

**TOWNSHIP OF MUSSEY  
ST. CLAIR COUNTY, MICHIGAN  
ORDINANCE # 28**

**AN ORDINANCE TO AMEND THE TOWNSHIP OF MUSSEY ZONING ORDINANCE TO PROVIDE FOR WIND ENERGY SYSTEMS (WINDMILLS & WIND FARMS) AND THEIR REGULATION**

**THE TOWNSHIP OF MUSSEY ORDAINS:**

**SECTION 1 - PURPOSE:**

The purpose of this Ordinance is to amend the Zoning Ordinance to provide for wind energy systems (windmills & wind farms) and their regulation in the Township of Mussey.

**SECTION 2 - AMENDMENT:**

The Zoning Ordinance, Article 2, Definitions, is hereby, amended by adding the following:

Anemometer Tower: An anemometer tower means a freestanding tower (or other structural means of mounting) containing instrumentation such as anemometers that is designed to provide present moment wind data for use by the supervisory control and data acquisition (SCADA) system which is a temporary accessory land use to either a proposed on-site use wind energy system (windmill) or a utility grid wind energy system (wind farm).

On-Site Use Wind Energy System: A wind energy conversion system (windmill) which converts wind energy into electricity (or other form of usable energy) through the use of a wind turbine generator and includes turbine, blades, and tower as well as related electrical equipment. Only one (1) windmill is involved and the energy produced is intended to be primarily used on-site. Windmills with a power generation capacity of 5 kilowatts (or equivalent) or less (e.g. for livestock watering tanks), that are located in the AG district are exempt.

Utility Grid Wind Energy System (Wind Farms): A wind energy conversion system (windmill(s)) which converts wind energy into electricity (or other form of usable energy) through the use of a wind turbine generator and includes the turbine, blades, and tower as well as related electrical equipment. One or more windmills may be involved and the energy produced is intended to be primarily used off-site. Off-site wiring to connect the wind energy conversion system to the grid is not included in this definition.

### SECTION 3 - AMENDMENT:

The Zoning Ordinance, Article 12, General Provisions, is hereby, amended by adding the following:

#### SECTION 1225. ON-SITE USE WIND SYSTEMS

An on-site use wind energy system (see Article 2 for definition) is intended to first serve the needs of the applicant. A utility grid wind energy system (see Article 2 for definition) is not a permitted use under this Section. A utility grid wind energy system is separately provided for and regulated as a special land use (Section 1337) in the AG and LI districts. An anemometer tower shall abide by the same regulations below for on-site wind systems and shall be removed before an on-site use wind system is installed.

##### A. General Requirements in All Zoning Districts

1. **Setbacks.** The base of tower shall be setback a distance of not less than 1-1/2 times the height of tower from the nearest property line. In addition, no part of the wind energy system structure, including guy wire anchors, may extend closer than ten (10) feet to the nearest property line.
2. **Noise.** Sound pressure levels shall not exceed 55 dB(A) at the property line closest to the wind energy system. This sound pressure level may be exceeded during short-term events such as utility outages and/or severe wind storms. If the ambient sound pressure level exceeds 55 dB(A), the standard shall be ambient dB(A) plus 5 dB(A).
3. **Shadow flicker.** The applicant must demonstrate that no adverse shadow flicker impact will occur from sunrise to sunset throughout the year on any occupied buildings and lands of adjacent properties. Measures to eliminate or mitigate any potential shadow flicker impacts shall be identified and be made known to adjacent property owners.
4. **Safety.**
  - a. *Vertical Clearance.* The minimum vertical blade tip clearance from grade shall be twenty (20) feet for a wind energy system employing a horizontal axis rotor. Blade or rotor arc must be demonstrated to be a safe and reasonable distance from any separate building, structure, utility wire, or tree.
  - b. *Guy Wire Visibility.* If a wind energy system tower is supported by guy wires, the wires shall be clearly visible to a height of at least six (6) feet above the guy wire anchors.
  - c. *Rotor or Blade Integrity Protection.* An on-site use wind energy system shall have automatic braking, governing, or a feathering system to prevent uncontrolled rotation or over speeding.

- d. *Lightning*. All wind energy system towers shall have lightning protection.
  - 5. Construction Codes, Towers, & Interconnection Standards. On-site use wind energy systems, including towers, shall comply with all applicable state construction and electrical codes and local building permit requirements. On-site use wind energy systems, including towers, shall comply with Federal Aviation Administration requirements, the Michigan Airport Zoning Act, the Michigan Tall Structures Act, and any local jurisdiction airport overlay zone regulations. If an on-site use wind energy system is attached to a building or structure, the building inspector must approve it as being safe and secure and in accordance with all applicable state construction and electrical codes.
  - 6. Wiring. All wiring between the tower and the principal building shall be underground.
- B. Residential Districts (except AG). When located in SF, R-1, RM, and RC Districts, the following additional regulations shall apply:
- 1. An on-site use wind energy system shall be located only in a rear yard, or if attached to a building or other structure it shall be located at the rear of said building or structure.
  - 2. The height of the tower above the average grade of the lot shall not exceed 65 feet to the top of the blade in its vertical position.
  - 3. Only one (1) wind energy system is permitted per lot or premises.
- C. Business Districts. When located in B-1 or B-2 Districts, the height of the tower above the average grade of the lot shall not exceed 75 feet to the top of the blade in its vertical position.
- D. Agricultural and Industrial Districts. When located in AG or LI Districts the height of the tower may exceed district height limits. When located in AG Districts an on-site use wind energy system shall be located only in a rear yard when the subject lot or parcel contains a residence, or if attached to a building or other structure it shall be located at the rear of said building or structure.
- E. Decommissioning. The on-site use wind energy system and all appurtenances thereto shall be removed from the site within one (1) year after the system is no longer in use (not generating any electricity for over 12 months). The owner of the land upon which the system is located shall be responsible for such removal. A system which is not so removed shall constitute a public nuisance per se.

The applicant shall post a bond (cash or irrevocable bank letter of credit) with the Township in an amount sufficient for the removal of the on-site use wind energy system (including all accessory buildings and structures), clean up of the site including removal of the foundations and restoration of the site to a condition equal to or better than that which existed prior to the installation of the system.

#### **SECTION 4 - AMENDMENT:**

The Zoning Ordinance, Article 13, Special Land Use Approval Requirements, is hereby, amended by adding the following:

#### **SECTION 1337. UTILITY GRID WIND ENERGY SYSTEMS (WIND FARMS)**

A utility grid wind energy system (wind farm) is a wind energy system that is designed and built to provide electricity to the electric utility grid. These wind farms are intended to be so constructed and located to be compatible with other land uses such as farms and industrial uses, while protecting and being distant from residential developments. An anemometer tower shall abide by the same regulations below for a utility grid wind energy system and shall be removed before a utility grid wind energy system is installed. Utility grid wind energy systems may be permitted as a special land use in the AG, Agricultural and LI, Light Industrial districts subject to the following conditions:

- A. Setbacks. Any towers shall be setback a minimum of one-thousand three-hundred and twenty (1,320') feet from any residential district, except the AG, Agricultural district, and one-thousand (1,000') feet from any existing off-site residence. Furthermore, the base of any tower shall be setback from the nearest property line, a distance of not less than 1-½ times the height of the tower. In addition, no part of the wind energy system, including any guy wire anchors, may extend closer than forty (40') feet to any property line or existing right-of-way line, unless a plan for location(s) of accessory structures and equipment is presented (including screening) and is approved as part of the site plan. Land included within such minimum setback areas from a property line shall remain undivided and undeveloped with other structures not accessory to the tower.
- B. Noise. Sound pressure levels shall not exceed 55 dB(A) at the property line closest to the wind energy system. This sound pressure level may be exceeded during short-term events such as utility outages and/or severe wind storms. If the ambient sound pressure level exceeds 55 dB(A), the standard shall be ambient dB(A) plus 5 dB(A).
- C. Shadow flicker. The applicant must demonstrate that no adverse shadow flicker impact will occur from sun-rise to sun-set throughout the year on any occupied buildings and lands of adjacent properties. Measures to eliminate or mitigate any potential shadow flicker impacts shall be identified and be made known to adjacent property owners.
- D. Safety.
  - 1. Clearances. The minimum vertical blade tip clearance from grade shall be thirty (30') feet for a wind energy system employing a horizontal axis rotor. Blade or rotor arc must be demonstrated to be a safe and reasonable distance (at least twenty (20') feet) from any separate building, structure, utility wire, or tree.

2. Guy Wire Visibility. If a wind energy system tower is supported by guy wires, the wires shall be clearly visible to a height of a least six (6') feet above the guy wire anchors.
  3. Rotor or Blade Integrity Protection. A wind energy system shall have automatic braking, governing, or a feathering system to prevent uncontrolled rotation or over speeding.
  4. Lightning. All wind energy system towers shall have lightning protection.
- E. Construction Codes, Towers and Interconnection Standards. Wind energy systems, including towers, shall comply with all applicable state construction and electrical codes and local building permit requirements. Wind energy systems, including towers, shall comply with Federal Aviation Administration requirements, the regulations of the Michigan Aeronautics Commission, and the Michigan Tall Structures Act. If a utility grid wind energy system is attached to a building or structure, the building inspector must approve it as being safe and secure and in accordance with all applicable state construction and electrical codes.
- F. A utility grid wind energy system (wind farm) may exceed district height limits. Multiple towers are permitted.
- G. Miscellaneous Requirements.
1. Electromagnetic Interference. No wind energy system shall be installed in any location where its proximity to existing fixed broadcast, retransmission, or reception antennae for radio, television, or wireless telephone or other personal communication systems would produce electromagnetic interference with signal transmission or reception unless the applicant provides a replacement signal to the affected party that will restore reception to at least the level present before operation of the wind energy system. The applicant shall submit documentation from the manufacturer which demonstrates that the wind energy systems' generation of electromagnetic energy falls within a range that minimizes or eliminates any off-site interference.
  2. Vibration/Enhanced wind currents. No wind energy system generated vibrations or enhanced wind currents shall be humanly perceptible beyond the property boundaries of the lot or parcel on which the wind energy system is located.
  3. The Manufacturer's Material Safety Data Sheet(s) shall be provided to the Township with the application. Documentation shall include the type and quantity of all materials used in the operation of all equipment including, but not limited to, all lubricants and coolants.

4. The applicant shall provide documentation that the St. Clair County Road Commission has been contacted, and if required, that a performance bond has been posted (or other measures have been taken) for the protection and/or restoration of all roads over which heavy equipment or materials will be transported.
- H. Decommissioning. The utility grid wind energy system (wind farm) and all appurtenances thereto shall be removed from the site within one (1) year after the wind energy system is no longer in use (not generating any electricity for over 12 months). The owner of the land upon which the system is located shall be responsible for such removal. A wind energy system which is not so removed shall constitute a public nuisance per se.

The applicant shall post a bond (cash or irrevocable bank letter of credit) with the Township in an amount sufficient for the removal of the utility grid wind energy system (wind farm) including all accessory buildings and structures, clean up of the site including removal of the foundations and restoration of the site to a condition equal to or better than that which existed prior to the installation of the system.

- I. A developer may seek planning commission approval of a utility grid wind energy system (wind farm) incorporating a block of or group of properties under multiple, separate ownerships provided;
  1. that all of the above regulations (subsections A. – H.) still apply, but to the whole rather than individual properties,
  2. that a written agreement among the participating property owners has been signed and recorded at the County Register of Deeds, and
  3. that the proposal does not leave one or more non-participating properties surrounded or otherwise isolated.

#### **SECTION 5 - SEVERABILITY:**

Sections of this Ordinance shall be deemed to be severable. Should any section, paragraph, or provision hereof be held by the courts to be unconstitutional or invalid, such holding shall not affect the validity of this Ordinance as a whole or any part thereof, other than the part so held to be unconstitutional or invalid.

#### **SECTION 6 - REPEAL:**

All ordinances in conflict herewith are hereby repealed.

**SECTION 7- EFFECTIVE DATE:**

Public hearing having been held hereon, this Ordinance shall become effective seven (7) days after publication, pursuant to Section 401, Act 110 of the Public Acts of 2006, as amended.

**SECTION 8 - INSPECTION OF ORDINANCE:**

A copy of this Ordinance may be inspected or purchased at the Township Hall, 135 North Main Street, Capac, Michigan, 48014 during regular posted office hours.

**SECTION 9 - ADOPTION:**

Made and passed by the Township Board of Trustees of the Township of Mussey, St. Clair County, Michigan, on this 9th day of February, 2011. A.D.

1. Date of Public Hearing: September 23, 2010
2. Date of Publication: February 16, 2011
3. Date of Adoption by Township Board: February 9, 2011
4. Date and Time Ordinance Shall Take Effect: February 23, 2011 at 12 noon.

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Sheila McDonald, Township Clerk