

## Wind Energy Ordinances

With increasing energy demands in the United States and more installed wind projects, rural communities and local governments with limited or no experience with wind energy are now becoming involved. Communities with good wind resources are increasingly likely to be approached by entities with plans to develop wind projects.

These opportunities can create new revenue in the form of construction jobs and land lease payments. They also create a new responsibility on the part of local governments to regulate wind turbine installations through ordinances. Ordinances, often found within municipal codes, provide various degrees of control to local governments. These laws cover issues such as zoning, traffic, consumer protection, and building codes. Wind energy ordinances reflect local needs and preferences regarding wind turbines within county or city limits and affect the development of safe facilities acceptable to the community.

Since the U.S. Department of Energy's National Renewable Energy Laboratory released its report *An Overview of Existing Wind Energy Ordinances\** in 2008, many more wind energy ordinances have been established throughout the United States. This trend is likely to continue as wind energy deployment increases. This fact sheet provides state and local government officials, policymakers, and members of the public an overview of elements found in existing wind energy ordinances. It provides a general summary and is not meant to comprehensively detail all elements found in typical wind energy ordinances.

\* Available at [www.windpowerin-america.gov/pdfs/policy/2008/ordinances\\_overview.pdf](http://www.windpowerin-america.gov/pdfs/policy/2008/ordinances_overview.pdf)



PIX15249

Wind energy ordinances reflect local needs and preferences regarding wind turbines within county or city limits and aid the development of safe facilities that will be embraced by the community. Courtesy of Iberdrola Renewables, Inc.

### How Are Wind Energy Ordinances Established?

The process of establishing ordinances differs among communities. The most common approach is to research existing wind ordinances, develop a draft ordinance, and present it at a town or city council meeting. Various states have developed model wind turbine ordinances that municipal and county officials can use as examples when developing their own regulations. An overview of ordinance elements follows. Once changes are incorporated to the draft ordinance, a final draft is presented for vote by the governing council or the citizens. In some cases, committees of citizens or council members develop the ordinance and then present it to the general public for a vote.

Communities should consider establishing ordinances that address different system sizes within their jurisdictions: for example, small turbines (400 watts to 100 kilowatts) as well as utility-scale turbines (larger than 100 kilowatts).

### Elements of Wind Energy Ordinances

The following are typically included in wind energy ordinances:

#### Access

Defined access standards help towns or counties ensure safety by limiting contact with the interior of the wind turbine tower, electrical equipment, climbing apparatus, and transmission infrastructure.

#### Appearance, Color, and Finish

By defining the appearance, color, and finish of wind turbines, local governments can reduce citizen complaints about aesthetics and promote design uniformity.

#### Clearance

Normally measured between the bottom point of the arc created by rotating blades and the ground, a defined clearance height serves public safety.

### Electrical

Electrical standards may be established to define whether wires must be buried or may be allowed overhead.

### Equipment

Equipment standards typically further define the electrical standards by ensuring that any electrical equipment is located in a specified area, usually under the wind turbine blades' swept area.

### Height

Height is usually measured from the base of the tower to the tip of the blade at its highest point. General municipal and county zoning ordinances often already define height allowances. An exception allowing for greater heights for wind turbines may need to be specified.

### Lighting

Lighting must comply with minimum Federal Aviation Administration regulations but can also be regulated to minimize potential adverse effects on neighboring properties.



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Is a wind turbine a tower or a structure? A building permit for this turbine in Winter Harbor, Maine was initially denied because it was considered a structure and therefore subject to a 40-foot height limit. The local appeals board eventually decided that the turbine was not a structure and could therefore be mounted on a 100-foot tower.

Courtesy of Tom Walsh, The Ellsworth American

### Noise Standards

Noise standards define a standard maximum level of noise allowed from wind turbine operation. These standards specify a method of measuring noise level.

### Permits

The permitting process allows local governments to review and regulate wind energy developments. Permits are granted in accordance with the provisions of the wind turbine development ordinance.

### Setbacks

These standards are defined to create space between areas of concern and wind turbines. Common areas of concern include property lines, inhabited structures, public roads, communication lines, and electrical lines.

### Shadow Flicker

“Shadow flicker” refers to shadows cast on the ground and surrounding structures by rotating wind turbine blades. Ordinances can regulate the development of commercial wind turbines to mitigate or prevent shadow flicker on roadways or on occupied structures on non-participating properties.

### Signage

Sign standards generally mandate that wind turbines will not be used to advertise or promote any product or service. Signage standards may also require warning notices and may allow a turbine’s owner or manufacturer to be identified.

### Signal Interference Standards

Signal interference standards ensure that the construction and operation of wind turbines will not interfere with television, microwave, navigational, or radio reception in neighboring areas.

### Site Restoration and Decommissioning

Restoration requirements ensure that areas where wind turbines are decommissioned and not replaced will be restored to their original condition. Site restoration standards are defined according to the desires of the local government and community. They sometimes include the posting of a performance bond or other financial instrument to ensure wind turbine disposal and site rehabilitation.

### Spacing and Density

Spacing and density standards address aesthetic concerns and safety issues by ensuring that individual wind turbines will not be sited too close together.

### Zoning Areas

Zoning area standards limit wind energy development to certain parts of the town or county where the overall project impact will be minimal. In some cases, zoning standards limit development to areas with the best wind resources.

### Additional Resources

The American Wind Energy Association offers a model small wind turbine ordinance at [www.awea.org/smallwind/documents/modelzo.html](http://www.awea.org/smallwind/documents/modelzo.html) and a guide for state and local governments for permitting small wind turbines at [www.awea.org/smallwind/pdf/inthepublicinterest.pdf](http://www.awea.org/smallwind/pdf/inthepublicinterest.pdf)

For examples of wind energy conversion system ordinances, please visit [www.windpoweringamerica.gov/policy/ordinances.asp](http://www.windpoweringamerica.gov/policy/ordinances.asp)

The U.S. Department of Energy is funding a guidebook, *Community Planning Strategies for Successful Wind Energy Implementation*. Learn more at [www.planning.org/research/wind/index.htm](http://www.planning.org/research/wind/index.htm)



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