

Article 14

Alternate Energy

1400 Purpose

The requirements of this Resolution shall apply to all alternate energy facilities and structures as defined in this Article. No Wind Energy Conversion System, or private stand-alone solar panel, or commercial solar panel installation, or any components thereof shall be constructed, erected, installed, or located within Jackson Township, Clermont County until prior siting approval has been obtained pursuant to the Jackson Township Zoning Resolution.

1410 The Power to Regulate Wind Energy Systems

Ohio Revised Code (ORC) section 519.213 confers power on the board of trustees or board of zoning appeals with respect to the location, erection, construction, reconstruction, change, alteration, maintenance, removal, use, or enlargement of any small wind farm, whether publicly or privately owned, or the use of land for that purpose, which regulations may be more strict than the regulations prescribed in rules adopted under division (B)(2) of section 4906.20 of the Revised Code.

1420 Regulations – Residential Wind Energy Systems

Residential wind energy systems shall be a permitted use in all zoning districts where structures of any kind are permitted and shall be designed for, or capable of, operation at an aggregate capacity of less than five megawatts. A residential wind energy system shall be considered as an accessory use that is intended to primarily serve the needs of the consumer at that site. All proposed residential wind energy systems shall be subject to certain requirements as set forth below and after review by the Board of Zoning Appeals. Upon review by the Board of Zoning Appeals, additional restrictions or conditional uses may be added as warranted.

Minimum Parcel Size: One Acre

Tower Height: For property sizes between 1 and 5 acres the tower height shall be limited to 65 feet including the highest point of the turbine blades.

For property sizes of 5 acres or more, tower heights shall be limited to a height of 80 feet, including the highest point of the turbine blades, except as may be imposed by FAA regulations.

Clearance of Blade: No portion of the wind energy system blade sweep shall extend within twenty feet of the ground. No blade sweep may extend over parking areas, driveways, property lines, or any type of building.

Set- Backs: Set-backs for the system tower shall be no closer from the property line than the height of the tower, provided that that setback also complies with any applicable fire setback requirements. All towers must be located 1.5 times the tower height from the Public Right of Way. Guy wire anchor points may extend to 10 feet from the property line. Building mounted systems shall be setback 30 feet from the property line.

Automatic Over-speed Controls: All wind energy conversion system 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 residential wind energy system. Turbine blade systems shall be rated to wind speeds of no less than 110 MPH measured at sea level.

Sound: Residential wind energy systems shall not exceed 60 dBA, as measured at the closest property line to the tower. The level, however, may be exceeded during short-term events such as utility outages and/or severe wind storms.

Approved Wind Turbines: Residential wind turbines must be approved by a small wind certification program recognized by the American Wind Energy Association (American Wind Energy Association, 1501 M Street NW, Suite 1000, Washington, DC 20005. Phone: 202.383.2500, Fax: 202.383.2505. On-line at: www.awea.org).

Compliance with FAA Regulations: Residential wind energy systems must comply with applicable FAA regulations.

Utility Notification: No residential wind energy system shall be installed until evidence has been given that the utility company has been informed of the customer's intent to install an interconnected, net metered customer-owned generator. Off-grid systems shall be exempt from this requirement.

1430 Regulations – Utility Grid Wind Energy Systems

A Utility Grid Wind Energy System (UGWES) is designed and built to commercially provide electricity to the electric utility grid. A UGWES shall only be permitted in the Agricultural and Industrial Districts.

Site Approval Application: The applicant must submit an application to the Zoning Administrator for review and approval by the Jackson Township Zoning Commission and must include the following information:

- a.) Name and address of the applicant.
- b.) Evidence the applicant is the owner of the property involved or has written permission of the owner to make such application.
- c.) A plot and development plan drawn in sufficient detail to clearly describe the following:
 - Physical dimensions of the property, existing structures and proposed structures.
 - Location of existing and proposed structures including such structures as anemometer and SCADA towers.
 - Location of existing and proposed electrical lines facilities.
 - Existing topography
 - Existing wetlands
 - Proposed grading, removal of natural vegetations and relocation of wetlands (if applicable).
 - Setbacks
 - Proposed ingress and egress.
 - Proposed safety fencing to prevent trespassing.
 - Manufacturer's specifications and recommended installation methods for all major equipment, including solar panels, mounting systems, and foundations for poles or racks.
 - The number of panels to be installed.
 - A description of the method of connecting the array to a building or substation.
- d.) Utility interconnection data and a copy of written notification to the utility of the proposed connection.
- e.) Specific information of the type, size, height, rotor material, rated power output, performance, safety, and noise characteristics of each Wind Turbine Generator (WTG) model, tower and electrical transmission equipment.
- f.) A soil boring report.
- g.) Any additional information as normally required by the Township as part of this Zoning Resolution.
- h.) Prior to receiving site approval under this Resolution, the applicant,

owner, and/or operator shall formulate a Decommissioning Plan to ensure that the UGWES and all facilities in the project are properly decommissioned after their useful life. Decommissioning of wind towers must occur in the event they are not in use for twelve (12) consecutive months. The plan shall include provisions for removal of all structures and foundations, restoration of soil and vegetation and a plan ensuring financial resources will be available to fully decommission the site. Disposal of structures and/or foundations shall meet the provisions of the Clermont County Building Department and the requirements of the Ohio Environmental Protection Agency for solid waste disposal. A valid demolition permit from the Clermont County Building Department shall also be required before removal of any towers, debris, access roads, electrical cabling, or structures. The Board of Zoning Appeals may require the posting of a bond, letter of credit or the establishment of an escrow account to ensure proper decommissioning.

Compliance with the Federal Aviation Administration: The applicant shall comply with all applicable Federal Aviation Administration (FAA) requirements. If lighting is required by the FAA the light shall not be strobe lighting or any other intermittent white lighting fixtures, unless expressly required by the FAA. Such intermittent lighting shall be alternated with steady red lights at night if acceptable to the FAA. No additional lighting permitted beyond the FAA minimum.

Environment: 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.

Climb Protection: All UGWES towers must be unclimbable by design or protected by anti-climbing devices.

Setbacks: All UGWES towers shall be set back a distance of no less than 1.1 times the UGWES tower height from any primary structure. The distance for indicated setback shall be measured from the point of the primary structure foundation closest to the UGWES tower to the center of the UGWES tower.

All UGWES towers shall be set back a distance of at least 1.5 times the UGWES combined tower height and highest point of the turbine blades from public roads. The distance for the indicated setback shall be measured from the edge of the public road right of way to the center of the UGWES tower foundation.

All UGWES towers shall be set back a distance of at least 1.5 times the combined tower height and highest point of the turbine blades from any adjacent property line.

Signage: A sign of no less than four square feet must be displayed in a easily noticed area from a public roadway indicating an address and toll-free telephone number, answered by a person twenty-four hours per day, seven days per week, for emergency calls and information inquires. No UGWES tower or any part thereof, no fence surrounding the UGWES site, or any building or structure located upon the UGWES site may include or display any advertising sign, banner, insignia, graphics or lettering.

Local Fire Department: The applicant, owner or operator shall submit to the local Fire Department a copy of the site plan. Upon request of the local Fire Department, the owner or operator shall cooperate with the Fire Department to develop an emergency response plan.

Noise Levels: Noise levels from each UGWES tower of UGWES project shall be in compliance with applicable State of Ohio regulations.

Wind Access Buffer: A wind access buffer of a minimum of nine hundred (900) feet must be observed to protect the wind rights of landowners adjacent to, but not participating in, the permitted project.

Birds: A qualified professional such as an ornithologist or wildlife biologist, shall conduct an avian habitat study, as part of the siting approval application process, to determine if the installation of the UGWES project will have a substantial adverse impact on birds.

Shadow Flicker: Site plan and other documents and drawings shall show mitigation measures to minimize potential impacts from shadow flicker.

Liability Insurance: The owner or operator of each UGWES tower shall maintain a current general liability policy covering bodily injury and property damage with limits of at least three million dollars per occurrence.

Expenses: All reasonable expenses incurred by the Jackson Township Zoning Commission, The Jackson Township Board of Zoning Appeals and the Jackson Township Board of Trustees to review and certify the UGWES project plan shall be paid for by the applicant.

Performance Surety: A Performance Surety Bond shall be provided by the applicant or owner/operator to assure repairs to public roads which may be damaged by the construction of the UGWES project. The amount of this bond

will be determined by mutual agreement of the applicant, owner or operator and the Jackson Township Board of trustees.

Engineering Certification: The manufacturer's engineer or another qualified engineer shall certify that the foundation and design of the Wind Turbine Towers is within accepted professional standards, given local soil and climate conditions.

Compliance with Other Standards: All power and communication lines running between UGWES towers, any adjacent structures, and to electric substations or interconnections with buildings shall be buried underground. Exemptions may be granted by the Jackson Township Board of Zoning Appeals in instances where shallow bedrock, water courses, or other elements of the natural landscape interferes with the ability to bury lines.

Schedule of Fees, Charges and Expenses: Any UGWES project shall abide by all applicable fees, charges and expenses as stated in the Jackson Township fee Schedule.

1440 Regulations - Solar Energy

Solar Panels, either free-standing or roof mounted, shall be permitted in all districts with zoning requirements related to visual appearance and appropriate safeguards.

Site Approval Application: In all districts, the applicant shall submit to the Zoning Administrator, along with a zoning permit application, the following information:

- a.) Maps, plans and/or detailed sketches showing the proposed location of the proposed solar panels.
 - b.) Measurements from property lines and the public-right-of-way.
 - c.) Distances from structures on neighboring properties.
- A. In the Residential or Business Districts all solar panels exceeding two square feet in area are not permitted in any front yard, on any face of a primary building or structure facing a street unless integrated with the ordinary construction of said building or structure, or in view of any adjacent street, except roof-mounted solar panels as set forth below.
- B. Ground mounted solar panels shall:
1. Be considered an accessory use.
 2. Be located in side or rear yards only and adhere to accessory use setback requirements.
 3. Zoning approval for ground mounted solar energy equipment which

does not meet established setback requirements for accessory use structures may only be approved by the Jackson Township Board of Zoning Appeals as a Variance or a Conditional Use.

4. Valid, non-conforming lot owners shall apply for review by the Board of Zoning Appeals for approval of solar panel placement.
5. Placement of ground mounted solar panels in the front yard of any parcel shall be reviewed by the Board of Zoning Appeals for approval of placement.
6. Not be installed without a valid permit from the Clermont County Building Department.

C. Roof mounted solar panels shall:

1. Not be installed without a valid permit from the Clermont County Building Department.
2. Solar panels installed on a building or structure with a sloped roof surface shall not project vertically above the peak of the roof to which it is attached, or project more than five (5) feet above a flat roof installation.
3. In the Residential and Business Districts roof mounted solar panels shall be located on a rear or side facing roof, as viewed from any adjacent street, unless such installation is proven to be ineffective or impossible. The removal of potential obstructions such as interceding vegetation shall not be sufficient cause for permitting a front facing installation.
4. Roof mounted solar panels shall be located so as to not increase the total height of the structure above the maximum allowable height of the structure on which it is located, in accordance with the applicable zoning regulations.

1450 Regulations – Utility Grid Solar Energy Systems

A Utility Grid Solar Energy System (UGSES) is designed and built to commercially provide electricity to the electric utility grid. A UGSES shall only be permitted in the Agricultural and Industrial Districts.

Site Approval Application: The applicant must submit an application to the Zoning Administrator for review and approval by the Jackson Township Zoning Commission and must include the following information:

- a.) Name and address of the applicant.
- b.) Evidence the applicant is the owner of the property involved or has written permission of the owner to make such application.

- c.) A plot and development plan drawn in sufficient detail to clearly describe the following:
- Physical dimensions of the property, existing structures and proposed structures.
 - Location of existing and proposed structures.
 - Location of existing and proposed electrical lines facilities.
 - Existing topography.
 - Existing wetlands
 - Proposed grading, removal of natural vegetations and relocation of wetlands (if applicable)
 - Setbacks
 - Proposed ingress and egress.
 - Proposed safety fencing to prevent trespassing.
 - Manufacturer's specifications and recommended installation methods for all major equipment, including solar panels, mounting systems, and foundations for poles or racks.
 - The number of panels to be installed.
 - A description of the method of connecting the array to a building or substation.
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- d.) Utility interconnection data and a copy of written notification to the utility of the proposed connection.
- e.) Specific information of the type, size, height, rated power output of each proposed unit, performance, safety, and glare characteristics of each solar unit and accompanying equipment, if any.
- f.) A soil boring report.
- g.) Any additional information as normally required by the Township as part of this Zoning Resolution.
- h.) A decommissioning plan shall be required to ensure that facilities are properly removed after their useful life. Decommissioning of solar panels must occur in the event they are not in use for twelve (12) consecutive months. The plan shall include provisions for removal of all structures and foundations, restoration of soil and vegetation and a plan ensuring financial resources will be available to fully decommission the site. Disposal of structures and/or foundations shall meet the provisions of the Clermont County Building Department and the requirements of the Ohio Environmental Protection Agency for solid waste disposal. A valid demolition

permit from the Clermont County Building Department shall also be required before removal of any panels or structures. The Board of Zoning Appeals may require the posting of a bond, letter of credit or the establishment of an escrow account to ensure proper decommissioning.

Signage: A sign of no less than four square feet must be displayed in a easily noticed area from a public roadway indicating an address and toll-free telephone number, answered by a person twenty-four hours per day, seven days per week, for emergency calls and information inquires. No UGSES panel or any part thereof, no fence surrounding the UGSES site, or any building or structure located upon the UGSES site may include or display any advertising sign, banner, insignia, graphics or lettering.

Local Fire Department: The applicant, owner or operator shall submit to the local Fire Department a copy of the site plan. Upon request of the local Fire Department, the owner or operator shall cooperate with the Fire Department to develop an emergency response plan.

Climb Protection: All UGSES platforms must be unclimbable by design or protected by anti-climbing devices.

Liability Insurance: The owner or operator of each UGSES facility shall maintain a current general liability policy covering bodily injury and property damage with limits of at least three million dollars per occurrence.

Expenses: All reasonable expenses incurred by the Jackson Township Zoning Commission, The Jackson Township Board of Zoning Appeals and the Jackson Township Board of Trustees to review and certify the UGSES project plan shall be paid for by the applicant.

Performance Surety: A Performance Surety Bond shall be provided by the applicant or owner/operator to assure repairs to public roads which may be damaged by the construction of the UGSES project. The amount of this bond will be determined by mutual agreement of the applicant, owner or operator and the Jackson Township Board of trustees.

Engineering Certification: The manufacturer's engineer or another qualified engineer shall certify that the foundation and design of the solar panels is within accepted professional standards, given local soil and climate conditions.

Compliance with Other Standards: All power and communication lines running between banks of solar panels and to electric substations or interconnections with buildings shall be buried underground. Exemptions may be granted by the

Jackson Township Board of Zoning Appeals in instances where shallow bedrock, water courses, or other elements of the natural landscape interferes with the ability to bury lines.

Schedule of Fees, Charges and Expenses: Any UGWES project shall abide by all applicable fees, charges and expenses as stated in the Jackson Township fee Schedule.

Section 1460 – Definitions

Access Roads – Provide construction and service access to each wind turbine.

Adverse Visual Impact – An unwelcome visual intrusion that diminishes the visual quality of an existing landscape.

Adjoining Lot Line – The property boundary lines between the real property for the proposed siting of a wind turbine generator or anemometer tower subject of the Application and real property owned by another person, persons or entity.

Anemometer – The instrument for measuring and recording the speed of the wind.

Anemometer Tower – A free-standing or guyed structure, which includes all accessory facilities on which an anemometer is mounted for the purposes of documenting whether a site has wind resources sufficient for the operation of a wind turbine generator. May also be referred to as a meteorological tower.

Decibel – A logarithmic unit of measurement that expresses the magnitude of sound pressure and sound intensity.

Db(A) – The sound pressure level in decibels. Refers to the “a” weighted scale defined by the American National Standards Institute (ANSI). A method for weighting the frequency spectrum to mimic the human ear.

Hub Height – The distance measured from ground level to the center of a wind turbine hub.

Electrical Collection System – Consists of underground and overhead cables that carry electricity from and within groups of wind turbines and transmits it to a collection substation and point of interconnection switchyard, which transfers the electricity generated by the project to the regional power grid.

Electromagnetic Fields (EMF) – A combination of invisible electric and magnetic fields of force. They can occur both naturally or due to human constructions.

Electromagnetic Radiation (EMR) – A wavelike pattern of electric and magnetic energy moving together through space.

Nacelle – The structure on a Wind Turbine tower that houses all of the generator components including, but limited to, the gearbox and the drive train.

Megawatt – A unit used to measure power, equal to one million watts.

SCADA Tower – A freestanding tower containing instrumentation that is designed to provide present moment wind data for use by the supervisory control and data acquisition (SCADA) system.

Sensitive Environmental Areas – Any areas determined by the Ohio Department of Natural Resources that consist of unique or sensitive ecological, biological or related ecosystems.

Shadow Flicker – The effect caused by the sun's casting shadows from moving wind turbine blades.

Utility Grid Solar Energy System – A Utility Grid Solar Energy System is defined as an energy generation facility or area of land principally used to convert solar energy to electricity for resale at a profit.

Utility Grid Wind Energy System - A Utility Grid Wind Energy System is defined as an energy generation facility primarily consisting of Wind Turbines principally used to convert wind energy to electricity for resale at a profit .

Wetlands – Lands on which water covers the soil or is present either at or near the surface of the soil or within the root zone, all year or for varying periods of time during the year, including during the growing season.

Wind Access Buffer – The distance from adjacent landowners' properties to the nearest wind turbine generator. In a Utility Grid Wind Energy System, this term also applies to the distance between any two or more wind turbine generators.

Wind Energy Conversion Systems - Wind Turbines and associated facilities for generating electric power from wind with a interconnection to the common electrical grid, or a on-site single building, or a series of buildings.

Wind Turbine – Consists of three major mechanical components: tower, nacelle and rotor.