

Wind Energy System Ordinance

Ordinance No. _____

The Township of Hopkins Ordains:

SECTION 1: Add CHAPTER XXI-C, WIND ENERGY SYSTEM ORDINANCE, to read as follows:

- a. Purpose: The purpose of this section is to establish standards and procedures by which the installation and operation of a WES shall be regulated within the Township, in order to promote the safe, effective and efficient use of wind energy.
- b. Definitions:
 1. Wind Energy System (WES): shall mean any combination of the following:
 - i. A mill or machine operated by wind acting on oblique vanes or sails that radiate from a horizontal shaft;
 - ii. A surface area such as a blade, rotor, or similar device, either variable or fixed, for utilizing the wind for electrical or mechanical power;
 - iii. A shaft, gearing, belt or coupling utilized to convert the rotation of the surface area into a form suitable for driving a generator, alternator, or other electricity-producing device;
 - iv. The generator, alternator, or other device to convert the mechanical energy of the surface area into electrical energy;
 - v. The tower, pylon, or other structure upon which any, all or some combination of the above are mounted;
(Note: for purposes of this section a windmill traditionally used to pump water shall not be considered a Wind Energy System.)
 2. On Site Use Wind Energy System- A WES for which the purpose and use is to provide energy only to the property on which the WES structure is located, or to adjacent properties under the same ownership or control, or by mutual consent of adjacent property owners.
 3. Single WES for Commercial Purposes- A single WES placed upon a lot or parcel with the intent to sell or provide electricity to a site or location other than the premises upon which the WES is located. The WES may or may not be owned by the owner of the property upon which the WES is placed.
 4. Wind Farm- Clusters of two or more WES placed upon a parcel(s) with the intent to sell or provide electricity to a site or location other than the premises upon which the WES are located. The WES may or may not be owned by the owner of the property upon which the WES is placed.
 5. Utility Grid Wind Energy Systems- A WES designed and constructed to provide electricity to the electric utility grid.

6. Structure-Mounted WES: A WES mounted or attached to an existing structure or building.
7. Interconnected WES: A WES which is electrically connected to the local electrical power utility system and can provide power to the local electrical power utility system.
8. WES Height: The distance from the ground at normal grade and the highest point of the WES which is the tip of a rotor blade when the blade is in full vertical position.
9. WES Setback: The distance from the base of the tower or structure upon which the WES is mounted to the nearest lot line. In the case of multiple parcels utilized for multiple or single WES, the setbacks shall be taken from the outside boundary of the parcels utilized for the WES project.
10. Nacelle: In a wind turbine, the nacelle refers to the structure which houses all of the generating components, gearbox, drive train, and other components.
11. Shadow Flicker: Alternating changes in light intensity caused by the moving blade of a WES casting shadows on the ground and stationary objects such as dwellings.
12. Applicant: The person, firm, corporation, company, limited liability corporation or other entity which applies for Township approval under this section, as well as the applicant's successor(s), assignee(s), and/or transferee(s) to any approved WES. An applicant must have the legal authority to represent and bind the landowner or lessee who will construct, own and operate the WES. The obligations regarding a zoning approval for any approved WES shall be with the land owner and the owner(s) of the WES and jointly and severally with the owner and operator or lessee of the WES if different than the owner.

C. Wind Energy Systems Allowed As A Permitted Use:

Any On Site Use Wind Energy System including structure mounted WES which is 65 feet or less in total height shall be a permitted use in all zoning districts, subject to the following:

1. The height of the WES with the blade in vertical position shall not exceed 65 feet.
2. A WES shall be set back from all lot lines a minimum distance which is at least equal to 1.1 times the height of the WES as measured from the lot line to the base of the tower and no portion of the WES, including the guy wire anchors, shall be located within or above the required front, side, or rear yard setback.
3. A structure mounted WES shall have a minimum distance from the nearest property line which is at least equal to 1.1 times the height of the WES as measured from the point of attachment to

the structure or building to the top of the WES with the blade in the vertical position.

4. The blade arcs created by a WES mounted on an existing structure shall have a minimum clearance of eight feet or be designed so the blade or other moving parts do not present a safety hazard.
5. A permit must be obtained from Hopkins Township or designated Zoning Administrator to construct and operate any WES, including structure mounted WES, 65 feet or less in total height. A permit shall be issued after an inspection of the WES by Hopkins Township or authorized representative thereof, and where the inspection finds that the WES complies with all applicable state construction and electrical codes, local building permit requirements, and all manufacturers' installation instructions.
6. An On Site Use WES may provide electrical power to more than one dwelling unit, provided the dwelling units are located on property or properties that are adjacent to the property or properties on which the WES is located.

D. WIND ENERGY SYSTEMS WHICH REQUIRE A SPECIAL USE PERMIT

Any WES including a structure mounted WES which is greater than 65 feet in height, Wind Farms, Single WES for Commercial Purposes, and Utility Grid Wind Energy Systems may be allowed as a Special Use only within the AG and RO Zoning Districts, subject to the following regulations and requirements of this section and also the general special land use review procedures and standards of Chapter XII-B of this Zoning Ordinance:

1. Site Plan Requirements: For those WES for which a Special Use is required, the following items shall be included with or on the site plan:
 1. All requirements for a site plan contained in Chapter XII-D herein.
 2. Dimensions of the area purchases or leased which is to contain the WES.
 3. Location and height of all existing and proposed buildings, structures, electrical lines, towers, guy wires, guy wire anchors, security fencing, and any other above-ground structures proposed or existing for the parcel or parcels containing the WES.
 4. Specific distances from the WES structures to all other buildings, structures, and above-ground utilities on the parcel or parcels upon which the WES is proposed to be located.
 5. Location of all existing and proposed overhead and underground electrical transmission or distribution lines, located on the lot or parcel(s) upon which the WES is proposed to be located, as well as within 300 feet of the boundaries of the parcel(s).

6. Locations and height of all buildings and structures within 300 feet of the exterior boundaries of the lot or parcel upon which the WES is proposed to be located.
 7. Contour Elevations of all WES buildings and structures and the elevations of all existing and proposed structures within 300 feet of the parcel(s) upon which the WES is proposed to be located.
 8. Land uses within 300 feet of the parcel.
 9. Access drives to the WES including dimensions and composition, with a narrative describing proposed maintenance of the drives.
 10. All lighting proposed for the site, including diagrams of lighting fixtures proposed if requested by the Planning Commission.
 11. Security measures proposed to prevent unauthorized trespass and access.
 12. Standard drawings of the structural components of the WES, including structures, towers, bases, and footings. A registered engineer shall certify drawings and any necessary calculations that show that the system complies with all applicable local, state and federal building, structural and electrical codes.
 13. The Planning Commission may waive or modify the above requirements at the request of the applicant if it is determined that those items would not be needed to properly review the project.
2. Height- The height of a WES for which a Special Use is required shall be determined by compliance with the requirements of this Section XXI-C (1)
 3. Setbacks- the setback for a WES shall be at least equal to 1.1 times the height of the WES. No part of a WES including any guy wire anchors shall be located within or above any required front, side, or rear yard setback. A reasonable setback shall be maintained from overhead electrical transmission lines.
 4. Rotor or Blade Clearance- blade arcs created by a WES shall have a minimum of 30 feet of clearance over and from any structure, adjoining property or tree.
 5. Lighting- a WES shall provide lighting as may be required by the FAA.
 6. Maintenance Program Required- the applicant shall provide a written description of the maintenance program to be used to maintain the WES, including a maintenance schedule of types of maintenance tasks to be performed.
 7. Decommissioning Plan Required- The applicant shall provide a written description of the anticipated life of the system and facility; the estimated cost of decommissioning; the method of ensuring that funds will be available for decommissioning and restoration of the site; and removal and restoration procedures

and schedules that will be employed if the WES becomes obsolete or abandoned.

8. Site Standards and Visual Impact:
 1. A WES shall be designed and placed in such a manner to minimize adverse visual and noise impacts on neighboring areas.
 2. A WES project with more than one WES structure or tower shall utilize similar design, size, color, operation, and appearance throughout the project as is practicable.
9. Insurance: The WES operator shall maintain a current insurance policy which will cover installation and operation of the WES. The amount of the policy shall be a condition of approval.
10. Performance Guarantee: If a Special Use is approved pursuant to this section, the Planning Commission may require a security in the form of a cash deposit, surety bond, or irrevocable letter of credit in a form, amount, time duration and with a financial institution deemed acceptable to the Township, which will be furnished by the applicant to the Township in order to ensure full compliance with this section and any conditions of approval.

E. STANDARDS FOR ALL WIND ENERGY SYSTEMS

All WES shall comply with the following:

1. Sound Pressure Level:
 - a. On Site Wind Energy Systems shall not exceed 55 dB (A) at the property line closest to the WES. This sound pressure level may be exceeded during short-term events such as severe wind storms. If the ambient sound pressure level exceeds 55 dB (A) plus 5 dB (A), the standard shall be ambient dB(A) plus 5 dB (A).
 - b. Utility Grid Systems and Wind Farms shall be subject to the requirements of Section **XXI-C** (E) (a) above but the sound pressure level shall be measured at the property line closest to the WES at the outside boundary of all property used for the Utility Grid System. In addition, the applicant shall provide modeling and analysis that will demonstrate that the Utility Grid System or Wind Farm will not exceed the maximum permitted sound pressure.
2. Shadow Flicker- The Planning Commission or Zoning Administrator may request that the applicant perform an analysis of potential shadow flicker. The analysis shall identify locations of shadow flicker that may occur, and shall describe measures such as screening that shall be taken to eliminate or minimize the shadow flicker.
3. Construction Codes and Interconnection Standards-
 - a. All applicable state construction and electrical codes and local building requirements;

- b. Federal Aviation Administration requirements
 - c. The Michigan Airport Zoning Act, Public Act 23 of 1950, as amended;
 - d. The Michigan Tall Structures Act, Public Act 259 of 1959, as amended;
 - e. Private landing strips in or adjacent to Hopkins Township
 - f. The Michigan Public Service Commission and Federal Energy Regulatory Commission if the WES is an interconnected system
4. Safety:
- a. Each WES shall be equipped with both a manual and automatic braking device capable of stopping the WES operation in high winds so that the rotational speed of the rotor blade does not exceed the design limits of the rotor.
 - b. To prevent unauthorized access, each WES must comply with at least one of the following provisions, and more than one if required by the Planning Commission:
 - i. Tower climbing apparatus shall not be located within twelve feet of the ground.
 - ii. A locked anti-climb device shall be installed and maintained.
 - iii. Any tower capable of being climbed shall be enclosed by a locked, protective fence at least ten feet high with barbed wire fence.
 - c. All WES shall have lightning protection.
 - d. If a tower is supported by guy wires, the wires shall be clearly visible to the height of at least ten feet above the guy wire anchors.
 - e. The minimum height of the lowest position of the rotor or blade shall be at least thirty feet above the ground.
5. Signs:
- a. Each WES shall have one sign not to exceed two square feet posted at the base of the tower, or, if the structure is fenced, on the fence. The sign shall include the following information:
 - i. The words "Warning: High Voltage"
 - ii. Emergency phone numbers
 - b. A WES shall not include any advertising of any kind, except the nacelle may have lettering that exhibits the manufacturers' and/or owner's identification.

6. Electromagnetic Interference: WES shall be designed, constructed and operated so as not to cause radio and television interference.
7. Maintenance: WES must be kept and maintained in good repair and condition at all times and shall not pose a potential safety hazard.
8. All distribution lines from the WES shall be located and maintained underground, both on the property where the WES will be located and off-site. The Planning Commission may waive the requirement that distribution lines for the WES which are located off-site (i.e. are not located on or above the property where the WES will be located) be located and maintained underground if the Planning Commission determines that to install, place, or maintain such distribution lines underground would be impractical or unreasonably expensive.

SECTION 2: SEVERABILITY.

The various parts, sections and clauses of this Ordinance are hereby declared to be severable. If any part, sentence, paragraph, section, or clause is adjudged unconstitutional or invalid by a court of competent jurisdiction, the remainder of the Ordinance shall not be affected thereby.

SECTION 3: EFFECTIVE DATE

This ordinance shall become effective seven days after publication in a newspaper of general circulation in the Township.

Motion by _____, Seconded by _____

YEAS: _____

NAYS: _____

ABSENT: _____

ORDINANCE DECLARED ADOPTED

 Lisa Battjes, Clerk
 Hopkins Township

I hereby certify the foregoing to be a true copy of an ordinance adopted at a regular meeting of Hopkins Township Board held on _____, 2009. Public notice of said meeting was given as provided by law.

 Lisa Battjes, Clerk
 Hopkins Township