CHARTER TOWNSHIP OF FENTON
Ordinance No. 717
Adopted: December 21, 2009

An ordinance to amend multiple sections of Zoning Ordinance No. 594 to add provisions regarding wind energy systems.

THE CHARTER TOWNSHIP OF FENTON, GENESEE COUNTY, MICHIGAN, ORDAINS:

ARTICLE I. Section 2.01 (Definitions) of Zoning Ordinance No. 594 is hereby amended to add the following definitions:

Anemometer tower – A freestanding tower 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 an accessory land use to a utility grid wind energy system.

Ambient – The sound pressure level exceeded 90% of the time or L 90. ANSI means the American National Standards Institute.

dB(A) – The sound pressure level in decibels. It refers to the "a" weighted scale defined by ANSI. A method for weighting the frequency spectrum to mimic the human ear.

Decibel – The unit of measure used to express the magnitude of sound pressure and sound intensity.

IEC – The International Electrotechnical Commission.

ISO – The International Organization for Standardization.

Lease unit boundary – A boundary around property leased for purposes of a wind energy system, including adjacent parcels to the parcel on which the wind energy system tower or equipment is located. For purposes of setback, the lease unit boundary shall not cross road right-of-ways.

On site wind energy system – A land use for generating electric power from wind and is an accessory use that is intended to primarily serve the needs of the consumer at that site.

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 energy system casting shadows on the ground and stationary objects, such as but not limited to a window at a dwelling.

Sound pressure – An 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 and reported in decibels (dB).

Sound pressure level – The sound pressure mapped to a logarithmic scale.

Structure mounted wind energy system – An on-site wind energy system mounted on a structure other than a tower, such as a building.

Utility grid wind energy system – A land use for generating power by use of wind at multiple tower locations in a community and includes accessory uses such as but not limited to a SCADA TOWER, electric substation. A utility grid wind energy system is designed and built to provide electricity to the electric utility grid.

Wind energy system – A land use for generating power by use of wind; utilizing use of a wind turbine generator and includes the turbine, blades, and tower as well as related electrical equipment. This does not include wiring to connect the wind energy system to the grid. See also on site wind energy system and utility grid wind energy system.

Wind site assessment – An assessment to determine the wind speeds at a specific site and the feasibility of using that site for construction of a wind energy system

ARTICLE II. Article 3 (District Regulations) of Zoning Ordinance No. 594 is hereby amended to add the following permitted accessory use to the AG, R-1, R-2, R-3, R-M, R-MH, C-1, C-2, C-3, M-1, M-2 M-3 and PUD zoning districts:

On-site wind energy system

ARTICLE III. Article 3 (District Regulations) of Zoning Ordinance No. 594 is hereby amended to add the following permitted use by special use permit in the AG, M-2 M-3 and PUD zoning districts:

Utility grid energy system

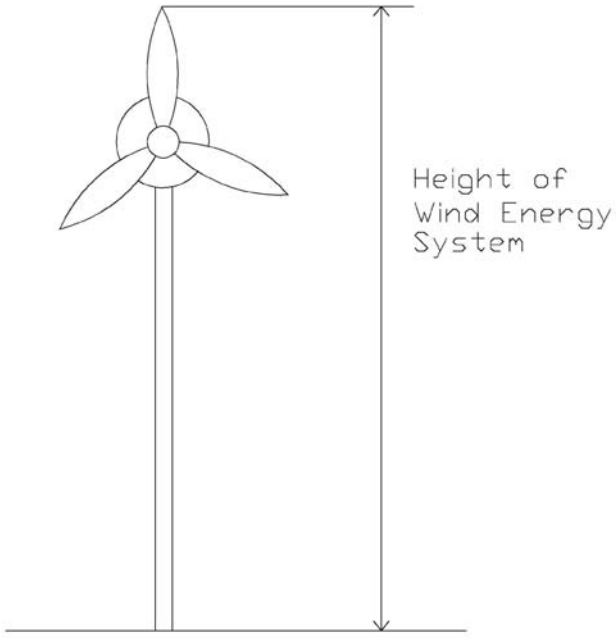
ARTICLE IV. Article 11 (Design Standards) of Zoning Ordinance No. 594 is hereby amended to add the following sections:

SECTION 11.78 On site wind energy systems and anemometer tower.
On site wind energy systems and Anemometer Tower are permitted by right in the AG, R-1, R-2, R-3, R-M, R-MH, C-1,C-2, C-3, M-1 , M-2 and M-3 and PUD districts as an accessory use, provided:

A. The system is designed to primarily serve the needs of a home, farm, or small business.
B. Shall have a tower height of sixty-six (66) feet or less.
C. Property Set-back: The distance between an on site wind energy system and the owner's property lines shall be equal to the height of the wind energy system tower including the top of the blade in its vertical position (See figure 11-1). The distance between an anemometer

tower and the owner's property lines shall be equal to the height of the tower. No part of the wind energy system structure, including guy wire anchors, may extend closer than ten feet to the owner's property lines, or the distance of the required setback in the respective zoning district, whichever results in the greater setback.

Figure 11-1

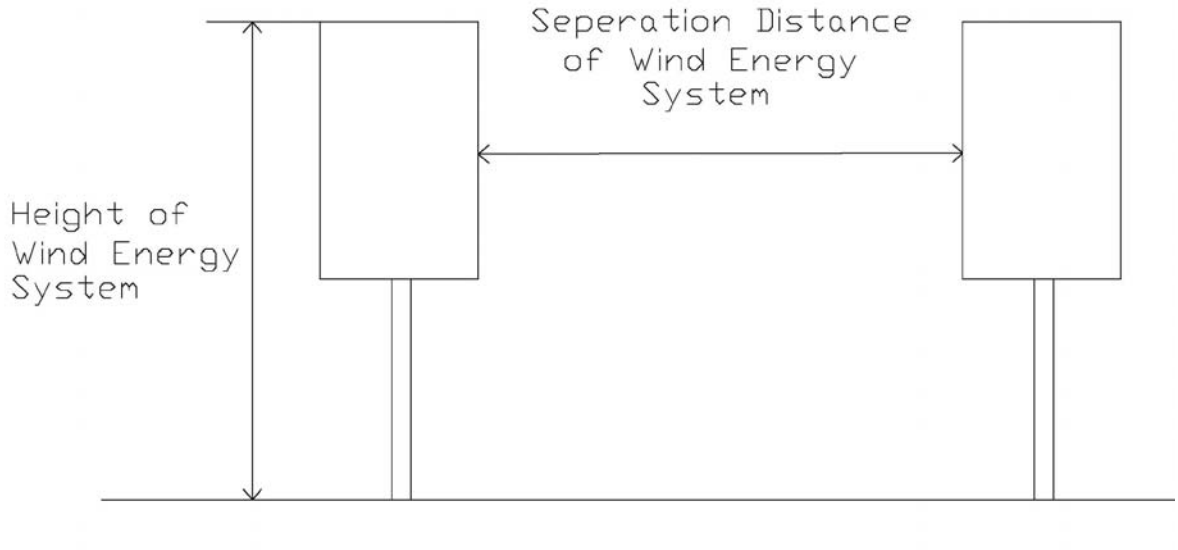


D. Sound Pressure Level: On-site wind energy systems shall not exceed 55 dB(A) at the property line closest to the wind energy system. This sound pressure level may be exceeded during short-term events such as utility outages and/or severe wind storms. If the ambient sound pressure level exceeds 55 dB(A), the standard shall be ambient dB(A) plus 5 dB(A).
E. Construction Codes, Towers, & Interconnection Standards: On site wind energy systems including towers shall comply with all applicable state construction and electrical codes and local building permit requirements. On-site wind energy systems including towers shall comply with Federal Aviation Administration requirements, the Michigan Airport Zoning Act (Public Act 23 of 1950, MCL 259.431 *et seq*.), and the Michigan Tall Structures Act (Public Act 259 of 1959, MCL 259.481 *et seq*.), An interconnected on site wind energy system shall comply with Michigan Public Service Commission and Federal Energy Regulatory Commission standards. Off-grid systems are exempt from this requirement.
F. Safety: An on site wind energy system shall have automatic braking, governing, or a feathering system to prevent uncontrolled rotation or over speeding. All wind towers shall have lightning protection. If a tower is supported by guy wires, the wires shall be clearly visible to a height of at least six feet above the guy wire anchors. The minimum vertical

blade tip clearance from grade shall be twenty (20) feet for a wind energy system employing a horizontal axis rotor.

G. In addition to the siting and design requirements listed above, the structure mounted wind energy systems shall be subject to the following:
   1. Height: The height of a structure mounted wind energy system shall not exceed fifteen (15) feet as measured from the highest point of the roof, excluding chimneys, antennae, and other similar protuberances.
   2. Setback: The setback of the structure mounted wind energy system shall be a minimum of twenty-five (25) feet from the property line, public right-of-way, public easement, or overhead utility lines if mounted directly on a roof or other elevated surface of a structure. If the structure mounted wind energy system is affixed by any extension to the side, roof, or other elevated surface, then the setback from the property line or public right-of-way shall be a minimum of fifteen (15) feet. The setback shall be measured from the furthest outward extension of all moving parts.
   3. Location: The structure mounted wind energy system shall not be affixed to the wall on the side of a structure facing a road.
   4. Quantity: No more than three (3) structure mounted wind energy system s shall be installed on any parcel of property.
   5. Separation: If more than one structure mounted wind energy system is installed, a distance equal to the height of the highest structure mounted wind energy system must be maintained between the furthest outward extension of any moving part of each structure mounted wind energy system.

Figure 11-2



SECTION 11.79 Utility grid wind energy system, on site wind energy system over sixty-six (66) feet high, and anemometer towers over sixty-six (66) feet high

Utility grid wind energy system, on site wind energy system over sixty-six (66) feet high, and anemometer towers over sixty-six (66) feet high are permitted by Special Use Permit in the AG, M-2, M-3 and PUD districts, provided:

A. Anemometer Tower setback shall be the greater of the following distances:
   1. The setback from property lines of the respective zoning district; or
   2. A distance equal to the height of the tower from property lines.

B. Utility Grid and On-site Use Wind Energy System setback shall be greater of the following distances:
   1. The setback from property lines of the respective zoning district; or
   2. A distance equal to the height of the tower including the top of the blade in its vertical position from property lines.

C. An Operations and Maintenance Office building, a sub-station, or ancillary equipment shall comply with any property set-back requirement of the respective zoning district. Overhead transmission lines and power poles shall comply with the set-back and placement requirements applicable to public utilities.

D. Sound Pressure Level: The sound pressure level shall not exceed 55 dB(A) measured at the property lines or the lease unit boundary,. This sound pressure level shall not be exceeded for more than three minutes in any hour of the day. If the ambient sound pressure level exceeds 55 dB(A), the standard shall be ambient dB(A) plus 5 dB(A).

E. Post-Construction Permits: Construction Codes, Towers, and Interconnection Standards: The project shall comply with all applicable state construction and electrical codes and local building permit requirements.

F. Pre-Application Permits:
   1. Utility Infrastructure: The project shall comply with Federal Aviation Administration (FAA) requirements, the Michigan Airport Zoning Act (Public Act 23 of 1950 as amended, M.C.L. 259.431 *et seq*.), the Michigan Tall Structures Act (Public Act 259 of 1959 as amended, M.C.L. 259.481 *et seq*.), and local jurisdiction airport overlay zone regulations. The minimum FAA lighting standards shall not be exceeded. All tower lighting required by the FAA shall be shielded to the extent possible to reduce glare and visibility from the ground. The tower shaft shall not be illuminated unless required by the FAA. Utility Grid wind energy systems shall comply with applicable utility, Michigan Public Service Commission, and Federal Energy Regulatory Commission interconnection standards.
   2. Environment:
      a. The site plan and other documents and drawings shall show mitigation measures to minimize potential impacts on the natural environment including, but not limited to wetlands and other fragile ecosystems, historical and cultural sites, and antiquities, as identified in the Environmental Analysis.
         i. Comply with applicable parts of the Michigan Natural Resources and Environmental Protection Act (Act 451 of 1994, M.C.L. 324.101 *et seq*.) (including but not limited to:
         ii. Part 31 Water Resources Protection (M.C.L. 324.3101 *et seq*.),

iii. Part 91 Soil Erosion and Sedimentation Control (M.C.L. 324.9101 *et seq*.) ,
iv. Part 301 Inland Lakes and Streams (M.C.L. 324.30101 *et seq*.),
v. Part 303 Wetlands (M.C.L. 324.3030 1 *et seq*.),

G. Performance Bond: Performance Bond, pursuant to Section 8.09 of this Ordinance shall be provided for the applicant making repairs to public roads damaged by the construction of the wind energy system.

H. Utilities: Power lines should be placed underground, when feasible, to prevent avian collisions and electrocutions. All aboveground lines, transformers, or conductors should comply with the Avian Power Line Interaction Committee (APLIC) published standards to prevent avian mortality.

I. The following standards apply only to utility grid wind energy systems. The applicant shall provide the following studies, prepared by a Michigan licensed professional within their respective discipline per the professional laws of that discipline:

1. Visual Impact Analysis: Utility grid wind energy system projects shall use tubular towers and all utility grid wind energy systems in a project shall be finished in a single, non-reflective matte finished color. A project shall be constructed using wind energy systems of similar design, size, operation, and appearance throughout the project. No lettering, company insignia, advertising, or graphics shall be on any part of the tower, hub, or blades. Nacelles may have lettering that exhibits the manufacturer's and/or owner's identification. The applicant shall avoid state or federal scenic areas.
2. Avian and Wildlife Impact Analysis: Site plan and other documents and drawings shall show mitigation measures to minimize potential impacts on avian and wildlife, as identified in the Avian and Wildlife Impact Analysis.
3. Shadow Flicker Analysis: Site plan and other documents and drawings shall show mitigation measures to minimize potential impacts from shadow flicker, as identified in the Shadow Flicker Impact Analysis.
4. Decommissioning Plan: A Planning Commission approved decommissioning plan indicating 1) the anticipated life of the project, 2) the estimated decommissioning costs net of salvage value in current dollars, 3) the method of ensuring that funds will be available for decommissioning and restoration, and 4) the anticipated manner in which the project will be decommissioned and the site restored.
5. Complaint Resolution Plan: A Planning Commission approved process to resolve complaints from nearby residents concerning the construction or operation of the project.
6. Electromagnetic Interference Analysis: No utility grid 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 phone 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. No utility grid wind energy system shall be installed in any location within the line of sight of an existing microwave communications link where operation of the wind energy system is likely to produce electromagnetic interference in the link's operation unless the interference is insignificant.

ARTICLE V. This ordinance and its various articles, paragraphs and clauses thereof are hereby declared to be severable. If any article, paragraph or clause is adjudged unconstitutional or invalid, the remainder of this amendatory ordinance shall not be affected thereby.

ARTICLE VI. All ordinances and provisions of ordinances of the Charter Township of Fenton in conflict herewith are hereby repealed.

ARTICLE VII. This amendatory ordinance shall be published as required by law and shall take effect 7 days after adoption and publication.

Enacted at a regular meeting of the Fenton Township Board held on the 21st day of December 2009.

Bonnie K. Mathis, Supervisor **Robert E. Krug, Clerk**