

The Northwestern Connecticut
**REGIONAL PLANNING
COLLABORATIVE**

Wind Energy Regulations



A case study containing
information & resources on
crafting a wind turbine
zoning regulation for your
community.

November 2008

OVERVIEW

Many towns in the NW corner of Connecticut are now considering ways of allowing or encouraging alternative energy sources such as wind power. This case study provides information and resources for communities interested in carefully crafting a zoning regulation that will allow the use of wind turbines in a way that protects scenic views and respects property values.

GOSHEN'S EXPERIENCE

The Town of Goshen's Planning & Zoning Commission received an application for a change to their zoning regulations to allow for the installation of a 200ft wind turbine. The town proceeded to develop a windmill regulation based on a model from the Massachusetts Dept. of Energy (link provided below) and revised by town counsel. This regulation allows energy producing wind devices no higher than 200ft that comply with siting, design, safety, and environmental standards by special permit in two zoning districts. Below are some of the issues to consider when drafting such a regulation and some of the lesson's Goshen learned through their experience.

KEY ISSUES TO CONSIDER

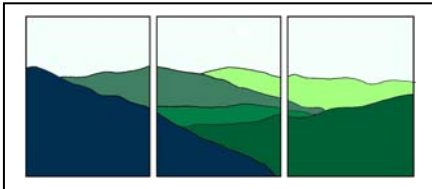
1. "Small wind" and "Utility scale"- As shown on the Connecticut Wind Resource Map (link provided below) the state is not well endowed with the wind regularity and speeds most conducive to wind power generation with current technologies. However, there are some locations in the Litchfield Hills region shown on the map with "marginal" wind resources that may allow for "small wind" generation for primary use by the owner- for example a windmill on a farm which will use a majority of the power generated. New technologies for "utility scale" wind generation (a commercial use where the power will

primarily be sold to wholesale electricity markets) that work in areas with marginal wind resources are being developed and your town may be approached as a location for testing new types of wind turbines (as was the case in Goshen).

It is important to understand the difference between small and utility scale wind power and whether you are crafting a regulation to allow one or both types of generation in town because the types of equipment required and therefore the impacts can be quite different as discussed below.

2. Height of Wind Facilities - For generating wind power, the higher the wind turbine or tower the better. As you can imagine, the strongest winds are at least 20 feet above the tree line. For utility scale wind power production towers of between 200ft. and 400ft. are generally required. However, for small scale wind production, many model regulations use an 80ft. maximum height. As long as the maximum height stays under 200ft., lighting which can add to the visual impact, is not required by the Federal Aviation Administration.

Height can also be discussed in relation to the size of the parcel on which the wind facilities will sit (in addition to setback requirements). Some regulations allow an 80ft. tower height on parcels between 1/2 to 1 acre, and have no maximum height for parcels over an acre. Be careful not to set your maximum height so low that the type of wind generation you are intending to allow would not be feasible.



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For more information or assistance, please contact the Collaborative Planners @ www.nwctplanning.org

3. Noise- Though many wind device manufacturers claim that the sound of their wind turbines is no different than wind blowing through the trees, your regulation will want to address any potential noise impacts on neighboring properties. Many model regulations suggest a maximum noise output of 55 decibels, measured at the site property line. It may be helpful if the project application can demonstrate the noise type and level. To deal with this issue, the town of Goshen has stated in their regulation that the “Wind Facility shall conform to any applicable provisions of the Torrington Area Health District (TAHD) Noise Control Regulation and all other applicable noise laws, regulations and statutes.”

4. Appearance- In order to deal with the potential visual impacts of a wind device, a regulation should address color, advertising use, and shadow/flicker. The regulation may also require that impacts on scenic corridors and ridgelines as identified in your town plan be minimized. Goshen’s regulation requires visualizations of the height & location of the wind tower from at least 3 sight lines. For a backyard tower (under 80ft), especially on sites over 1 acre, this might not be necessary. In addition, Goshen’s P&Z Chair suggests considering a requirement to show a cross sectional view of the tower, as some new technologies look very different from your traditional windmill.

RESOURCES

Relatively few Connecticut towns have adopted wind energy regulations to date. Links to Goshen, Salem, and Ellington’s regulations can be found on our website. There is also a link to a model regulation developed by the Massachusetts Dept. of Energy. These examples are for information only, they are not recommendations. Each town should consider its specific needs and conditions in drafting a regulation. If you would like assistance with this, please contact us.

Website Resources:

Connecticut Wind Resource Map- US Dept of Energy

The Department of Energy's Wind Program published a new wind resource map for the State of Connecticut. This resource map shows wind resources that could be used for utility-scale wind development. Future plans are to map wind resources useful for identifying small wind turbine opportunities. http://www.windpoweringamerica.gov/maps_template.asp?stateab=ct

Wind Energy Toolkit- Community Resources for Wind Development, New York State Energy Research and Development Authority.

This tool kit is designed to provide information on all the various aspects of wind energy development and to help communities prepare for wind development, should they so desire. This toolkit includes “Wind Energy Model Ordinance Options” <http://www.powernaturally.org/>

SMALL WIND in CONNECTICUT – American Wind Energy Association

This page provides information specific to buying and installing a small wind turbine in Connecticut.

<http://www.awea.org/smallwind/connecticut.html>

Northwestern CT Regional Planning Collaborative- Tools for wind energy regulations

Find a copy of this case study, example regulations, and other links on the “tools” page of our website.

www.nwctplanning.org