

Amendment of Article 18

Article 18 of the Otsego County Zoning Ordinance is hereby amended to add a new Section 18.5, which shall read in its entirety as follows:

Otsego County

Ordinance No. 18.5 of 2003

AN ORDINANCE TO AMEND THE OTSEGO COUNTY ZONING ORDINANCE CONCERNING WIND TURBINE GENERATORS AND ANEMOMETER TOWERS

Purpose

The purpose of this ordinance is to establish general guidelines for the location of wind turbine generators and anemometer towers. The county recognizes in some specific instances, under carefully controlled circumstances, it may be in the public interest to permit the placement of wind turbine generators in certain selected areas of the county. The county also recognizes the need to protect the scenic beauty of Otsego County from unnecessary and unreasonable visual interference, and that wind turbine generators may have negative aesthetic impacts upon adjoining and neighboring uses. As such, this ordinance seeks to:

1. Protect residential areas from potential adverse impact of wind turbine generators;
2. Permit wind turbine generators in selected areas, which do not have any type of residential development in the proximity of such selected areas.
3. Consider the public health and safety of wind turbine generators; and
4. Avoid potential damage to adjacent property from the failure of wind turbine generators or anemometer towers.

Procedure

One or more public hearings shall be held on an application for commercial wind turbine generators. Notice of hearing shall be given by mailing to all property owners of real property which is located two miles of the exterior boundaries for the proposed project, as such owners are shown on the last equalized assessment roll and any update. The hearing body shall be the Otsego County Planning Commission.

Application

Every application for a commercial wind turbine generator permit shall be made in writing to the Otsego County Zoning Administrator on the forms provided by the Zoning Department and shall be accompanied by any and all filing fees. The permit application shall include but is not limited to the following information:

1. Name and address of the applicant.
2. Evidence that the applicant is the owner of the property involved or has written permission of the owner to make such application.
3. A plot and development plan drawn in sufficient detail to clearly describe the following:
 - a. Physical dimensions of the property, existing structures, and proposed structures.
 - b. Location of existing and proposed structures.
 - c. Location of electrical lines and facilities.
 - d. Existing topography.
 - e. Proposed grading and removal of natural vegetation.
 - f. Wind resource study as described in 18.5.1.
 - g. Setbacks.
 - h. Ingress and egress identifying the following factors:
 - i. Location and distance to the nearest County maintained road;
4. A description of the access route from the nearest County maintained road to include:
 1. Road surface material stating the type and amount of surface cover;
 2. Width and length of access route;
 3. Dust control procedures;
 4. A road maintenance schedule or program;
5. Utilization of the property under the requested permit.
6. Utility interconnection data and a copy of written notification to the utility of the proposed interconnection.
7. Specific information of the type, size, height, rotor material, rated power output, performance, safety, and noise characteristics of each WTG model, tower and electrical transmission equipment.
8. A soil boring report as described in Section 18.5.14.
9. A location map to scale of all dwellings within 2 mile of the boundary of the property upon which the WTG's are to be located.
10. An analysis to reduce air navigation clutter on airport radar facilities.
11. One or more detailed computer or photographic simulation drawings showing the site fully developed with all proposed WTG's and accessory structures.
12. A copy of written notification to the Federal Aviation Administration and the Otsego County Airport Authority.
13. An application including any WTG's which are located within two miles of any microwave communications link shall be accompanied by a copy of a written notification to the operator of the link.

14. An application including any WTG's which are located within a 100-year flood plain area, shall be accompanied by a detailed report which shall address the potential for wind erosion, water erosion, sedimentation and flooding, and which shall propose mitigation measures for such impacts.

Section 18.5. Wind Turbine Generators and Anemometer Towers.

Wind turbine generators and anemometer towers shall comply with all of the following standards:

- 18.5.1 Sufficient Wind Resources. The proposed site shall have documented annual wind resources sufficient for the operation of the proposed wind turbine generator; provided, however, this standard shall not apply to an anemometer tower. No wind turbine generator shall be approved without submission of a wind resource study documenting wind resources on the site over a minimum of two years. Said study shall indicate the long-term commercial economic viability of the project. Anemometers to be placed shall be calibrated regularly to ensure a measurement of error of 1% or less. All anemometers shall be placed at the expected hub height of the wind turbine to be used. Sufficient wind resources, as described by the U.S. Department of Energy, include areas with a wind power class 4 or higher. The county shall retain the services of an independent, recognized expert to review the results of the wind resource study prior to acting on the application for special use permit.
- 18.5.2 Minimum Site Area. The minimum site area for a wind turbine generator or an anemometer tower erected prior to a wind turbine generator shall be twenty (20) acres and must meet required setbacks and any other standards of this ordinance.
- 18.5.3 Setbacks. Each proposed wind turbine generator or anemometer tower shall meet the following applicable setback requirements:
 - 18.5.3.1 Each wind turbine generator shall be set back from any adjoining lot line a distance equal to 2,600 feet. The Planning Commission may reduce this setback to no less than 2,100 feet. The amount of setback relief approved by the Planning Commission will be based on data provided by the applicant and prepared and certified by a registered Professional Engineer licensed in the State of Michigan, who is practicing in his or her area of competency. Such data shall be subject to review by the County's independent, recognized expert.
 - 18.5.3.2 In addition to the above, a wind turbine generator shall, in all cases, be setback from a public or private road right-of-way or easement a minimum distance equal to six times the height of the wind turbine generator tower as defined in this Ordinance.

- 18.5.3.3 For any newly proposed wind turbine generator or anemometer tower, a “wind access buffer” equal to a minimum of five (5) rotor diameters shall be observed from any existing off-site wind turbine generator tower.
- 18.5.19.1 Sensitive environmental areas shall have a setback of between 2 to 5 miles and shall be determined by the Otsego County Planning Commission and the Department of Natural Resources.
- 18.5.19.2 Scenic areas, including parks, highways, recreational areas, and others as determined by the County and Townships, shall have a setback of not less than 1 mile.
- 18.5.4 Maximum Height. Then maximum wind turbine generator or anemometer tower height from the base to the tip of the blade at its highest point shall not exceed 200 feet. The Planning Commission may approve an increased height for a wind turbine generator tower, not to exceed 260 feet from the base to the tip of the blade, if all of the following conditions are met:
- 18.5.4.1 The increased height will result in the preservation of a substantial stand of trees, existing land forms or structures that would otherwise be removed to increase wind velocity.
- 18.5.4.2 The increased height will not result in increased intensity on lighting of the tower due to FAA requirements.
- 18.5.5 Minimum Rotor Wind Vane or Blade Clearance The lowest point of the arc created by rotating wind vanes or blades on a wind turbine generator shall be no less than 40 feet measured from the highest point of the terrain within one blade radius from the base of the tower.
- 18.5.6 Maximum Noise Levels. The audible noise standard due to wind turbine operations shall not be created which causes the noise level at the boundary of the proposed project site to exceed (40) dB(A) for more than five (5) minutes out of any one hour time period or to exceed 45 dB(A) for any time period.
- 18.5.19.1 A commercial wind energy facility shall not be operated so that impulsive sound below 20 Hz adversely affects the habitability or use of any dwelling unit, hospital, school, library, nursing home, or other sensitive noise receptor.
- 18.5.7 Maximum Vibrations. Any proposed wind turbine generator shall not produce vibrations humanly perceptible beyond the boundaries of the property on which it is located.
- 18.5.8 Endangered or Threatened Species: Development and operation of a commercial wind energy facility shall not have a significant adverse impact on endangered or

threatened fish, wildlife, or plant species or their critical habitats, or other significant habitats identified by the Department of Natural Resources and/or the studies of the U.S. Fish and Wildlife Service. Commercial wind energy facilities must adhere to the guidelines set forth by the U.S. Fish and Wildlife Service, "Guidelines To Avoid and Minimize Wildlife Impacts from Wind Turbines", Federal Register: July 10, 2003 (Volume 68, Number 132).

- 18.5.9 Migratory Birds: Development and operation of a commercial wind energy facility shall not have an adverse impact on migratory bird species.
- 18.5.10 Transmission Lines. The electrical transmission lines connecting the wind turbine generator to the public utility electricity distribution system shall be located underground.
- 18.5.11 Electromagnetic Interference. Any wind turbine generators shall be constructed and operated so that they do not interfere with television, telephone (including cellular and land line), microwave, navigational, or radio reception to neighboring areas. The applicant and/or operator of the facility shall be responsible for the full cost of any remediation necessary to correct any problems, including relocation or removal of the facility, caused or exacerbated by the operation of such equipment and any and all related transmission lines, transformers, and other components related thereto.
- 18.5.11.1 The applicant for commercial wind turbine generators shall pay for testing of above reception of all properties determined by the Planning Commission prior to construction and will pay to correct reception for landowners with degradation of these signals.
- 18.5.12 Landscaping Each proposed wind turbine generator or anemometer tower erected prior to a wind turbine generator shall meet the following landscaping requirements;
- 18.5.12.1 The base of the wind turbine generator or anemometer tower erected prior to a wind turbine generator shall be landscaped with a buffer of plant materials that effectively screens the view of the bases of these facilities from adjacent property used for residential purposes. The standard buffer shall consist of a landscaped strip at least four feet (4') wide outside the perimeter of the facilities.
- 18.5.12.2 Existing natural land forms on the site which effectively screen the base of the wind turbine generator or anemometer tower erected prior to a wind turbine generator from adjacent property used for residential purposes shall be preserved to the maximum extent possible.

- 18.5.12.3 Landscaping shall be designed to counter the effects of “shadow flicker” on any neighboring residences or roadways caused by the rotor rotation in the sunlight.
- 18.5.12.4 To insure compliance with these landscaping standards , the Planning Commission may require additional landscaping on the site after the installation of the wind turbine generator or anemometer tower.
- 18.5.13 State or Federal Requirements. Any proposed wind turbine generator anemometer tower shall meet or exceed any standards and regulations of the FAA, the Michigan Public Service Commission, National Electric Safety Code, U.S. Fish and Wildlife Service and any other agency of the state or federal government with the authority to regulate wind turbine generators or other tall structures in effect at the time the special use permit is approved.
- 18.5.14 Soil Conditions. A proposal for any wind turbine generator or anemometer tower shall be accompanied by a report of the soils present on the site based on soil borings, prepared by a firm which specializes in soil borings and is approved to perform such work for the Michigan Department of Transportation. The report shall include soil and geologic characteristics of the site based upon on-site sampling and testing. The soil boring reports and the proposed plans for the foundation shall be certified by a registered Professional Engineer licensed in the State of Michigan, who is practicing in his or her area of competency. In addition, the applicant shall deposit a cash bond, with the county, in an amount equal to the 50% of the cost of the foundation to assure that the foundation will be removed in the event that the tower is removed.
- 18.5.15 Aesthetics and Lighting. Any proposed wind turbine generator or anemometer tower shall meet the following requirements:
- 18.5.15.1 Each wind turbine generator or anemometer tower shall either maintain a galvanized steel finish or, subject to any applicable standards of the FAA, be painted a neutral color so as to reduce visual obtrusiveness and shall be so maintained as to be in continuous compliance with this paragraph and to prevent any visible oxidation or corrosion.
- 18.5.15.2 Each wind turbine generator, including all accessory structures, or anemometer tower shall, to the extent possible, use materials, and colors that will blend them into the natural setting and surrounding buildings. A medium gray shade is the preferred color for any wind generator or anemometer tower; however, the Planning Commission may approve an alternate color if the facility is suspected to be located within an avian migratory route or if an alternate color would otherwise benefit the community.

18.5.15.3 Each wind turbine generator or anemometer tower shall not be artificially lighted, unless required by the FAA or other applicable governmental authority. If lighting is required, the lighting alternatives and design chosen:

18.5.19.1.1 Shall be the lowest intensity allowable under FAA regulations.

18.5.15.3.2 Shall not be strobe lighting or other intermittent white lighting fixtures, unless expressly required by the FAA. Such intermittent lighting shall be alternated with steady red lights at night if acceptable to the FAA.

18.5.15.3.3 Shall be a red top light that does not pulsate or blink

18.5.15.3.4 All tower lighting required by the FAA shall be shielded to the extent possible and acceptable to the FAA to reduce glare and visibility from the ground.

18.5.13.3.5 Each wind turbine generator or anemometer tower shall be sited on the property in a location that reduces to the maximum extent possible any adverse impacts on view corridors from adjacent properties.

18.5.13.3.6 Each wind turbine generator or anemometer tower shall be a monopole or monotube style construction (as distinguished from a lattice-style tower) and shall not utilize guy wires.

18.5.16 Sign. A sign no more than four (4) square feet in area displaying an address and toll-free telephone number, answered by a person twenty-four hours per day, seven days per week, for emergency calls and informational inquiries shall be posted at the proposed wind turbine generator or anemometer tower erected prior to a wind turbine generator. No wind turbine generator tower or anemometer tower or site shall include any advertising sign.

18.5.17 Hazard Planning. An application for a wind turbine generator shall be accompanied by a hazard prevention plan. Such plan shall address the following at a minimum:

18.5.17.1 Certification that the electrical wiring between turbines, and between turbines and the utility right-of-way does not pose a fire hazard shall be signed by a registered Professional Engineer licensed in the State of Michigan, who is practicing in his or her area of competency.

18.5.17.2 The landscape plan accompanying the application shall be designed to avoid spread of fire from any source on the turbine; such

preventative measures may address the types and locations of vegetation below the turbine and on the site.

18.5.17.3 The following shall be submitted with the application for a special use permit for a wind turbine generator:

18.5.17.3.1 A listing of any hazardous fluids that may be used on site shall be provided.

18.5.17.3.2 Certification that the turbine has been designed to contain any hazardous fluids shall be provided. This certification shall be signed by a registered Professional Engineer licensed in the State of Michigan, who is practicing in his or her area of competency.

18.5.17.3.3 A statement certifying that the turbine shall be routinely inspected to ensure that no fluids are released or leaked from the turbine or any other equipment or appurtenances on the site.

18.5.17.3.4 A Hazardous Materials Waste Plan, complying with all federal, state, and county laws and regulations shall be prepared and filed. Approval by all of the above parties shall be a condition to be met prior to the issuance of any permit. Further, approvals or waivers, by the state Department of Environmental Quality, the state Department of Natural Resources and/or the Corp of Army Engineers shall also be submitted prior to the issuance of any permit.

18.5.18 Removal of Abandoned Wind Turbine Generators or Anemometer Towers. Any wind turbine generator or anemometer tower that is not operated for a continuous period of nine (9) months shall be considered abandoned, and the owner of such wind turbine generator or anemometer tower shall remove the same within ninety (90) days of receipt of notice from the County. In addition to removing the wind turbine generator, or anemometer tower, the owner shall restore the site of the wind turbine generator or anemometer tower to its original condition prior to location of the wind turbine generator or anemometer tower. Any foundation associated with a wind generator or anemometer tower shall be totally removed and the site restored to its original state including the planting of any grasses or cover crops, which may have been present prior to construction. Any and all transmission equipment, buildings and fences shall also be removed. Failure to remove an abandoned wind turbine generator or anemometer tower within the ninety (90) day period provided in this subsection, or in the event that the owner or operator of the wind turbine generator or

anemometer tower is no longer financially capable, or fails to respond to mail sent to its last address on file with the County, shall be grounds for the County to remove the wind turbine generator or anemometer tower structure and all associated equipment or appurtenances at the owner's expense. The County may sell any salvageable material, deducting the balance due from the cash bond, which the County shall require.

The County shall further require the applicant to post a cash bond equal to 50% of the original cost of the tower structure and attendant structures to assure the removal of such abandoned structures and remediation of any toxic or hazardous materials left on the site as a condition of a special use permit given pursuant to this section. This shall include the amount referred to in 18.5.12 Soil Conditions, above. In the event that a surety bond is to be substituted for a cash bond, it shall be prepaid for a period of five years, with the insurance carrier instructed to notify the County of any delinquency in payment within thirty (30) days of the occurrence of such delinquency. Such delinquency shall be considered abandonment and full and sufficient grounds for the County to terminate the special use permit and dispose of the equipment and appurtenances as stated above.

- 18.5.19 Payment of Consultant Fees. The applicant shall deposit, with the County, a sum of \$10,000.00 as partial payment for the Planning Commission expenses in hiring consultants and experts as the Planning Commission shall, at its sole discretion, deem desirable. At any time the balance of this fund shall fall below \$5,000.00, the applicant shall submit an additional \$5,000.00 so that the county's full and actual expenses of examining and verifying the data presented shall be covered in total by the applicant. This deposit shall accompany the initial application and be considered a part thereof. If at any time the balance of this fund shall fall below \$5,000.00 for a period of thirty (30) days, the application shall be considered to have been withdrawn.
- 18.5.20 Severance Clause. If any section, clause, or provision of the Ordinance is declared unconstitutional or otherwise invalid by a court of competent jurisdiction, said declaration shall not affect the validity of the remainder of the Ordinance as a whole or any part thereof, other than the part so declared to be unconstitutional or invalid.
- 18.5.21 Zone Restrictions. WTG's and appropriate sub-stations are permitted only in Agricultural Resource (AR) and Industrial (I) Districts for a period of twenty (20) years.

Amendment of Article 2.2

Article 2.2 of the Otsego County Ordinance is hereby amended to add the following new definitions to be inserted in their appropriate alphabetic location, which new definitions shall read in their entirety as follows:

ANEMOMETER

An instrument for measuring and recording the speed of the wind.

ANEMOMETER TOWER

A structure, including all accessory facilities, temporarily erected for no more than two (2) years, on which an anemometer is mounted for the purposes of documenting whether a site has wind resources sufficient for the operation of a wind turbine generator.

WIND TURBINE GENERATOR (WTG)

A tower, pylon, or other structure, including all accessory facilities, upon which any, all or some combination of the following are mounted:

- A) A wind vane, blade, or series of wind vanes or blades, or other devices mounted on a rotor for the purpose of converting wind into electrical or mechanical energy.
- B) A shaft, gear, belt, or coupling device used to connect the rotor to a generator, alternator, or other electrical or mechanical energy producing device.
- C) A generator, alternator, or other device used to convert the energy created by the rotation of the rotor into electrical or mechanical energy.

WIND TURBINE GENERATOR TOWER HEIGHT

- A) Horizontal Axis Wind Turbine Rotors: The distance between the ground and the highest point of the wind turbine generator, plus the length by which the rotor wind vanes or blades mounted on a horizontal axis wind turbine rotor exceeds the height of the wind turbine generator.
- B) Vertical Axis Wind Turbine: The distance between the ground and highest point of the wind turbine generator.

Amendment of Section 19.1

Section 19.1 of the Otsego County Zoning Ordinance is hereby amended to read in its entirety as follows:

Section 19.1.1 - Essential Service Clause Pertaining to Utilities

The erection, construction, alteration, maintenance, and operation by utilities or municipal departments or commission, of overhead or underground gas, electrical, steam or water distribution, transmission systems, collection, communication, supply or

disposal systems, including mains, drains, sewers, pipes, conduits, wires, hydrants, structures, towers, poles, electrical substations, gas regulator stations, and other similar equipment and accessories in connection therewith reasonably necessary for the furnishing of adequate service by such public utility or municipal department or commission, or for the public health or safety or general welfare, shall be permitted as authorized or regulated by any laws and the ordinances of Otsego County.