUES.** Turbines can explode and fling scrap metal for more than a mile. Ice throws are possible. Explosions and fires have been reported. The fire chief in Plymouth, New Hampshire, opposed a wind turbine plan for his town because he lacked equipment to fight fires on remote mountains. The Lenox Mountain turbines would be in a densely wooded relatively remote area with homes as close as 2,300 feet away.

**NOISE AND HEALTH.** Emerging peer-reviewed evidence suggests that wind turbine noise, both audible sound and low frequency, sub-audible infrasound adversely impacts human health when turbines are sited too close to where people live. No one currently knows how close is safe. Wind Turbine Syndrome is a constellation of symptoms and disorders, including sleep disturbances, anxiety, tinnitus, vertigo, and learning disabilities in children

**VISUAL IMPACTS.** The turbines will be visible from many locations and will require red flashing aviation lights at night. Perhaps more concerning is the potential for “flicker” or strobing by sunlight passing through the swept area of the blades, the tips of which are moving at about 180 miles per hour, at certain times of the day and year.

**BIRDS, BATS AND WILDLIFE.** Wind turbines present the potential for bird and bat fatalities. Eagles, hawks, owls and raptors are of particular concern. The close proximity of the wind turbines to the Audubon Pleasant Valley Wildlife Sanctuary make the issue of bird and bat fatalities particularly important. Wind turbines fragment wildlife habitats. The Lenox Mountain watershed lands are

known as a deer-yard or wintering-over site for deer and a spring migration area for salamanders.

**GREEN ENERGY.** Wind turbines do not replace dependence on foreign oil or coal. In 2010, less than half a percent of New England's electricity was generated from oil based according to ISO New England, the regional grid operator. Coal fired plants, which generated about 11.2% of New England's electricity in 2010, down from 14.3% in 2000, would not be shut down. Coal-fired plants are “baseload” plants, meeting the minimum level of energy demand throughout the year by producing continuous, reliable and efficient power at low cost. Wind energy is considered intermittent energy technology, not producing energy when it's needed and producing energy when it's not needed, and so can't replace baseload electricity sources.

**CONSERVATION.** Conservation is a much more effective strategy. Eleanor Tillinghast of Green Berkshires, an environmental research and advocacy non-profit group, used Energy Star data to estimate that if every household in Massachusetts replaced one conventional light bulb with a compact fluorescent light bulb, more electricity would be saved in a year than would be generated by the currently operating Brodie and Jiminy Peak turbines and the two turbine configuration proposed at Lenox Mountain.



Turbines and clear cutting on Brodie Mountain