

## MOORE TOWNSHIP

### WIND PROVISIONS FOR ARTICLE XXII – SPECIAL PROVISIONS

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#### SECTION 22.01 UTILITY GRID WIND ENERGY SYSTEMS

(a) **Intent and Purpose.**

It is the intent and purpose of this section to establish rules and regulations for the construction, alteration and operation of utility grid wind energy systems, while protecting the health, welfare, safety, and quality of life of the general public, and to ensure compatible land uses in the vicinity of the areas affected by such facilities. The provisions of this section shall supplement other provisions of this ordinance regarding special approval uses for utility grid wind energy systems. In the event of a conflict between the provisions of this section and any other section of this ordinance the provisions of this section shall apply.

(b) **Definitions.** The following definitions are applicable to sections 22.01 and 22.02

- Ambient: Ambient is defined as the sound pressure level exceeded 90% of the time or L 90.
- ANSI: American National Standards Institute.
- Db(a): The sound pressure level in decibels.
- Decibel: The unit of measure used to express the magnitude of sound pressure and sound intensity.
- Decommission: To remove from active service and to remove all wind turbines, structures, driveways, electrical collection and distribution systems and other improvements in accordance with the decommissioning plan approved by the Township as part of the special approval use permit.
- Hub height: The distance from the ground level to the center of the turbine hub or horizontal rotor shaft of wind turbine.
- IEC: International Electrotechnical Commission.
- ISO: International Organization For Standardization.
- Meteorological tower: A tower that contains instruments that measure meteorological conditions.
- Nonparticipating parcel: A parcel of real estate that is not under lease, license or other property agreement with the owner/operator of a UGWES.
- Occupied structure: A structure including, but not limited to, a home, office, church, school, hospital or place of business intended for human occupation and not unoccupied on a permanent basis on the date a special issue permit for a UGWES is issued. This definition shall not include agricultural buildings and shall not include manufacturing or other places of business where the noise limits established in this ordinance are regularly exceed by the normal operations of those places excluding sound generated by a UGWES.
- Participating parcel: A parcel of real estate which is under lease, license or other agreement with the owner or operator of a UGWES. A participating parcel may consist of parcels owned by different owners. For purposes of establishing setback requirements, a participating parcel shall be under lease, license or other property agreement with the owner/operator of a UGWES for the full duration of any such agreement in effect on an adjoining parcel on which any part of the UGWES is constructed.

- Rotor: An element of a wind energy system that acts as a multi-bladed airfoil assembly, thereby extracting through rotation, kinetic energy directly from the wind.
- Shadow flicker: Alternating changes in light intensity caused by the moving blade of a wind turbine casting shadows on the ground and stationary objects, such as a window at a dwelling.
- Sound pressure: The pressure of the sound measured at a receiver.
- Sound pressure level: The sound pressure mapped to a logarithmic scale and reported in decibels (dB).
- Total height: The total height of a wind turbine shall be the distance from ground level to the top of the blade at its highest point.
- Utility grid wind energy system: An electricity generating facility consisting of one or more wind turbines under common ownership or control designed and built to provide electricity to the electric utility grid. This definition includes substations, towers, cables, wires, poles and other building and accessories used in the production of electricity by said facility. A utility grid wind energy system may be referred to in this ordinance as a UGWES.
- Wind Turbine: A wind turbine is a device that converts kinetic energy from the wind into electrical power.

(c) **Prohibited Activity.**

No UGWES shall be located, constructed, erected, or altered in Moore Township until the owner/operator thereof shall have obtained a special approval use permit as provided herein and thereafter no UGWES shall be altered or operated except in complete compliance with the provisions of that permit and this ordinance.

(d) **Special Approval Use.**

UGWES facilities shall only be allowed as a special approval use permit in the Agricultural Residential District.

(e) **Application.**

Any application for a special approval use permit for a UGWES shall include the following:

- (1) The application fee as determined by the Township Board.
- (2) An administration fee as determined by the Township Board. This fee shall be held in a segregated account, separate from any other funds held by the township and shall be used to pay all reasonable costs and expenses associated with the applicant's special use approval permit application, site plan review and approval process, which costs can include, but are not limited to, attorney fees, engineering fees, consultant fees, fees for reports and studies, and extraordinary zoning administration fees and extraordinary township planner fees. If the zoning administrator determines at any time during the review process that the funds remaining in said account will be not sufficient to pay the anticipated expenses as provided herein, the zoning administrator may require the applicant to deposit additional funds in an amount deemed sufficient to pay said additional expense. The zoning administrator shall mail written notice of the additional amount required to be deposited by first class mail to the address contained in the application. If the additional funds are not

deposited within fourteen (14) days of the date of the mailing, the zoning administrator may suspend the zoning review and approval process until the additional funds are deposited. Any funds not used for the purposes provided herein shall be returned to the applicant.

- (3) Applicant Identification: the complete name and address of the applicant, the complete name and address of the owner/operator if different than the applicant and the date the application is submitted. If the name or address of the applicant or owner/operator changes at any time before or after the issuance of a special approval use permit, written notice of said change shall be filed with the zoning administrator.
- (4) Project Description: A general description of the proposed project including the legal description of the property or properties on which the project would be located and an anticipated construction schedule.
- (5) Environmental Impact: Copy of the Environmental Impact Analysis Report as required herein.
- (6) Insurance: A commitment for liability insurance effective upon issuance of a special approval use permit.
- (7) Sound pressure Level: Copy of the Modeling and Analysis Report as required herein.
- (8) Avian and Wildlife Impact: Copy of the Avian and Wildlife Impact Analysis Report as required herein.
- (9) Shadow Flicker: Copy of the Shadow Flicker Analysis Report as required herein.
- (10) Manufacturers' Material Safety Data Sheet(s): Documentation shall include any information necessary for fire fighters and emergency responders, the type and quantity of all materials used in the operation of all equipment including, but not limited to, all lubricants and coolants.
- (11) Decommissioning: Copy of the Decommissioning Plan as required herein.
- (12) Site Plan: the applicant shall submit a site plan for each turbine and other structure which must include:
  - A. The names of all owners and the property tax identification number of all participating parcels;
  - B. Project area boundaries;
  - C. The condition of all participating parcels at the time of the application showing the location of all occupied structures, structures over 400 square feet that are not occupied, surface contours, trees in excess of 20 feet in height, ponds, lakes, streams, ditches, roads, driveways, utility easements, and overhead utility wires;
  - D. All items listed in the preceding provision that will be added or eliminated as the result of the proposed project;
  - E. The location of the proposed wind turbine or structure;
  - F. All signage, lettering, numbering and lighting;

- G. An accurate depiction of the wind turbine showing the type of construction, appearance and color;
- H. Specifications showing the size, total height, hub height and rotor diameter of the proposed wind turbine;
- I. All poles, towers, wires, buildings and other structures of the UGWES;
- J. Additional detail(s) and information as requested by the planning commission.

(f) **Standards and Requirements.**

Every UGWES shall meet the following standards and requirements:

(1) **Setbacks.**

Every wind turbine shall meet the following setback requirements measured from the center of the base of the tower:

- A. 2.0 times the total height from any occupied structure;
- B. 1,750 feet or 3.5 times the total height, whichever is greater, from the closest point of any non-participating parcel;
- C. 1.5 times the total height from any public road or above ground power distribution or communication lines.
- D. All other structures in a UGWES shall comply with setback requirements established elsewhere in this ordinance.

(2) **Safety and Security Requirements.**

- A. No structure in a UGWES shall be climbable on its exterior;
- B. All doorways and access points of all structures in a UGWES shall be secured and locked to prevent unauthorized entry;
- C. A sign shall be placed at the base of every point of access of a wind turbine warning of high voltage. Said signs shall have six (6) inch letters with  $\frac{3}{4}$  inch stroke;
- D. All wind turbines shall be equipped with manual and automatic controls to limit the speed of the rotor blades to the maximum speed designated by the manufacturer;
- E. All wind turbines shall maintain a minimum blade clearance of 50 feet from ground level;
- F. All guy wires and anchors must be clearly visible to a height of six (6) feet above ground level.

(3) **Signal Interferences.**

- A. No UGWES shall interfere with any existing fixed broadcast, retransmission or reception antennae for radio, television, wireless telephone or other personal communication system or emergency broadcast system. In the event such interference shall occur the owner/operator shall provide a replacement signal to the effected party within seven days at no additional cost that will restore reception to at least the level present before the operation of the UGWES;
- B. No UGWES shall cause significant interference to any microwave communication link which is in operation at the time a special approval use permit for the UGWES is issued;

(4) **Sound Pressure Level.**

No UGWES shall produce sound exceeding the following limits:

- A. 45dBA or the ambient sound pressure plus 5dBA, whichever is greater, for more than 5% of any hour measured outside and immediately adjacent to any occupied structure which was located on any participating parcel or at the closest point on the property line of a parcel of property which was non-participating at the time a special approval use permit for the UGWES was issued;
- B. 5 dBA or the ambient sound pressure plus 5dBA, whichever is greater, for more than 5% of any hour measured outside and immediately adjacent to any occupied structure which was located on any participating parcel or at the closest point of any property line of any non-participating parcel at the time a special approval use permit for the UGWES was issued;
- C. As part of the application the applicant shall provide modeling and analysis that will confirm that the UGWES will not exceed the maximum permitted sound pressure levels provided in this ordinance. Modeling and analysis shall conform to the current version of IEC 61400 and ISO 9613. After installation of the UGWES sound pressure level measurements shall be performed by an independent qualified professional approved by the Zoning Administrator according to the most recent procedures in the most current version of ANSI S12.18. All sound pressure levels shall be measured with a sound meter that meets or exceeds the most current version of ANSI S1.4 specifications for a Type II sound meter. Documentation of the sound pressure level measurements shall be provided to the Township within 120 days of the commercial operation of the UGWES.

(5) **Visual Appearance.**

All structures in a UGWES shall meet the following visual requirements:

- A. Wind turbines shall be mounted on tubular towers with solid exteriors;
- B. Wind turbines shall be painted a non-reflective non-obtrusive color. The exterior shall be maintained in good condition and the towers shall be repainted whenever rust, corrosion or peeling or flaking paint becomes visible;
- C. No structure in a UGWES shall be lighted unless so required by statute, ordinance, rule or regulation. Any required lighting shall not exceed Federal Aviation Administration minimum standards and, to the extent possible, shall be shielded to reduce glare and visibility from the ground;
- D. No structure in a UGWES shall contain letters, numbers or symbols other than the name of the manufacturer and the name of the owner/operator unless otherwise required by this ordinance or any other statute, ordinance, rule or regulation. Any such letters, numbers or symbols may not exceed six inches in height. Every structure in a UGWES must have a sign or lettering identifying its owner/operator and containing contact information;
- E. Electrical collection and transmission lines, transformers and conductors may be placed overhead adjacent to public roads or along easements otherwise dedicated to the transmission of electric power. All such lines, transformers and conductors shall comply with any Avian Power Line Interaction Committee (APLIC) guidelines to prevent avian mortality. All such

lines at any other location shall be placed underground at a minimum depth of 60 inches below grade with a tracer tape to assist in their location.

**(6) Government Standards and Regulations.**

UGWESs shall comply with all statutes, codes, ordinances, and regulations issued by the federal government, State of Michigan, or any other governmental agency having jurisdiction including, but not limited to, state construction and electrical codes, local building permit requirements, Federal Aviation Administration requirements, the Michigan Airport Zoning Act (Public Act 23 of 1950, MCL 259.431 et.seq.), the Michigan Tall Structures Act (Public Act 259 of 1959, MCL 259.481 et.seq.), Michigan Public Service Commission regulations, Federal Energy Regulatory commission Interconnection Standards, and local jurisdiction airport overly zone regulations. Current copies of any permits or other authorizations issued by any federal, State of Michigan or other governmental agency having jurisdiction shall be filed and maintained with the zoning administrator.

**(7) Environmental Impact.**

- A. The applicant shall have an independent qualified professional approved by the Zoning Administrator prepare a report identifying and assessing any potential impacts on the natural environment, including wetlands and other fragile ecosystems, historical and cultural sites, and antiquities and containing a plan setting forth measures to be taken to eliminate, minimize or mitigate any adverse impacts identified. The report and plan shall be submitted to the Township along with the special use approval application. If approved, any plan shall become a requirement of the special approval use permit.
- B. The owner/operator shall comply with the Michigan Natural Resources and Environmental Protection Act (Public Act 451 of 1914, MCL 324.101 et.seq.)
- C. The applicant shall forthwith repair any damage to any public roads, drains and infrastructure caused by the construction, maintenance or operation of any UGWES.

**(8) Shadow Flicker.**

- A. The applicant shall prepare a shadow flicker modeling report showing the potential shadow flicker created by each proposed wind turbine on all occupied structures and on all non-participating parcels. The report shall identify the location of all occupied structures and all non-participating parcels affected by shadow flicker, the expected duration of the shadow flicker at each locations throughout the course of the year, and the anticipated effect of shadow flicker on occupants at each location.
- B. The applicant shall submit a plan to eliminate or mitigate the effects of shadow flicker at each occupied structure identified in the modeling report. The Township may require that the plan also eliminate or mitigate the effects of shadow flicker on non-participating parcels, or portions thereof, if it is determined that shadow flicker will have an unacceptable impact on the health, safety or welfare of the owners or occupants of said non-participating parcel or portions thereof. If approved, any plan shall become a requirement of the special approval use permit.

(9) **Avian and Wildlife Impact.**

- A. The applicant shall have an independent qualified professional approved by the Zoning Administrator prepare a report identifying and assessing any potential impacts of the Proposed UGWES on wildlife. The report shall:
- (i) identify areas requiring special scrutiny including wildlife refuges, areas containing high concentrations of birds, bat hibernacula, wooded ridge tops that attract wildlife, sites frequented by endangered species, significant bird migration pathways, and areas that have landscape features known to attract large numbers of raptors;
  - (ii) identify the types of wildlife present in significant numbers in any area effected by the UGWES project and the anticipated impact of the project on said wildlife;
  - (iii) identify any threatened or endangered species in any area effected by the UGWES project and the anticipated impact of the project on each threatened or endangered species;
  - (iv) propose a plan to eliminate or mitigate the impact of the UGWES project on wildlife, threatened species and endangered species. If approved, any plan shall become a requirement of the special approval use permit.

(10) **Insurance.**

The owner/operator of any UGWES shall procure and maintain liability insurance on the entire UGWES providing coverage for personal injury and property damage with limits of not less than \$2,000,000 per occurrence with a deductible of not more than \$10,000 per occurrence, naming Moore Township as an additional insured. Said liability policy shall be non-cancellable without 60 days written notice by the insurer to the zoning administrator. Proof of insurance and a copy of the policy shall be filed with the zoning administrator at least 60 days before the anniversary date of any policy and at least 60 days prior to the effective date of any change or modification of said policy.

(11) **Decommissioning.**

- A. If any wind turbine does not produce electricity for a period of 180 consecutive days, the township may require that it be decommissioned along with all associated driveways, poles, electrical collection and distribution systems not otherwise used and all other associated structures. The owner/operator shall notify the zoning administrator in writing if any wind turbine does not produce electricity for 30 consecutive days and shall notify the zoning administrator in writing when the production of electricity at that wind turbine resumes. The zoning administrator shall notify the owner/operator in writing at the address on file with the Township of the Township's decision to require decommissioning. Within 30 days of the receipt of said notice the owner/operator shall commence and diligently pursue decommissioning in accordance with the decommissioning plan which became a requirement of the special approval use permit.
- B. The applicant shall prepare a decommissioning plan which shall include:
- (i) the anticipated life of the project;
  - (ii) the estimated decommissioning costs net of salvage value in current dollars.
  - (iii) the method of insuring that funds will be available for decommissioning and restoration;

- (iv) the manner in which each wind turbine and other structure will be decommissioned and the site restored. At a minimum the plan shall, except as otherwise provided herein, provide for the dismantling and removal of all wind turbines, meteorological towers, poles, electrical collection and distribution systems that will not continue to be used, driveways, structures and other improvements;
- (v) the plan may include that underground cables located at least five feet below ground level may remain if properly terminated;
- (vi) the plan may require wind turbine bases need only be removed to a level at least four feet below ground level unless prohibited by any other law or regulation;
- (vii) a provision that the location of any wind turbine base, cable or other structure or item left below ground level must be documented upon a certified survey and recorded with the Sanilac County Register of Deeds.

If approved, any plan shall become a requirement of the special use approval permit.

- C. The owner/operator shall provide to the Township a method of ensuring that the entire UGWES will be decommissioned as required herein by a surety bond, escrow deposit or other method deemed acceptable to the Township. Any such method shall:
  - (i) be issued to or for the benefit of the Township to provide sufficient funds to decommission or complete the decommissioning of the entire UGWES in accordance with the provisions of the ordinance in the event the owner/operator fails to do so;
  - (ii) be issued in an amount equal to 1.5 times the estimated decommissioning costs;
  - (iii) be irrevocable for a period of not less than five years;
  - (iv) contain a provision requiring the issuing entity to notify the zoning administrator at least 90 days prior to any expiration if the surety bond, escrow deposit or other method of security will not be renewed and irrevocable for a subsequent, continuous period of not less than five years;
  - (v) be prepaid for a term of not less than 5 years with each subsequent term being prepaid at least 90 days prior to the expiration of any prior term with proof of payment being promptly provided to the zoning administrator;
  - (vi) be issued or deposited by an entity acceptable to the Township;
  - (vii) meet such other requirements reasonably imposed by the Township to ensure the availability of funds to decommission or complete the decommissioning of the entire UGWES in accordance with the provisions of this ordinance if the owner/operator fails to do so.
  
- D. At least 90 days prior to the 5<sup>th</sup> anniversary of the issuance of the special use approval permit and at least 90 days but not more than 180 days prior to each 5<sup>th</sup> anniversary of the issuance of the special use approval permit thereafter the owner/operator shall provide the Zoning Administrator with a revised estimate of the decommissioning costs. If the revised estimate exceeds the prior estimate the amount of the bond, escrow deposit, irrevocable letter of credit or other method of security shall be increased to 1.5 times the new estimate.

**(g) Notification of Written Complaint.**

The owner/operator shall submit a written report to the zoning administrator of any written complaints regarding the UWGES received by the owner/operator. The reports shall be submitted on a monthly bases commencing one month after the UWGES begins commercial operation. The report shall:

- (1) include a copy of the complaint;
- (2) provide the name and address of the person or persons making the complaint;
- (3) identify the wind turbine or other structure which is the subject of the complaint;
- (4) describe in detail the steps taken by the owner/operator to resolve each pending complaint;
- (5) provide the status of each complaint that has not been resolved.

**(h) Violation.**

In the event of a violation of any provision of this ordinance, any condition of the special use approval permit, or any statute, code, ordinance or regulation of the federal government, State of Michigan, or any governmental agency having jurisdiction the zoning administrator shall send written notice of said violation to the owner/operator of the UGWES at the address on file with the Township. If the violation is not cured within 30 days of the date of said notice, the zoning administrator may revoke the special use approval permit and may resort to any enforcement procedures provided elsewhere in this ordinance or, in the alternative, file an action in a court of competent jurisdiction to abate the nuisance. If abatement proceedings are commenced and a judgment is rendered in favor of the Township, the owner/operator shall be responsible for the Township's costs and expenses including, but not limited to, attorney fees.

**(i) Procedure for Special Approval Use for UGWES.**

- (1) The owner/operator shall submit an application for a special approval use along with 14 additional copies with the zoning administrator. The zoning administrator shall review the application to determine that it meets all of the requirements set forth in this ordinance. If an application is deficient, the zoning administrator shall notify the applicant in writing of any deficiencies. When the zoning administrator determines that the application meets the requirements of this ordinance he or she shall submit the application to the planning commission.
- (2) The planning commission shall review the application at its next scheduled meeting and at any subsequent regular or special meetings until its review is complete.
- (3) Upon completion of the review the planning commission shall conduct a public hearing at which it shall consider and render a decision on the application. Notice of the public hearing shall be published in a newspaper of general circulation in Moore Township not less than 15 days before the date of the hearing. Written notice of the public hearing shall be given to the applicant, to all persons to whom real property is assessed within 1750 feet or 3.5 times the total height of each wind turbine, whichever is greater, of the property lines of all property which is the subject of the application and to the occupants of all structures within 1750 feet of the property lines of all property which is the subject of the application regardless of whether the property is located within the zoning jurisdiction not less than 15 days prior to the hearing. A copy of the Shadow Flicker Analysis Report shall be included with the notice to each occupied structure identified as being affected by shadow flicker

modeling report. Except as otherwise provided herein the notice shall comply with the requirements of MCL 125.3103 and MCL 125.3502(2) except that, since a public hearing is being conducted, the notice need not indicate that a public hearing on application may be requested.

(4) Standards.

Applications for a special approval use permit shall be granted, granted with conditions or denied, based on the following standards:

- A. The proposed UGWES shall meet all of the requirement of this ordinance;
- B. The UGWES shall not create a nuisance due to dust, smell, vibration, noise, smoke, lighting, flicker, or other nuisance factors which will not be adequately mitigated as provided in the application;
- C. The UGWES will not have an adverse impact on the environment, including avian and wildlife, which will not be adequately mitigated as provided in the application.

(5) Decision.

The planning commission may grant, grant with conditions, or deny the application. The decision shall be made at the public hearing or at an adjourned public hearing or, if additional time is required, at an adjourned public hearing which is scheduled at the previous public hearing. The decision shall be incorporated in a statement of findings and conclusions relative to the special approval use which specifies a basis for the decision and any conditions imposed.

(6) A special approval use permit shall expire if construction is not commenced and diligently pursued within one year from the date of issuance.

(7) The decision of the planning commission may be appealed to the zoning board of appeals.