

Colerain Township – Case ZA2008-04 – Text Amendment

Article 10.2.2 (L) Small Wind Energy Conversion Systems.

(L) Small wind energy conversion systems (SWECS) less than 5 megawatts in capacity shall be permitted, with an approved Zoning Certificate, subject to all requirements as provided herein. Wind power systems 5 megawatts in capacity or greater are regulated by the Ohio Public Utilities Commission (PUCO).

Permissible SWECS shall include both Horizontal Axis Wind Turbines (HAWTs) and Vertical Axis Wind Turbines (VAWTs).

- (1) **Minimum Lot Size** – The minimum lot size for a small wind energy conversion system shall be 5 acres.
- (2) **Maximum Tower Height** – The maximum tower height on a property between five acres and six acres in size shall be one hundred fifty (150) feet. On properties larger than six acres, there is no limitation on tower height, except as imposed by FAA regulations.
- (3) **Turbine Clearance**– No portion of the turbine, including rotor blades, shall extend within twenty feet (20') of the ground, except that the generator of a VAWT may be located on the ground at the base of the system. No portion of the turbine may extend over parking areas, driveways or sidewalks.
- (4) **Maximum Rotor blade length** – The maximum rotor blade length shall be determined separately for Horizontal Axis Wind Turbines (HAWTs) and Vertical Axis Wind Turbines (VAWTs), as described below:
 - a. The maximum blade length for a Horizontal Axis Wind Turbine shall be determined according to the rotor diameter. The maximum rotor diameter of a HAWT shall be 43 feet.
 - b. The maximum blade length for a Vertical Axis Wind Turbine shall be 20 feet less than the maximum height of the tower, as defined above, in order to provide for the 20' turbine clearance.
- (5) **Minimum Setbacks** – Minimum setbacks for the tower shall be either 200 feet or equal to the height of the tower, whichever is greater. No part of the small wind energy conversion system structure, including, but not limited to, guy wire anchors and any necessary ground-mounted conversion equipment, may extend closer than twenty-five (25) feet to the property line.
- (6) **Sound** – Small wind energy conversion systems shall not exceed 60 dbA, measured five (5) feet above ground level at the closest property line. The

sound level, however, may be exceeded during short-term events such as utility outages and/or severe wind storms with sustained winds of 58 miles per hour or 50 knots.

- (7) Automatic Over-Speed Controls – All small wind energy conversion systems shall be equipped with manual (electronic or mechanical) and automatic over-speed controls to limit the blade rotation speed to within the design limits of the small wind energy conversion system.
- (8) Utility Notification – No small wind energy conversion system shall be installed until evidence has been given that the electrical utility company has been informed of, and approved the customer's intent to install an interconnected customer-owned generator. Off-grid systems shall be exempt from this requirement.
- (9) Tower color – Tower colors shall be white, off-white, gray, or neutral subdued tones, such as earth tones of green or brown. Towers shall not be finished in bright or vivid colors, nor shall the tower be used for advertising of any kind.
- (10) Multiple towers – Multiple small wind energy conversion systems are allowed on any site, provided all minimum standards are met and total wattage is less than 5MW.
- (11) Lighting – Small wind energy conversion systems shall not be artificially lighted, except as required by the FAA.
- (12) Climb prevention – Small wind energy conversion systems shall not be climbable up to fifteen (15) feet above the ground surface.
- (13) Compliance with other regulations – The applicant or owner shall be responsible for acquiring all necessary approvals from other applicable agencies, including but not limited to the FAA.
- (14) Maintenance – Small wind energy conversion systems are subject to the provisions of the Property Maintenance Code and shall be maintained in working order, structurally sound, and with any surface treatments intact.
- (15) Abandoned Facilities - Any small wind energy conversion system that is not operated on a functional basis for a period of six (6) consecutive months shall be deemed abandoned. The Zoning Administrator may order the repair or removal of said small wind energy conversion system, in accordance with these provisions. The applicant, owner, or other person responsible for the facility shall repair or remove the same within sixty (60) days of receipt of notification by certified mail. If said facility is not either operational or removed after sixty (60) days, the Township may remove the system at the owner's expense.

Add to Article 16 Definitions:

A-Weighted Sound Level (dbA). A measurement of sound pressure level, which has been filtered or weighted to progressively de-emphasize the importance of frequency components below 1000 Hz and above 5000 Hz. This reflects the fact that human hearing is less sensitive at low frequencies and at extremely high frequencies, relative to the mid-range of the frequency spectrum. This area of sensitivity also corresponds to the human speech band.

Decibel (db). The measurement of a sound pressure relative to the logarithmic conversion of the sound pressure reference level often set as 0 db (A-weighted). In general, this means the quietest sound we can hear is near 0 db (A-weighted) and the loudest we can hear without pain is near 120 db (A-weighted).

FAA shall mean the Federal Aviation Administration of the United States Department of Transportation.

Guy Cable shall mean any cable or wire that extends from a small wind energy system for the purpose of supporting the system structure.

Meteorological Tower shall mean a facility consisting of a tower and related wind-measuring devices, which is used solely to measure winds preliminary to construction of a small wind energy conversion system. Meteorological Towers shall not be allowed for time periods in excess of six months, and shall be removed prior to the installation of the wind energy conversion system for which they are measuring. A request to install a meteorological tower shall be included in the application to install a small wind energy conversion system.

Rated Nameplate Capacity shall mean the maximum rated output of electric power production equipment for a small wind energy conversion system. This output is typically specified by the manufacturer with a “nameplate” on the equipment.

Rotor Diameter shall mean the length as measured across the center of the full span of the rotors of a SWECS turbine.

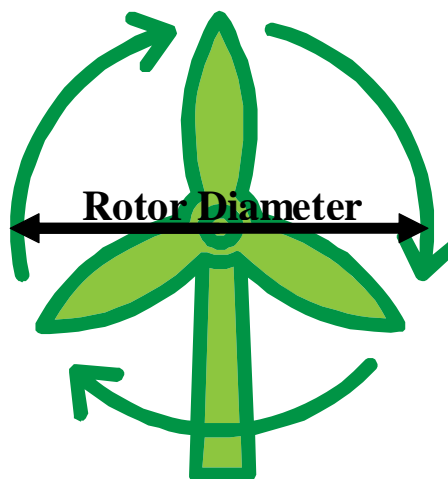


Figure 16 — #

Small Wind Energy Conversion System (SWECS) shall mean a wind energy conversion system consisting of a wind turbine, tower, and associated control or conversion electronics that generates power for an individual property for the purpose of reducing on-site energy consumption with a rated nameplate capacity of 100kW or less. This includes, but is not limited to, storage, electrical collection and supply equipment, and transformers. Excess electrical power generated, and not presently needed for on site use, may be utilized by the utility company. SWECS shall include both Horizontal Axis Wind Turbines (HAWTs) and Vertical Axis Wind Turbines (VAWTs) as shown in Figure 16 - #.

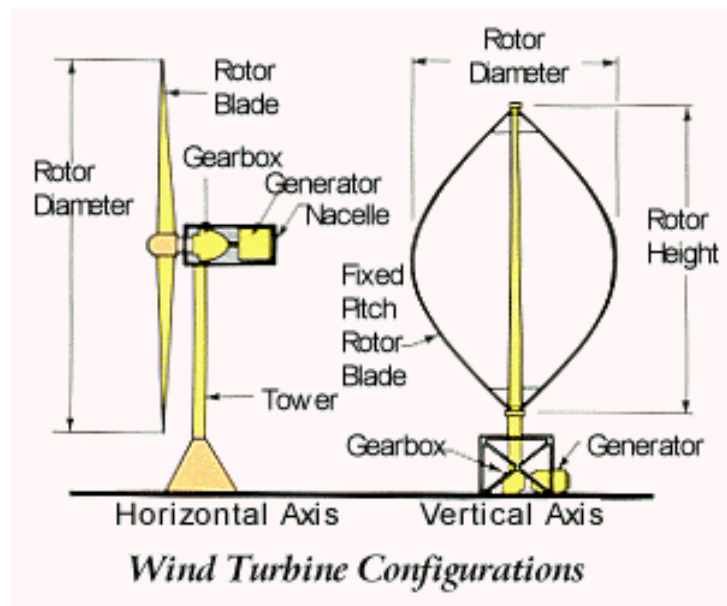


Figure 16 - #

Tower Height. The tower height of a small wind energy conversion system is the total height above finished grade of the fixed portion of the tower, excluding the wind turbine blades.

Turbine shall mean the parts of a small wind energy conversion system including the blades, generator, and tail.

***Also remove height exemption for windmills from 12.2.2:*

12.2.2 Height Exemptions

(A) Church spires, domes, flagpoles, aerials, antennas, wireless telecommunications towers, telephone transmitters and towers, windmills, chimneys, cooling towers, elevator bulkheads, fire towers, belfries, monuments, stacks, derricks, conveyors, stage towers or scenery lofts, tanks, water towers,

silos, farm buildings, or necessary mechanical appurtenances, may be erected to any lawful and safe height.