

ZONING ORDINANCE 2025-1
AMENDMENT TO 2018-1 AND 2010-1

SECTION 15.48: Utility Grid Wind Energy Systems (“Wind Farms”)

Intent: A Utility Grid Wind Energy System (“Wind Farm”) is a wind energy system that is designed and built to transform wind energy into electrical energy to the electric utility grid. These Wind Farms are intended to be so constructed and located to be compatible with other land wind farm such as farms and heavy industrial wind farm, while protecting and being distant from residential developments. An anemometer tower shall abide by the same regulations below for a Utility Grid Wind Energy System and shall be removed before a utility grid wind energy system is installed. Utility Grid Wind Energy Systems may be permitted as a special land use in the A/R, OS, I-A, I-1, and I-U Districts, subject to and in compliance with the following conditions:

1. Definitions

These definitions are created for the sole purpose of this Ordinance only.

Wind Farm. A Utility Grid Wind Energy System (“Wind Farm”) is a wind energy system that is designed and built to transform wind energy into electrical energy to the electric utility grid.

Participating Property. A participating property is a site whose owner has signed an agreement with an energy or utility provider permitting the use of their property for the placement of Utility Grid Wind Energy System (“Wind Farm”) wind energy system.

2. Setbacks

- a. Any towers located on or adjacent to properties that have/are leased/contracted or owned by the wind farm shall be setback a minimum of one thousand three hundred twenty (1,320’) feet or 1½ times the tower height, including the blade in its vertical position, whichever is greater, from any leased/contracted or owned property line in any district. If adjacent properties that are leased/contracted or owned by the wind farm would like to remove the property line setback lying between them, they may do so; however, they must maintain a minimum setback of one thousand three hundred twenty (1,320’) feet or 1½ times the tower height including the blade in its vertical position, whichever is greater, from occupied structures located on the property.
- b. Any towers located on a property that is adjacent to a property line that is NOT leased/contracted or owned by the wind farm shall be set back a minimum of two thousand (2,000’) feet or 1½ times the tower height including the blade in its vertical position, whichever is greater, from any property line that is NOT leased/contracted or owned by the wind farm in any district.
- c. In addition, no part of the Utility Grid Wind Energy System, including any guy wire anchors, may extend closer than one thousand three hundred twenty (1,320’) feet to any property line or existing right-of-way line. The application shall include a plan for location(s) of accessory structures and equipment when present (including

screening) and be approved as part of the site plan. Land included within such minimum setback areas shall remain undivided.

3. Noise

- a. Sound pressure levels shall not exceed 50 dB(A) at any property line adjacent to the Utility Grid Wind Energy System that is leased/contracted or owned by the wind farm. Sound pressure levels are required to be verified by measuring/using Lmax. Sound pressure levels may be exceeded during short-term events not longer than 24 hours in any given instance, not more than a 48-hour period and not more than 10 instances per year.
- b. Sound pressure levels shall not exceed 45 dB(A) at any property line adjacent to the wind energy system that is NOT leased/contracted or owned by the wind farm. Sound pressure levels are required to be verified by measuring/using Lmax.
- c. A noise modeling and analysis report and site plan shall be required showing the locations of the systems and equipment, and showing that the system and its components will not exceed the maximum permitted sound pressure level(s). During the first 30 days of initial operation, the Applicant(s) or its Successor(s) shall provide testing of noise levels at a minimum of four different dates within a seven (7) day period, reflecting four different times of day, verifying that they will not exceed the maximum point of sound pressure level(s) and are in compliance. Measurements shall be taken at the closest point on the property line to the tower. Subsequent to the initial thirty (30) day test period, the Applicant(s) or its Successor(s) shall conduct tests of noise levels on a quarterly basis. Quarterly tests shall measure noise levels a minimum of four different dates within a seven (7) day period, reflecting four different times of day. Such reports and tests shall be subject to review by an independent agent approved by the township at the Applicant's or Successor's expense.

4. Shadow Flicker

- a. For properties that are leased/contracted or owned by the wind farm, the Applicant(s) or its Successor(s) must demonstrate no adverse shadow flicker impact will, or shall, occur from sunrise to sunset throughout the year.
- b. For properties that are not leased/contracted or owned by the wind farm but are adjacent to the property with a wind turbine, the Applicant(s) or its Successor(s) must demonstrate there will be NO shadow flicker crossing the property line from ½ hour before sunrise to a ½ hour after sunset, or during any daylight hours throughout the year.
- c. A complete shadow flicker analysis and report, which identifies problem areas and provides for the methods, measures, and actions to be performed by the Applicant(s) or its Successor(s) to eliminate the same.

5. Safety

- a. The minimum vertical blade to tip clearance from grade shall be thirty (30') feet for a wind energy system employing a horizontal axis rotor. Blade or rotor arc must

be demonstrated to be a safe and reasonable distance of at least twenty (20') feet from any separate building, structure, utility wire, and/or trees.

- b. **Guy Wire Visibility.** If a wind energy system tower is supported by guy wires, the wires shall be clearly visible to a height of at least six (6') feet above the guy wire anchors.
 - c. **Rotor or Blade Integrity Protection.** A wind energy system shall have automatic braking, governing, or a feathering system to prevent uncontrolled rotation and over speeding.
 - d. **Climb Prevention.** All private and commercial wind energy turbines, including towers or poles, must be unclimbable by design and protected by anti-climbing devices such as:
 - (i) Fences with locking portals at least six (6') feet high; or
 - (ii) Anti-climbing devices twelve (12') feet from base of pole.
 - e. Anchor points for guy wires supporting tower shall be enclosed by a six (6') foot high fence or shall be located within the confines of a yard that is completely fenced.
6. **Construction Codes, Towers and Interconnection Standards.** Wind energy systems, including towers, components and apparatus shall comply with all applicable federal laws and regulations; state construction and electrical codes; local ordinances; and building permit requirements. Wind energy systems, including towers, shall comply with Federal Aviation Administration requirements, the regulations of the Michigan Aeronautics Commission, and the Michigan Tall Structures Act. The Applicant shall provide an environmental analysis and report by a reputable, qualified professional to show, consider, identify, and assess potential impacts on the natural environment, and measures to minimize, eliminate, and mitigate adverse impacts.
7. **Height Limits.** A utility grid wind energy system (wind farm) may exceed district height limits, but shall not exceed five hundred (500') feet.
8. **Miscellaneous Requirements.**
- a. **Electromagnetic Interference.** No wind energy systems shall be installed in any location where its proximity to existing fixed broadcast, retransmission, and/or reception antennae for radio, television, or wireless telephone or other personal communication systems would produce electromagnetic interference with signal transmission and/or reception unless the Applicant(s) or its Successor(s) shall provide evidence in the form of a map that any turbine will comply with this request.
 - b. **Vibration/Enhanced Wind Currents.** No wind energy system generated vibrations or enhanced wind currents shall be perceptible beyond the property boundaries of the lot or parcel on which the wind energy system is located. The Applicant(s) or its Successor(s) shall submit engineering specifications that demonstrate compliance with this standard.
 - c. The manufacturer's Material Safety Data Sheets shall be provided. Documentation shall include the type and quantity of all materials used in the operation of all

equipment including, but not limited to, all lubricants and coolants that require a manufacturing material safety data sheet.

- d. The Applicant(s) or its Successor(s) shall provide documentation that the St. Clair County Road Commission has been contacted and, if required, that a performance bond has been posed (or other measures have been taken) for the protection and/or restoration of all roads over which heavy equipment or materials will be transported.
 - e. **Lighting.** Except as required by the FAA, lighting shall be prohibited in order to protect the rural character of the area.
 - f. **Signs.** No signs or signage shall be placed on a wind energy turbine, including towers or poles, except for operation and/or safety information of the wind energy system.
 - g. **Liability Insurance.** The owner or operator of the private or commercial utility grid wind energy system (wind farm) shall maintain a current insurance policy with a bond rating acceptable to Greenwood Township to cover installation and operation of the utility grid wind energy system. The insurance and bonding shall be provided by a reputable company with offices in the State of Michigan. The amount of the policy shall be established as a condition of conditional use permit approval.
 - h. **Indemnification by Owner(s) and Operator(s) of the Wind Energy System.** The Owner(s) and Operator(s) of the Wind Energy System, jointly and severally, shall and do, upon approval of this Special Land Use, agree to indemnify, protect, defend and hold harmless the Township of Greenwood, its Township Board Members, Officers, Employees, Agents, and Representatives, from and against any and all liabilities, losses, damages, demands, claims, and costs, including court costs and attorney fees incurred and/or arising from the Township's approval and issuance of this Special Use Permit and any permits, approvals and/or actions in regard to the subject Wind Energy Systems.
 - i. The Applicant(s) or its Successor(s) shall submit and maintain a plan of mitigations for instances of catastrophic damage or imminent danger.
9. **Nonworking Wind Energy Turbine.** A visibly damaged or inoperative wind turbine shall be repaired, replaced or removed within one year. If said wind turbine is repairable, the height limit shall not exceed five hundred (500') feet. If upgrades are made to the turbine unit, the height limit shall not exceed five hundred (500') feet. A decommissioned wind turbine may be replaced with a new wind turbine as long as it does not exceed five hundred (500') feet.

10. **Decommissioning.** The utility grid wind energy system (wind farm) and all appurtenances thereto shall be removed from the site within one (1) year after the wind energy system is no longer in use. The owner of the land upon which the system is located shall be responsible for such removal. A wind energy system which is not removed within the time allotted shall constitute a public nuisance *per se*.

The Applicant(s) or its Successor(s) shall post a bond (cash or irrevocable bank Letter of Credit) with a reputable company with offices located in the State of Michigan, and be authorized and licensed to conduct business in the State of Michigan, for five hundred thousand (\$500,000.00) dollars per turbine with Greenwood Township, for the removal of each utility grid wind energy system and/or wind turbine, including all of the above ground improvements. Decommissioning shall include the clean-up of the site, which includes removal of the foundations and debris to a depth of four (4') feet, and restoration of the site to a condition equal to or better than that which existed prior to the installation of the system. The Planning Commission will complete a review once every five years of this bond.

The decommissioning plan shall state how the facility will be decommissioned, the professional engineer's estimated cost of decommissioning; the financial resources to be used to accomplish decommissioning; and the escrow agent with which the resources shall be deposited. The decommissioning plan shall also include an agreement between the Applicant(s) and/or its Successor(s) and Greenwood Township, that:

- a. The financial resources for decommissioning shall be in the form of a surety bond or shall be deposited in an escrow account with an escrow agent acceptable to Greenwood Township.
 - b. The Township shall have access and authority to withdraw escrow account funds or surety bond for the expressed purpose of completing decommissioning if decommissioning is not completed by the Applicant(s) or its Successor(s) within one (1) year of the end of project life or facility abandonment.
 - c. The Township is granted the right of entry onto the site, pursuant to reasonable notice, to effect or complete decommissioning.
 - d. The Township is granted the right to seek injunctive relief to effect or complete decommissioning, as well as the Township's right to seek reimbursement from Applicant(s) or its Successor(s) for decommissioning costs in excess of the amount deposited in escrow and to file a lien against any real estate owned by owner(s), Applicant(s) and/or Applicant Successor(s), or in which they have an interest, for the amount of the excess, and to take all steps allowed by law to enforce said lien. Financial provisions shall not be so onerous as to make wind power projects unfeasible.
11. A developer may seek planning commission approval of a Utility Grid Wind Energy System ("Wind Farm") incorporating a block of or group of properties under multiple or separate ownerships provided that:
- a. All of the above regulations shall still apply, but to the whole rather than individual properties.

- b. A written agreement among the participating property owners has been signed and recorded at the County Register of Deeds, and a true and complete copy provided to Greenwood Township.

12. **Taxes**

If at any time there is a change in the formula or calculation used for real and/or personal property taxes as it relates to the Utility Grid Wind Energy System (“Wind Farm”) which would result in Greenwood Township, the Yale Public Schools, and/or other schools, to receive less tax revenue or no tax revenue from the wind farm, the wind farm shall pay directly to the Township, Yale Public Schools and/or other schools, an amount in lieu of said real and/or personal property taxes based upon the tax structure for the Utility Grid Wind Energy System (“Wind Farm”), or payment in lieu of taxes possible per megawatt output, or a formula developed by the State of Michigan, to be determined at the time the permit is applied for.

13. **Publication**

This Ordinance shall be published in full, in a newspaper of general circulation in the Township of Greenwood, within fifteen (15) days after its adoption.

14. **Effective Date**

This Ordinance shall take effect 30 days after publication as set forth in Section 14, in the manner provided for in the Michigan Zoning Enabling Act Number 110 of 2006, as amended.

15. **Adoption**

This Ordinance was adopted by the Greenwood Township Board at a meeting held on Tuesday, February 11, 2025.

Adopted: February 11, 2025

Published: February 19, 2025

Effective: March, 20, 2025

OFFERED BY: Eric Krikorian

SUPPORTED BY: Marvin Roberts

Upon a roll call vote, the following voted:

Marvin Roberts Yes

Eric Krikorian Yes

Rebecca Ramsey Yes

Doug Nowicki Yes

Sonya O'Brien Yes

CERTIFICATION

I, Sonya O'Brien, the Clerk of the Township of Greenwood, in the County of St. Clair, State of Michigan, hereby certify that the foregoing is a true and complete copy of a ordinance adopted by the Township Board of the Township of Greenwood, County of St. Clair, Michigan at a regular meeting held on February 11, 2025 and that said meeting was conducted and public notice was given in full compliance with the Open Meetings Act, being Act 268, Public Acts of Michigan 1976, and that the minutes were kept and will be or have been made available as required by said Act.



Sonya O'Brien
Greenwood Township Clerk

Dated: 02/11/2025