

SUBJECT: WIND ENERGY ADMINISTRATIVE PROVISIONS

RELEASE DATE: FEBRUARY 13, 2017

REVIEW- SHIAWASSEE COUNTY PLANNING COMMISSION MEETING (FEB 22, 2017)

2. Definitions

- A. Ambient Sound Level shall mean the decibel measurement or dB(A) of background sound pressure level exceeded 90% of the time or L90¹ at a given location prior to the installation of a WECS.²
- B. Decibel Measurement or dB(A) is defined as the sound pressure level reported in decibels. This refers to a logarithmic scale as³ defined by the American National Standards Institute (“ANSI”), as a method for weighting the frequency spectrum to mimic the human ear.
- C. Facility Abandonment shall mean a WECS that no longer converts wind into energy for a one (1) year period of time no matter the cause.
- D. Height is defined as the vertical distance measured from the ground level at the base of the tower to the uppermost vertical extension of any blade, or the maximum height reached by any part of the WES whichever is greater.
- E. Hub Height shall mean the vertical distance measured from ground level to the center of the turbine hub.⁴
- F. Manual and Automatic Controls are mechanical measures to limit rotation of WECS blades so as not to exceed the designed limits of the conversion system.
- G. Professional Engineer shall mean a licensed structural and/or mechanical engineer registered in the State of Michigan.
- H. Participating and Non-Participating Parcels:
 - a) Participating Parcel shall mean a parcel or parcels of record that are to be used, occupied, maintained, let, leased or authorized to be used for purposes of implementing, providing access to, or to meet setback requirements for WECS.
 - b) Non-Participating Parcel shall mean a parcel of record that is not in any manner used, occupied, maintained, let, leased or authorized to be used for WECS or any part of such systems.
- I. Shadow Flicker shall mean the alternating changes in light intensity caused by the moving blade of a WES casting shadows on the ground and/or structures.⁵

- J. Sound Pressure Level shall mean the average rate at which sound energy is transmitted through a unit area in a specified direction. The pressure of the sound measured at a receiver.⁶
- K. Utility Scale WECS shall mean a WECS designed and constructed to provide electricity to the electric utility grid through interconnection at transmission lines and either (1) possesses a total height of equal to or greater than one hundred-fifty (150') feet or (2) occupied by a number of turbines that exceed a combined total potential power output greater than a maximum of (10) kW per hour or both.⁷
- L. Utility Scale WECS Farm shall mean an electricity generating operation consisting of one or more Utility Scale WECS under common ownership, control or operation, and includes substations, testing facilities, transmission lines and other buildings accessory to such operation, whose main purpose is to supply electricity to the energy grid and off-site customers or consumers.⁸
- M. WECS Testing Facility shall mean the structure and equipment, temporarily erected for no more than two (2) years,⁹ used to determine the potential for the placement of one or more WECS improvements and contains instrumentation, such as anemometers or other meteorological devices, designed to provide wind and other data.
- N. Wind Energy Conversion System (“WECS”) shall mean any structural device (such as a wind generator, windmill, or wind turbine) and associated equipment that converts wind energy into electrical energy that is suitable for use by the local electrical transmission utility.¹⁰ Forms of WECS include:
1. Agricultural WECS shall mean any WECS that is accessory to a permitted farm or agricultural operation, and is designed and built to directly and immediately serve the needs of the farm or agricultural operation.
 2. Private WECS shall mean any WECS that is accessory to a principal non-agricultural use located on the same lot, and is designed and built to serve the principal residential use. Excess electricity generation may be sold to a utility but shall not exceed fifty (50) percent of the principal uses monthly electricity use or such WECS shall be considered a commercial WECS.
 3. Commercial WECS shall mean any WECS turbine and accessory structure or use that is designed and built to exclusively provide electricity to the electric utility’s power grid and is not accessory to any other use. The commercial WECS is a principal use of property and may occupy the same property as another principal use. Accessory structures and uses associated with a commercial WECS may include sub-stations, collection lines, transmission lines, etc.
- O. Wind Turbine shall mean a wind energy conversion system which converts wind energy into electricity through the use of specialized equipment and structures. Includes both Horizontal

Axis WECS, a wind energy system design in which the shaft is parallel to the ground and the blades are perpendicular to the ground; and vertical axis WECS, wind energy system design where the rotating shaft is perpendicular to the ground and the cups or blades rotate parallel to the ground.¹¹

3. Approval Required

- A. It shall be unlawful to construct, erect, install, use or locate a WECS within Shiawassee County unless a special use permit and final site plan or a zoning permit has been approved pursuant to this Ordinance.
- B. Agricultural WECS that are accessory to permitted farm and agricultural operations are permitted by right and shall be exempt from the general standards, provisions and requirements of this section. Agricultural WECS projects shall otherwise conform to the regulations of the zoning district for an agricultural accessory structure, including maximum height and minimum setback standards with the provisions of Section 5.6.4. Such compliance shall be verified upon application of a zoning permit.
- C. Private WECS is permitted by right with conditions and is subject to administrative site plan review and approval to determine compliance with the general standards, provisions and requirements of this section and this Ordinance.
- D. Commercial WECS are permitted by issuance of a special use permit and approval of a final site plan by the Planning Commission. Multiple WECS or WECS as part of a Utility Scale Wind Farm may be applied for under a single special use permit as long as all properties under application are located within a single Township under the jurisdiction of this Ordinance. If a multiple WECS or Utility Scale Wind Farm project involves siting WECS in multiple townships, a special use permit is required for those WECS within each Township under the jurisdiction of this Ordinance. An application for special use permit and final site plan shall contain information required pursuant to Article 12 for special use permit approval, Article 14 for final site plan approval, and other information as required in this section and in this Ordinance.
- E. Testing Facilities are permitted by issuance of a special use permit and approval of a final site plan. Testing Facilities preceding implementation of multiple WECS shall be considered temporary improvements and temporary shall be considered to be less than two (2) years. Continuation of operation beyond two (2) years shall require a new special use permit to be reviewed and approved. In the event that multiple WECS are proposed as a coordinated development and it is necessary that a temporary Test Facility be erected to monitor meteorological conditions for the life of a WECS project, such facility shall be included as part of the special use permit and final site plan approval process for the multiple WECS. The Testing Facility is assumed to be placed to provide satisfactory evidence that a potential WECS project is feasible. The applicant shall provide general information regarding the extent of the area under study that will be served by the test results from the Testing Facility. An application for special use permit and final site plan shall contain information required pursuant to Article 12 for special

use permit approval, Article 14 for final site plan approval, and other information as required in this section and in this Ordinance.

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- ¹ Clinton County Zoning Ordinance: July 28, 2016; Page 2-46.
 - ² City of Walker Wind Energy Ordinance: Page 2.
 - ³ Gratiot County Zoning Ordinance, Section 1.19: Page 19
 - ⁴ Clinton County Zoning Ordinance: July 28, 2016; Page 2-46.
 - ⁵ Emmet County Zoning Ordinance, Section 2102-16: Page 1.
 - ⁶ Gratiot County Zoning Ordinance, Section 1.19: Page 19
 - ⁷ Clinton County Zoning Ordinance: July 28, 2016; Page 2-47.
 - ⁸ Clinton County Zoning Ordinance: July 28, 2016; Page 2-47.
 - ⁹ Banks Township Zoning Ordinance: June 1, 2000, Page III-2.
 - ¹⁰ The Claybanks Township Zoning Ordinance: Page 33.
 - ¹¹ Clinton County Zoning Ordinance: July 28, 2016; Page 2-46.