



ADVICE FROM AN EXPERT *by Mick Sagrillo*

ZONING IV

Perceptions/Local Concerns

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There are several final concerns that your local zoning board may raise when you apply for a building permit for a home-sized wind system. While these concerns are more perception problems than real problems, reassuring the zoning committee that they have been considered by you (as well as the equipment manufacturers) will help your request along.

One concern that arises in the colder regions of the country involves ice flying from the blades during the winter, potentially harming nearby residents. While ice buildup on blades is an occasional problem for wind turbines, flying ice is not. When ice builds up on the blades, they turn very slowly (at only several revolutions per minute) until the ice is shed. This is because the airfoil has been compromised by the ice, and the blades are unable to pick up any speed.

When icing occurs, it is best to shut the system down until the ice melts and falls from the tower, generator, and blades. The ice will fall straight down to the base of the tower. Because these are small systems with relatively small surfaces, not a lot of ice is actually involved, and the ice is never in large chunks or sheets. Realistically, this situation is no more dangerous than being near a tree covered with ice. In fact, because the weight of ice often causes branches to break, ice-laden trees are actually more dangerous than iced wind turbine blades. Unlike trees, towers are specifically designed to withstand heavy ice loads.

Another concern that will likely arise involves the structural integrity of the tower you are planning to install. When you apply for the building permit, be sure to include any documentation supplied by your dealer or turbine manufacturer about the suitability of the tower for use with a wind generator. In addition, submit the footing specifications developed by the tower supplier or manufacturer. This will assure the zoning committee that someone has adequately addressed their structural integrity questions.

Yet another set of concerns revolves around the noise the wind turbine will create. Manufacturers of home-sized wind turbines are very sensitive to the perception that their machines are noisy, since this can adversely affect the sale of their product. Therefore, they make serious attempts to quiet their wind generators.

Today's home-sized wind turbines typically operate from just below to just above an ambient environmental noise level of 52 to 55 decibels. This means that while the sound of the wind turbine can be picked out of surrounding noise if a conscious effort is

made to hear it, home-sized wind turbines are by no means the noisy contraptions that some people make them out to be. Again, manufacturers or a wind consultant can supply noise data if it is requested by the zoning committee.

All of these concerns can be addressed by supplying measured or measurable objective data. This is desirable, because it takes your zoning request out of the realm of speculation, and puts it into more fact-based decision making.

One concern may arise, however, that may be more difficult to deal with, which is that a wind generator tower is an "attractive nuisance." Like the visual impact of a wind system, an attractive nuisance is open to very subjective interpretation. "Attractive nuisance" is a catch-all term that is often applied by people trying to stop a construction project from proceeding. In general, it refers to a structure that poses a dangerous situation in the neighborhood. With wind turbines, the fear is that someone, particularly children, will climb the tower and either fall or be harmed by electrical or mechanical components. The conclusion is that, to protect the neighborhood, attractive nuisances should not be permitted.

As a response to the attractive nuisance accusations, zoning committees may consider requiring you to install a fence around the tower. The best thing you can do is to point out that anyone determined to climb your tower will not be stopped by a fence. In fact, fences are more often climbed by children than are towers, or even trees. Try turning the argument around and depict fences as attractive nuisances.

The best defense against the attractive nuisance accusation is to point to other similar structures in your neighborhood, and ask about the frequency of them being climbed. For example, silos are quite common in rural areas. In fact, silos have ladders built into them, because they need to be climbed periodically to do maintenance on the silo unloader. How often are they climbed by the neighborhood children? If other structures pose no problem, why should your wind generator tower be received any differently in the neighborhood?

Forcing subjective issues to be documented with objective criteria takes them out of the realm of speculation and reduces the likelihood of possible zoning problems of a wind turbine.

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