

SECTION 561 - WIND ENERGY SYSTEMS

SECTION 561.01 - PURPOSE

The purpose of this section is to accommodate wind energy systems under five (5) megawatts in size in appropriate locations, while minimizing adverse visual, safety and environmental impacts of the system. In addition, this section provides a permitting process for wind energy systems to ensure compliance with the provisions of the requirements and standards established herein.

SECTION 561.02 - DEFINITIONS

- a) Anemometer: a temporary wind speed indicator constructed for the purpose of analyzing the potential for utilizing a wind energy system at a given site. This includes the tower, base plate, anchors, cables and hardware, wind direction vanes, booms to hold equipment, data logger, instrument wiring, and any telemetry devices that are used to monitor or transmit wind speed and wind flow characteristics over a period of time for either instantaneous wind information or to characterize the wind resource at a given location.
- b) Fall Zone: The potential fall area for a tower-mounted wind energy system. It is measured by using 110% of the total height as the radius around the center point of the base of the tower.
- c) Structure-Mounted Wind Energy System: A wind energy system mounted on a structure roof, walls, or other elevated surface that includes any base, blade, foundation, generator, nacelle, rotor, tower, transformer, vane, wire, inverter, batteries, or other components used in the system. A structure mounted wind energy system shall project no more than 15 feet above the highest point of the roof excluding chimneys, antennae, and other similar protuberances.
- d) Net Metering: The process by which surplus energy generated by a customer, as measured by the difference between the electricity supplied by an electric service provider and the electricity generated by a customer in an applicable billing period, is fed back to the electric service provider with customer compensation.
- e) Power Grid: The transmission system created to balance the supply and demand of electricity for consumers in Ohio.
- f) Shadow Flicker: Shadow flicker occurs when the blades of the turbine rotor cast shadows that move across the ground and nearby structures.
- g) Tower Mounted Wind Energy System: a wind energy system mounted on a tower that includes any base, blade, foundation, generator, nacelle, rotor, tower, transformer, vane, wire, inverter, batteries, or other components used in the system.
- h) Tower: The monopole or guyed monopole constructed to support a wind energy system.
- i) Total Height: is 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 wind energy system.

- j) Tower Height: The height above grade of the fixed portion of the tower, excluding the wind energy system.
- k) Wind Energy System: A system that converts the kinetic energy of the wind into electricity available for use beyond that used by the system.

SECTION 561.03 - APPLICABILITY

- a) Wind energy systems shall be conditionally permitted pursuant to Section 815 in all zoning districts.
- b) No wind energy system shall be erected, constructed, installed or modified, except as permitted in 561.04(m)(2), without first receiving a conditional use permit pursuant to Section 815.
- c) No wind energy system shall be erected, constructed, installed or modified, except as permitted in 561.04(m)(2), without first receiving zoning compliance pursuant to Section 705.02.
- d) No wind energy system shall be erected, constructed, installed or modified without first receiving a building permit from the appropriate approving agency.

SECTION 561.04 - DEVELOPMENT STANDARDS - Wind energy systems shall be evaluated for compliance to the following standards;

- a) Fall Zone
 - 1) A tower mounted wind energy system shall have a fall zone at least 110% of the total height from:
 - a. Any public road right-of-way, unless written permission is granted by the governmental entity with jurisdiction over the road.
 - b. Any future road right-of-way pursuant to the Franklin County Thoroughfare Plan or thoroughfare plan of adjacent jurisdictions, where appropriate.
 - c. All overhead utility lines.
 - d. All property lines, unless the affected land owner provides written permission through a recorded easement allowing the wind energy system's fall zone to overlap with the abutting property.
 - e. Any principal structure.
 - 2) Guy wires used to support the tower of a tower mounted wind energy system are exempt from the wind energy system fall zone requirements.

b) Tower:

- 1) The tower of a tower-mounted wind energy system shall not exceed 150 feet in height.
- 2) The applicant shall provide evidence that the proposed tower height of a tower mounted wind energy system does not exceed the height recommended by the manufacturer of the wind energy system.

c) Sound Level:

- 1) Operation of wind energy systems shall not exceed 55 decibels, except during short-term events such as severe wind storms and utility outages. This information shall be obtained from the manufacturer of the wind energy system, and all readings, if necessary, shall be taken from the nearest neighboring property line.

d) Shadow Flicker:

- 1) Wind energy systems shall be sited in a manner that does not result in shadow flicker impacts. The applicant has the burden of proving that their wind energy system does not have an impact on neighboring or adjacent uses either through siting or mitigation.

e) Signs:

- 1) All signs, both temporary and permanent, are prohibited on wind energy systems, except as follows:
 - a. Manufacturer's or installer's identification on the wind energy system.
 - b. Appropriate warning signs and placards.

f) Code Compliance:

- 1) Wind energy systems shall comply with all applicable sections of the Ohio Building Code.

g) Aviation:

- 1) Wind energy systems shall be built to comply with all applicable Federal Aviation Administration regulations. Evidence of compliance or non-applicability shall be submitted with the Conditional Use application.

h) Visual Impacts: It is inherent that wind energy systems may pose some visual impacts due to the total height needed to access the wind resources. The purpose of this section is to reduce the visual impacts, without restricting the owner's access to wind resources.

- 1) The applicant shall demonstrate through project site planning and proposed mitigation that a wind energy system's visual impacts will be minimized for surrounding neighbors and the community. This may include, but not be limited to information regarding site selection, wind energy system design or appearance, buffering, and screening of ground mounted electrical and control equipment.

- 2) The color of wind energy systems shall be painted with a non-reflective, unobtrusive color that blends in with the surrounding environment.
 - 3) Wind energy systems shall not be artificially lit unless such lighting is required by the Federal Aviation Administration. If lighting is required, the applicant shall provide a copy of the Federal Aviation Administration determination to establish the required markings and/or lights for the wind energy system.
- i) Utility Connection:
- 1) Wind energy systems proposed to be connected to the power grid through net metering shall adhere to Ohio Revised Code Section 4928.67 or any future corresponding statutory provision.
- j) Access:
- 1) All ground mounted electrical and control equipment shall be labeled and secured to prevent unauthorized access.
 - 2) The tower of a tower mounted wind energy system shall be designed and installed so as not to provide step bolts or a ladder readily accessible to the public for a minimum height of 10 feet above the ground.
- k) Clearing:
- 1) Clearing of natural vegetation shall be limited to that which is necessary for the construction, operation and maintenance of wind energy systems and as otherwise prescribed by applicable laws, regulations and ordinances.
- l) Wiring and electrical apparatuses:
- 1) All wires and electrical apparatuses associated with the operation of a tower-mounted wind energy system, except guy wires, shall be located underground.
- m) Maintenance:
- 1) All wind energy systems shall be maintained in good working order.
 - 2) Any physical modification to the wind energy system that alters the mechanical load, mechanical load path, or major electrical components shall require reapplication for conditional use under this section. Like kind replacements shall not require re-application.
- n) Multiple Wind Energy Systems:
- 1) Multiple wind energy systems are allowed on a single parcel so long as the owner/operator complies with all regulations set forth in Section 561 – Wind Energy Systems.

- o) Historic Sites
 - 1) No wind energy system shall be located within 1,000 feet of any registered historic site or historic district.
 - 2) Written proof of compliance with this requirement must be provided by the Ohio Historic Preservation Office and be submitted with the conditional use application.
- p) Controls and Brakes
 - 1) All wind energy systems shall be equipped with a redundant braking system which must include:
 - a. Aerodynamic over-speed controls which include variable pitch, tip and other similar systems and;
 - b. Mechanical brakes which must be operated in fail-safe mode.
 - 2) Stall regulation shall not be considered a sufficient braking system for over-speed protection.

SECTION 561.05 - PROCEDURE FOR REVIEW

- a) In accordance with Section 815 – Procedure for Authorizing a Conditional Use, a wind energy system shall be subject to receiving a conditional use permit prior to installation or modification thereof.
 - 1) The issuance of a conditional use permit shall comply with the following requirements:
 - a. Site Plan Review: A site plan shall be submitted for review. The following items shall be the minimum requirements for a complete application. The site plan shall include the following:
 - 1. Property lines and physical dimensions of the applicant's property.
 - 2. Location, dimensions and types of existing structures on the property.
 - 3. Location of the proposed wind energy system, foundations, guy wires and associated equipment.
 - 4. Fall Zone depicted as a radius around the center of the tower for a tower mounted wind energy system.
 - 5. The right-of-way or future right-of-way according to the Franklin County Thoroughfare Plan of any public road that is contiguous with the property.
 - 6. Two (2) foot contours of the applicant's property and properties contiguous to the subject property.

7. All overhead utility lines.
 8. The site plan must be prepared and stamped by a professional engineer or surveyor licensed to practice in the state of Ohio.
- b. Wind energy system specifications, including manufacturer, model, rotor diameter in addition to tower height and tower type, if tower mounted, for small wind energy systems.
 - c. Documentation shall be provided regarding the notification of the intent with the utility regarding the applicant's installation of a wind energy system if the wind energy system will be connected to the power grid.
 - d. Tower foundation blueprints or drawings for tower mounted wind energy systems.
 - e. Tower blueprints or drawings for tower mounted wind energy systems.
 - f. Sound level analysis prepared by the wind energy system manufacturer or qualified engineer.
 - g. Electrical components in sufficient detail to allow for a determination that the manner of installation conforms to the National Electrical Code (typically provided by the manufacturer)
 - h. Evidence of compliance or non-applicability with Federal Aviation Administration requirements.
 - i. Compliance with all development standards as outlined in Section 561.04 – Development Standards.
- b) Zoning Compliance
 - 1) A Certificate of Zoning Compliance must be obtained in accordance with Section 705.02 – Certificate of Zoning Compliance.
 - c) Building Permit
 - 1) A Building Permit must be obtained from the appropriate approving agency.

SECTION 561.06 - DECOMMISSION

- a) At such time that a wind energy system is scheduled to be decommissioned or discontinued, the applicant will notify the Administrative Officer by certified U.S. mail of the proposed date of discontinuation of operations.
- b) Upon decommission or discontinuation of use, the owner shall physically remove the wind energy system within 90 days from the date of decommission or discontinuation of use. This period may be extended at the request of the owner and at the discretion of the Administrative Officer. "Physically remove" shall include, but not be limited to:

- 1) Removal of the wind energy system.
 - 2) Removal of any tower and other related above ground structure.
 - 3) Restoration of the location of the wind energy system to its natural condition, except that any landscaping, grading or below-grade foundation may remain in the after-conditions.
- c) In the event that an applicant fails to give such notice, the system shall be considered decommissioned or discontinued if the system is out of service for a continuous two (2) year period. After two (2) years of inoperability, the Administrative Officer may issue a Notice of Decommission to the owner of the wind energy system. The owner shall have the right to respond to the Notice of Decommission within 30 days from the date of receipt. The Administrative Officer shall withdraw the Notice of Decommission and notify the owner that the Notice has been withdrawn if the owner provides information that demonstrates the wind energy system has not been decommissioned.
- d) If the owner fails to respond to the Notice of Decommission or if after review by the Administrative Officer it is determined that the wind energy system has been decommissioned or discontinued, the owner of the wind energy system shall remove the wind energy system, tower and other related above-ground structures at the owner's sole expense within three (3) months of receipt of the Notice of Decommission.

SECTION 561.07 - ANEMOMETER - The construction of an anemometer tower for the purpose of collecting data to develop a wind energy system, shall abide with the following requirements.

- a) Anemometer towers shall adhere to the wind energy system standards as described in Section 561.03 - Applicability.
- 1) Anemometer towers shall be installed on a temporary basis not to exceed 18 months.
 - 2) Anemometers must meet all applicable requirements of Section 561.04 - Development Standards.