

**TOWNSHIP OF SHERIDAN  
CLARE COUNTY, MICHIGAN**

**ORDINANCE TO PROVIDE FOR  
PUBLIC UTILITY FACILITIES AND  
WIND ENERGY CONVERSION  
SYSTEMS**

**ORDINANCE NO. 1-2023**

*This Ordinance is intended to protect the health, safety, and welfare of the residents of Sheridan Township and to encourage the safe, effective, efficient, and orderly development and operation of wind energy resources in Sheridan Township. With advances in technology of wind energy development, specific locations within the Township might support the implementation of Utility Grid Wind Energy Systems. To prepare for potential wind development projects within the Township, this Ordinance will require such developments to prepare and submit plans to ensure wind development sites are appropriately located so as to protect the character and stability of the Township's residential, agricultural, recreational, commercial and industrial areas while simultaneously preserving and protecting the Township's important environmental and ecological assets and areas, open spaces, viewscapes, aesthetics, wetlands, and other ecological and environmentally valuable areas. Township residents are especially apprehensive regarding the effects of WECS night lighting on the health, safety and welfare of township residents. Accordingly, regulations are necessary to further the above goals and, equally important, to minimize the potential adverse effects of this land use upon township citizens and properties.*

**THE TOWNSHIP OF SHERIDAN ORDAINS:**

**Section 1. Legislative Intent and Purpose.**

The Township of Sheridan (the "Township") adopts the following provisions for the health, safety, and welfare of Township residents. The purpose of this Ordinance is to enact reasonable regulations on Wind Energy Facilities to advance and carry out the findings above, and therefore the purposes include among other things the following: to regulate the activity of installing and operating Wind Energy Facilities in the Township; to protect the public health, safety, and welfare of the residents of the Township and the residents' property in the Township; to protect against the creation of nuisances and hazards to the public health, safety, and welfare that would result if the activity of installing and operating Wind Energy Facilities occurred in the Township without regulation; to regulate the installation, operation, and de-commissioning of utility-scale Wind Energy Facilities and equipment and facilities related to those facilities; to create a process and procedure for the Township Board to review and issue permits for Wind Energy Facilities in the Township; to promote the safe, effective, and efficient installation and operation of Wind Energy Facilities; and to minimize adverse impacts from Wind Energy Facilities.

The following reasonable police power regulations in this Ordinance have been developed to obtain an appropriate balance between the need for clean, renewable energy resources and the need to protect the public health, safety, and welfare of persons and property in the Township. The Township wishes to adopt this Ordinance to impose reasonable regulations to decrease hazards and negative impacts associated with wind turbines in general and unregulated wind turbines in

particular, and to protect the health, safety and welfare of the residents of Sheridan Township.

## **Section 2. Definitions.**

### **Public Utility Facilities and Wind Energy Conversion Systems Definitions as Used in This Ordinance:**

*Participating Landowner:* A landowner who has leased land to the WECS Applicant, received financial remuneration from the WECS Applicant, recorded with the Clare County Register of Deeds said agreement, and has a contract with the WECS Applicant. A Participating Landowner may also be called a WECS contract leaseholder. A Participating Landowner may or may not have turbines or infrastructure located on his or her property.

*Non-Participating Landowner:* A landowner who has not signed a contract or any legal document with the WECS Applicant and has not given up rights to his or her owned land to the WECS Applicant.

*SCADA (supervisory control and data acquisition):* A computer system that monitors and controls WECS units.

*dBA:* The A-weighted sound level.

*dBC:* The C-weighted sound level.

*Pasquill Stability Class:* Reference, wikipedia.org "Outline of air pollution dispersion".

*Adverse Sound Character:* Sound that causes building rattle, is impulsive, tonal, or has low-frequency bass rumble.

*Ambient:* Ambient is defined as the sound pressure level exceeded 90% of the time over a 96-hour measurement period with daytime/nighttime division.

*ANSI:* the American National Standards Institute.

*Audible:* The varying degrees of sound perception as reported by affidavit, including, but not limited to, perceptible, audible, clearly audible, and objectionable.

*Commercial Wind Energy Conversion System (WECS):* (also called large or utility-scale) A Wind Energy Conversion System in which the principal design, purpose, or use is to provide energy to off-site uses or the wholesale or retail sale of generated electricity to any person or entity.

*Decibel (dB):* The practical unit of measurement for sound pressure level; the number of decibels of a measured sound is equal to 20 times the logarithm to the base 10 of the ratio of the sound pressure of the measured sound to the sound pressure of a standard sound (20 microPascals), abbreviated "dB."

*Development Plan:* A common term for a development design and description for a specific

project including, but not limited to, parcel boundaries, topography, and existing structures, proposed utilities, infrastructure, structures, and other construction or improvements, distances from boundaries and or between structures including set-backs from certain markers, e.g., road rights-of-way or existing structures, that is used for permitting and construction purposes of a proposed project.

*Emergency work:* Any work or action necessary to deliver essential services in an emergency situation, including, but not limited to, repairing water, gas, electricity, telephone and sewer facilities and public transportation, removing fallen trees on public rights-of-way, and abating life-threatening conditions.

*Equivalent Sound Level (or Leq):* The sound level measured in decibels with an integrating sound level meter and averaged on an energy basis over a specific duration.

*Excessive noise:* Sound that is determined (by ordinance) to be too loud or unnecessary or creates a noise disturbance.

*Density:* A term used to describe the number of a specific type of facility or establishment that may be within a certain area, often designated by distances between facilities, such as highway signs, liquor stores, or marijuana facilities.

*Noise:* A sound, especially one that is loud or unpleasant or that causes disturbance. Any airborne sounds of such level and duration as to be, or tend to be, injurious to human health or welfare (well-being) or that would unreasonably interfere with activities or the enjoyment of life or property.

*Non-commercial, Proprietor Wind Energy Conversion System:* A Wind Energy Conversion System in which the principal design, purpose, and use is to provide energy exclusively for on-site uses and not for sale to a utility on the grid except for the sale of surplus electric energy produced. Also referred to as non-commercial, personal, private, accessory, or residential.

*Quiet Rural or Residential property:* Any property where there is an inherent expectation of quiet, including, but not limited to, residences, businesses, single family homes, and retirement homes.

*Set-back:* Is a commonly used term to denote a minimum distance required between certain structures or elements of structures from rights-of-way or property boundaries.

*Shadow Flicker:* The effect of the sun (low on the horizon) shining through the rotating blades of a wind turbine, casting a moving shadow. It will be perceived as a “flicker” due to the rotating blades repeatedly casting the shadow.

*Sound level meter:* An instrument for the measurement of sound levels that meets the ANSI requirements of S1.4-1983 (or later revision) for Type 1 or 2 instruments. For frequency analysis, octave and 1/3 octave filters shall conform to ANSI S1.11-1986 (or later revision).

*GIS:* Geographic Information System and is comparable to GPS (global positioning system) coordinates.

*Survival Wind Speed:* The maximum wind speed, as designated by the WECS manufacturer, at which a WECS in unattended operation (not necessarily producing power) is designed to survive without damage to any structural equipment or loss of the ability to function normally.

*Tip Height:* The height of the turbine with a blade at the highest vertical point.

*Wind Energy Conversion System (WECS):* Any combination of the following:

- (a) A mill or machine operated by wind acting on oblique vanes or sails that radiate from a horizontal shaft;
- (b) A surface area such as a blade, rotor, or similar device, either variable or fixed, for utilizing the wind for electrical or mechanical power;
- (c) A shaft, gearing, belt, or coupling utilized to convert the rotation of the surface area into a form suitable for driving a generator, alternator, or other electricity-producing device;
- (d) The generator, alternator, or another device to convert the mechanical energy of its surface area into electrical energy;
- (e) The tower, pylon, or other structure upon which any, all, or some combination of the above are mounted.
- (f) Any other components not listed above but associated with the normal construction, operation, and maintenance of a wind energy conversion system.

*WECS Applicant:* The person, firm, corporation, company, limited liability corporation or other entity, as well as the Applicant's successors, assigns and/or transferees, which applies for Township approval (permit) to construct a WECS and WECS Testing Facility. An Applicant must have the legal authority to represent and bind the Participating Landowner or lessee, who will construct, own, and operate the WECS or Testing Facility. The duties and obligations regarding an approval for any approved WECS or Testing Facility shall be with the WECS or Testing Facility owner, and jointly and severally with the owner, operator, and lessee of the WECS or Testing Facility if different than the WECS owner.

*Wind Energy Conversion System (WECS) Testing Facility:* A structure and equipment such as a meteorological tower for the collection of wind data and other meteorological data and transmission to a collection source; it shall not be deemed to be a communication tower.

*L<sub>max</sub>:* The maximum dB(A) or dB(C) sound level measured using the "fast response" setting of the sound meter (equivalent to 0.125 second exponential averaging time).

*L<sub>10</sub>:* Is the noise level exceeded for 10% of the time of the measurement duration. This is often used to give an indication of the upper limit of fluctuating noise, such as that from road traffic.

*L90*: Is the noise level exceeded for 90% of the time of the measurement duration and is commonly used to determine ambient or background noise level.

### **Section 3. General Provisions.**

#### **PUBLIC UTILITY FACILITIES AND WIND ENERGY CONVERSION SYSTEMS (WECS)**

- A. **PUBLIC UTILITIES.** Transmission lines, sewer lines, water mains, pumping stations, substations, poles, and related equipment owned or provided by public utility companies or by the Township shall be permitted. Any office, manufacturing, or sales buildings, any equipment enclosures, substations, equipment storage buildings or similar structures shall be subject to review requirements. All communication towers or commercial wind energy conversion systems operated by public utility companies shall be subject to the requirements of this ordinance “Public Utility and Wind Energy Conversion Systems (WECS)”. Unless specifically noted, all WECS permit information and supporting documentation shall be allocated reasonable Township review time based on project complexity and outside expertise review. Requirements shall be presented in written form and allow minimum thirty (30) days before Township discussion. Township may at its discretion review provided documents sooner or later than thirty (30) days. Providing documents without time for the Township Board to review shall result in permit denial and require WECS applicant to reapply. Each ordinance section requires approval by the Township Board unless otherwise noted. Township shall review all documentation to assure that residents’ health, welfare, and safety are not negatively impinged.
- B. **EXEMPT TOWERS AND WIND ENERGY CONVERSION SYSTEMS (WECS).** **Non-commercial** communication towers, antennas, wind energy conversion systems (windmills, turbines) and related facilities which do not involve the sale of electricity or communication services off the premises shall be exempt from the requirements of “Public Utility and Wind Energy Conversion Systems (WECS)” except for the requirement to comply with “Noise” sections 23 (a) and 23 (b). Such units shall be allowed as a permitted accessory use, providing the electricity or communication services are used on site for a farm, home or business. The minimum set-back from property lines and road right of way lines shall be equal to three (3) times the Tip Height of the unit.
- C. **COMMERCIAL WIND ENERGY CONVERSION SYSTEMS (WECS) APPLICATION.** Wind energy conversion systems and WECS testing facilities, other than those exempted under section B “Exempt Towers and Wind Energy Conversion Systems (WECS)”, shall be allowed throughout the township. Supporting data and documentation must be submitted in their entirety at time of application. Applicant owner shall provide to the Township updated documents throughout the lifespan of the WECS upon request by the Township Board.

An applicant shall include the following in an application:

1. A summary narrative describing the proposed WECS, including an overview of the project; the approximate generating capacity of the WECS; the number and types (or range of heights) of Wind Turbines proposed to be constructed, including their Turbine Heights, Hub Heights, and dimensions and respective manufacturers); and a description of ancillary facilities.

2. The parcel identification number for all parcels on which the proposed WECS would occur.
3. Evidence of an agreement between the property owner and the proposed facility's owner or operator confirming the owner or operator has permission of the property owner to apply for the necessary permits for construction and operation of the SES. A copy of that portion of the applicant's lease with the landowner(s) for the listed parcels granting easements and authority for use shall be provided. This shall be in the form of a copy of documents recorded with the Clare County Register of Deeds. Copies of recorded documents must also be provided for any waiver agreements as authorized by this Ordinance entered into by non-participating landowners.
4. Identify and quantify solid waste or hazardous waste generated by the project. This includes plans for the spill prevention, clean-up, and disposal of fuels, oils, and hazardous wastes.
5. Permitting Costs: An escrow account shall be set up when the Applicant applies for a Permit for a WECS and WECS Testing Facilities. The monetary amount filed by the Applicant with the Township shall be in an amount estimated by the Township Board to cover all reasonable costs and expenses associated with the plan review and approval process, which costs can include, but are not limited to, fees of the Township Attorney, Township Planner, and Township Engineer, as well as any reports or studies which the Township anticipates it may have done related to the review process for the particular application. Such escrow amount shall include regularly established fees. At any point during the review process, the Township may require that the Applicant place additional monies into the Township escrow should the existing escrow amount filed by the Applicant prove insufficient. If the escrow account needs replenishing and the Applicant refuses to do so within fourteen (14) days after receiving notice, the review and approval process shall cease until and unless the Applicant makes the required escrow deposit. Any escrow amounts which are in excess of actual costs shall be returned to the Applicant within ninety (90) days of permitting process completion. An itemized billing of all expenses shall be provided to the Applicant. The Township shall hire qualified professionals at the applicant's expense for each and any of the technical fields associated with the WECS Permit, such as, but not limited to, electrical, acoustics, environmental, economics, wildlife, health, and land-use.
6. Environmental Assessment: The Applicant shall fund an environmental assessment or impact study and other relevant report(s) or studies (including, but not limited to, assessing the potential impact on endangered species, eagles, birds, or other wildlife) as require by the Township for review. Studies shall be limited to the area within three (3) miles outside the Township boundaries.
7. Sound Study: A background (ambient) sound study shall be performed, and a report provided which indicates Leq 1 second, L10, and L90 sound levels using A-weighting and C-weighting. Data shall be collected at midpoints along property lines of adjoining Non-Participating and Participating Landowners. Measurement procedures are to follow the most recent versions of ANSI S12.18 and ANSI S12.9, Part 3 guideline (with an observer present). Measurements shall be taken using an ANSI or IEC Type 1 Precision Integrating Sound Level Meter. The study must include a minimum of a four-day (96 hour) testing period, include one Sunday, and divide data by daytime and

nighttime. The sound background study shall report for the period of the monitoring topography, temperature, weather patterns, sources of ambient sound, and prevailing wind direction.

8. Economic Impact: The Applicant shall fund and provide an economic impact study for the area affected by the WECS project. Such a study shall include probable financial impact regarding jobs, tax revenue, lease payments, and property values at a minimum. Business and residential growth potential shall be considered.
9. Development Plan: The Applicant shall submit a development plan prepared by a licensed civil engineer in full compliance with the requirements of this Ordinance. The Applicant shall also submit a written explanation of the design characteristics and the ability of the structure(s) and attendant facilities to withstand winds, ice, and other naturally occurring hazards, as well as information regarding health, welfare, and safety in areas including, but not limited to, noise, vibration, shadow flicker, and blade ice deposits. This information shall also address the potential for the WECS to structurally fail or collapse, and what results should be expected in such an event. Additional requirements for a WECS site plan are as follows:
  - (a) Building Siting: GIS locations and height of all proposed buildings, structures, electrical lines, towers, guy wires, guy wire anchors, security fencing, and other above-ground structures associated with the WECS.
  - (b) Nearby Building Siting: GIS locations and height of all adjacent buildings, structures, and above ground utilities located within three (3) times minimum set-back distance for Non-Participating Landowners where the proposed WECS and WECS Testing Facility will be located. The location of all existing and proposed overhead and underground electrical transmission or distribution lines shall be shown, whether to be utilized or not with the WECS or Testing Facility, located on the lot or parcels involved.
  - (c) Access Driveways: GIS location of WECS and Testing Facility access driveways together with details regarding dimensions, composition, and maintenance of the proposed driveways. The site plan shall include traffic routes, time of the year use, staging areas, and any other physical sites related to WECS. Construction of the Access Driveway that serves a WECS or Testing Facility is required to protect the public health, safety, and welfare by offering an adequate means by which governmental agencies may readily access the site in the event of an emergency. All such roads shall be constructed to allow access at all times by any emergency service vehicles, such as fire, police, and repair. Access driveways shall be no closer than 300' to an adjacent property unless Applicant provides documentation in the form of a signed approval by affected Participating and Non-Participating Landowners. Such approval shall be recorded with the Clare County Register of Deeds using only the WECS Waiver Form.
  - (d) Facility Security: Security measures shall be sufficient to prevent unauthorized trespass and to protect health, welfare, and safety.
  - (e) Maintenance Program and Resolution Program: The Applicant shall provide to the

Township a written description of the potential problems and failures program to be used to resolve a WECS and WECS Testing Facility issue, including procedures and schedules for removal of the WECS structure when determined to be obsolete, dangerous, or abandoned.

- (f) **Site Lighting:** A lighting plan for each WECS and Testing Facility. Such plan must describe all lighting that will be utilized and documentation that FAA requirements are met. RADAR activated lighting shall be utilized if allowed by FAA. Such a plan shall include, but is not limited to, the planned number and location of lights, light color, activation methods, effect on township residents and whether any lights blink. Due to complexity in describing lighting effects for health, welfare, and safety, the Applicant shall, if available, provide example locations with product descriptions, where similar, or proposed, lighting solutions are currently deployed. Lighting shall be fully shielded from the ground, be FAA compliant, and be of most current design to minimize light blinking and brightness nuisance. Flashing night lights are prohibited.
  - (g) **Proof of documents recorded at the Clare County Register of Deeds utilizing the WECS Waiver Form.**
  - (h) **Supplemental:** Additional detail(s) and information as requested by the Township Board.
10. **Site Insurance:** The Applicant shall provide proof of insurance for each WECS at all times for at least \$2,000,000 for liability, property damage, livestock damage, and future earnings loss. Applicant shall provide yearly proof of insurance to Township that confirms active coverage for the Applicant, Township, Participating Landowners, and Non-Participating Landowners. Aggregate policies are allowed if minimum coverage per WECS is satisfied, and coverage is provided for every site where Applicant's equipment is located.
11. **Removal Insurance (decommissioning):** To ensure the proper removal of each WECS structure and all appurtenant structures, roadways, etc. when they are abandoned or non-operational, the WECS application shall include a proof of the financial security in effect before a permit is approved. The security company shall be licensed in the State of Michigan and the required insurance shall be in the form of 1) cash deposit or 2) performance (surety) bond selected by the Township Board and bonded by a top institution from the Department of the Treasury's Listing of Approved Sureties - Department Circular 570, T-list. The duration of the security shall be termed to the removal of each WECS as stated in the ordinance. Additionally, security shall be based on each WECS and backed by owner assets, operator assets, parent company assets, and leaseholder assets approved by the Township Board.
- (a) The amount of each WECS security guarantee (surety) shall be the average of at least two independent (of Applicant) demolition removal quotes, obtained by the Township Board, plus 10%. For example, if the quantity of quotes obtained is two, the formula shall be:  $\text{quote 1} + \text{quote 2} \div 2 \times 1.10$ . The security guarantee shall be no less than \$800,000 per WECS. Quotes shall be based on individual WECS removal and shall not group multiple simultaneous WECS removals together.



Quotes shall be ordered and obtained by the Township from established demolition companies. Quotes shall not include salvage values. Security guarantee shall be updated every five (5) years at the rate of 1.5 times CPI (consumer price index) for each year.

- (b) Such financial guarantee shall be deposited or filed with the Township Clerk after the WECS permit has been approved and before construction operations begin on the WECS project. Failure to keep such financial security in full force and effect at all times while the structure exists shall constitute a material and significant violation of the WECS permit approval and of this ordinance and shall subject the Applicant to all available remedies to the Township, including enforcement action, fines, revocation of the WECS permit approval and WECS removal.
  - (c) The Applicant shall be responsible for the payment of all attorney fees and other costs incurred by the Township in the event that the structure is not voluntarily removed and the Township has to enforce removal.
  - (d) In the event the WECS owner, operator, parent company, or performance bond company defaults on any or all of the decommissioning requirements, the Participating Landowner upon which each WECS is located shall be responsible and liable for the removal of each WECS. Failure of the Participating Landowner to comply with the removal and decommissioning guidelines shall result in the Township having the WECS removed at the expense of the Participating Landowner. If funding is not available to cover the costs of removal by the Participating Landowner, legal action to pursue the seizure of Participating Landowner property(ies) will take place to cover such costs.
12. Safety Manual: The Applicant shall provide an unredacted copy of the manufacturer's safety manual for each model of turbine without distribution restraints to be kept at the Township Hall and other locations deemed necessary by the Township Board and local first responders. The Manual shall include standard details for an industrial site such as materials, chemicals, fire, access, safe distances during WECS failure, processes in emergencies, etc. The Applicant shall provide information and training to the appropriate affiliated Township fire departments regarding fire and other possible hazards associated with the WECS.
13. Repair Policy Documentation: Applicant shall provide a detailed policy and process book for the repair, replacement, and removal of malfunctioning, defective, worn, or non-compliant WECS. Sections of the process book should consider any ordinance requirement or WECS performance deficiency.
14. Shadow Flicker: Applicant shall analyze and predict where shadow flicker could occur and become a problem and shall show how that potential has been addressed in planning for the project.
15. Noise: Applicant shall provide an initial sound modeling report and a post-construction report for the project with a schedule and documentation which adhere to the following:
- (a) Chart outlining ordinance requirements and a description of compliance or non-

compliance.

- (b) Declaration whether submitted data is modeled or measured.
  - (c) Declaration of values, test methods, data sources, and similar information for all modeled or measured data.
  - (d) Estimated timeline for project including ordinance requirements completed, construction, post construction, and validation testing.
  - (e) Applicant measured data shall be accompanied by SCADA data confirming full power during testing. Unless otherwise requested, minimum SCADA data format shall be grouped in 24hr periods and 1 second intervals including wind vector, wind speed, temperature, humidity, time-of-day, WECS power output, WECS amps, WECS volts, WECS nacelle vector, WECS blade RPM, WECS blade pitch.
  - (f) Permitting data may be submitted based on WECS manufacturer data. However, measured data from active and similar WECS facilities shall be simultaneously submitted.
  - (g) It is acknowledged that WECS units sustain wear over time. Applicant is to submit data from existing and similar WECS installations showing aged sound measurements (to demonstrate compliance potential over the life of WECS) in accordance with this ordinance for 5, 10, and 15-year-old units.
  - (h) Modeling factors shall be set for the worst-case environment, such as high humidity, frozen ground (non-porous), atmospheric variances (atmospheric profile Pasquill Stability Class E or F preferred), elevated noise source and no ground cover. Use of modeling methods standards shall have deficiencies or limitations fully disclosed and shall include known error margins. Non-disclosure of modeling method deficiencies shall require resubmission of the WECS application in its entirety with complete modeling deficiencies disclosed.
16. Ice Throw Modeling. A copy of an ice throw and blade throw modeling and analysis report demonstrating the expected ice throw and blade throw from the proposed WECS.
17. Interference Report. A report, prepared by a qualified professional, regarding the impact the WECS will have on existing reception of television, radio, telephone (both cellular and land line), broadband internet, navigational devices, and alarms within one mile of the WECS Participating Parcel boundaries.
18. Provide access plan during construction and operation phases. Plans for dust control on access roads must be provided along with a schedule for maintenance and weed control. The plan shall show proposed project service road ingress and egress access onto primary and secondary routes, layout of the array service road system.
19. A copy of the application and approval of the power of purchase agreement with the utility company that will be purchasing electricity from the proposed development shall be provided to the Township.

20. Any additional information or documentation requested by the Township Board, or other Township representative.

D. COMMERCIAL WIND ENERGY CONVERSION SYSTEMS (WECS) – STANDARDS AND REQUIREMENTS. The WECS project shall meet the following standards and requirements:

1. Set-Back: The minimum set-back from any property line of a Non-Participating Landowner or any road right-of-way shall be no less than 2,000 feet unless Applicant shall provide documentation in the form of a signed approval by affected Participating and Non-Participating Landowners waiving these requirements. Documents in full shall be recorded, using only the WECS Waiver Form, with the Clare County Register of Deeds. Use turbine pole centerline as WECS measuring point.
2. Density: A proposed WECS shall be one-half mile from the nearest existing WECS. Only two (2) WECS shall be allowed per square mile.
3. Aesthetic and Scenic Vista: The maximum Tip Height of any WECS or WECS Testing Facility shall not exceed 300 feet.
4. Applicant Compliance: The WECS and related equipment shall comply with any and all State, Federal, County and Township requirements.
5. Blade Clearance: Blade arcs created by a WECS shall have a minimum of thirty (30) feet of clearance above the ground or above any structures within the arc of the WECS blades.
6. Braking: Each WECS shall be equipped with a braking, or equivalent device, capable of stopping the WECS operation in high winds with or without SCADA control. Braking system shall be effective during a complete grid power failure where WECS are unable to communicate with SCADA control or receive power.
7. Identification Signage: Each WECS and Testing Facility shall have one sign per turbine, or tower, located at the roadside and one sign attached to base of each WECS, easily visible throughout all four seasons. Signs shall be at least two square feet in area. Signs shall be the same design and shall uniquely identify each WECS. Signage shall comply with the provisions set forth in this Ordinance. Additional signage on and around the tower is recommended. The sign shall contain at least the following:
  - (a) “Warning high voltage.”
  - (b) Participating Landowner’s name, WECS owner’s name, and operator’s name.
  - (c) Emergency telephone numbers and web address. (List more than one number.)
  - (d) If WECS uses fencing, place signs on the perimeter fence at fence entrance gate.

- (e) Unique identification such as the address of the WECS. If more than one WECS is on an access drive, units shall have further identification such that first responders can positively identify each one. An identification example is: “321 Ruger Rd, Clare, MI, Unit A.”
- 8. Communication Interference: Each WECS and Testing Facility shall be designed, constructed, and operated so as not to cause radio, television or other communication interference. In the event that verified interference is experienced and confirmed by a licensed engineer, the Applicant must produce confirmation that said interference had been resolved to property owner’s satisfaction within ninety (90) days of receipt of the complaint. Any such complaints shall follow the process stated in Complaint Resolution section D.18 below.
- 9. Infrastructure Wiring: All electrical connection systems and lines from the WECS to the electrical grid connection shall be located and maintained underground. Burial depth shall be at a depth that causes no known environmental, land use, or safety issues. Depth shall be a minimum of six (6) feet below grade, be deeper than drain tile and be in compliance with NEC 2014 or newer Code standards. The Planning Commission may waive the burial requirement and allow above-ground systems in limited circumstances, such as unworkable geography or a demonstrated benefit to the township. The waiver shall not be granted solely on cost savings to Applicant. Request for variation shall consider aesthetics, future use of land, and effect on nearby landowners.
- 10. Road Damage: Any damage to a public road located within the Township resulting from the construction, maintenance, or operation of a WECS or Testing Facility shall be repaired at the Applicant/Owner’s expense pursuant to Clare County Road Commission requirements within sixty (60) days of the damage. In difficult circumstances, the Township may allow repairs to exceed sixty (60) days, but no repairs shall exceed 365 days.
- 11. Damage to Other Existing Infrastructure: Applicant shall examine all existing infrastructure on the project site including, but not limited to underground and above ground utilities (telephone, data and electrical service, water supply, sewer lines, etc.) and drain tile systems and shall denote these on the site plan. No foundations or structures shall be constructed in any way that will cause damage to these systems or infrastructure.
- 12. Liability Insurance: The current WECS owner and operator shall insure for liability for the WECS without interruption until removed and comply with section “Site Insurance” to protect the current WECS owner and operator, the Township, and the property owner.
- 13. Coating and Color: A WECS shall be painted a non-obtrusive (light environmental color such as beige, gray or off-white) color that is non-reflective. The wind turbine base and blades shall be of a color consistent with all other turbines in the area, if any. No striping of color or advertisement shall be visible on the blades or tower.
- 14. Strobe Effect: Under no circumstances, shall a WECS or Testing Facility produce shadow flicker, or strobe-effect, on properties without a signed release from affected Participating and Non-Participating Landowners. Such releases shall be recorded with the

Clare County Register of Deeds waiving these requirements. Documents in full shall be recorded with the Clare County Register of Deeds using only the WECS Waiver Form.

15. **Voltage:** The Applicant shall be responsible for compensation to residents for property, including livestock, health or other damage by stray voltage caused by a WECS. The Applicant shall demonstrate WECS prohibits stray voltage, surge voltage, and power from entering the ground.
16. **Protection of Adjoining Property:** In addition to the other requirements and standards contained in this section, the Township Board shall not approve any WECS or Testing Facility unless it finds that the WECS or Testing Facility will not pose a safety hazard or unreasonable risk of harm to the occupants of any adjoining properties or to wildlife on adjoining properties.
17. **Removal and Site Renovation:** A condition of every WECS approval shall be adequate provision for the removal of the structure and appurtenances in their entirety whenever it ceases to produce power for one hundred eighty (180) days or more. The Township Board can grant an extension of an additional one hundred eighty (180) days upon the WECS owner demonstrating that the structure will be put back into effective use. Removal shall include the proper receipt of a demolition permit from the Sheridan Township Board designated code/building authority and proper restoration of the site to original condition. Removal of the structure, wiring, and its accessory use facilities shall include removing the tower caisson and all other components in their entirety. Restoration must be completed within 365 days of non-operation.
  - (a) Participating Landowners may waive complete underground wiring removal if they can demonstrate that any and all remaining underground wiring will not negatively affect the environment, such as but not limited to, water quality, natural water flow, or area wildlife. The Participating Landowner shall execute a waiver and record same in full with Clare County Register of Deeds waiving these requirements.
18. **Operational, Maintenance, and Issue Resolution:** Each WECS and Testing Facility must be kept and maintained in good repair and condition at all times. If a WECS is not maintained in operational and reasonable condition or poses a potential safety hazard, the Applicant shall take expeditious action to correct the situation, including a WECS removal, if necessary. The Applicant shall keep a maintenance log on each WECS and shall provide the complete log to the Township within thirty (30) days of request. Any inspection of a WECS requiring inspection by a Township expert shall be at the expense of the facility owner/operator.
19. **Complaint Resolution:** A complaint resolution process shall be established by the township as follows:
  - (a) **Receiving and Forwarding of Complaints:** A third party answering switchboard, website or equivalent, paid for by the Applicant or WECS or Testing Facility owner shall be established. The cost to maintain and support this shall be funded in the amount of \$10,000.00 as approved by the township and be replenished at least every five (5) years by the Applicant or WECS owner. The complaint resolution

process shall be independent of the facility operator or owner and shall report to the Township first and WECS operator second.

- (b) Investigation of Complaints: Township shall initiate an investigation into a complaint within sixty (60) days, utilizing escrow funds, to hire the appropriate expert(s).
  - (c) Hearing of Complaints: Township Board shall set a hearing date within sixty (60) days of the completion of the Investigation of Complaints where experts, residents and the system operator/owner may present information before the Township Board. Notice of the hearing shall be sent to the property owner, the facility owner/operator and to all property owners within 3,000 feet of the WECS via first class mail.
  - (d) Decision Regarding Complaints: Township Board shall issue a decision and the required corrective actions within forty-five (45) days of the Hearing of Complaints.
20. Applicant/Owner shall be required as a condition of approval to fund with the Township an escrow account for investigation of complaints for, but not limited to, shadow flicker, stray voltage, noise, and signal interference in the amount of \$15,000.00 to be used at the discretion of the Sheridan Township Board. When escrow account balance is below \$5,000.00, Township shall notify the Applicant/Owner and the Applicant/Owner shall replenish account in the amount of \$15,000.00 within 45 days.
21. Regulation of WECS Commercial and Industrial Noise: To preserve quality of life, peace, and tranquility, and protect the natural quiet of the environment. This ordinance establishes the acoustic baseline, background sound levels for project design purposes, and limits the maximum noise level emissions for commercial and industrial developments. Residents shall be protected from exposure to noise emitted from commercial and industrial development by regulating said noise.
22. The Township Board reserves the right to require a WECS Applicant/Owner to shut down any WECS unit that does not meet ordinance requirements until such WECS unit meets ordinance requirements.
23. Complaints: If the Township Board confirms a complaint and issues a corrective action, SCADA data from WECS within two miles of issue shall be required and delivered to Township within seven (7) days of notification. SCADA data format shall be determined by Township, Township licensed engineers, or Township professional acousticians. Unless otherwise requested, minimum SCADA data format shall be grouped in 24hr periods and one second intervals including wind vector, wind speed, temperature, humidity, time-of-day, WECS power output, WECS amps, WECS volts, WECS nacelle vector, WECS blade RPM, WECS blade pitch. SCADA data will be provided to the township without charge. Residents shall have the right to also request SCADA data in at least the minimum format at the cost of \$200/WECS per time period requested. Common SCADA formats shall include meteorological and performance data such as, but not limited to, temperature, humidity, power output, RPM, wind velocity, wind direction, and nacelle vector. Data format shall be determined by the Township, such as

“csv” or “xlsx”.

24. Noise:

- (a) No WECS shall generate or permit to be generated audible noise that exceeds 40 dBA L<sub>max</sub> or 50 dBC L<sub>max</sub> (dBC to dBA ratio of 10 dB per ANSI standard S12.9 Part 4 Annex D) during any time, for any duration, at a property line or any point within a non-Participating property, unless Applicant/Owner provides documentation in the form of a signed agreement by the Participating and Non-Participating Landowner waiving these requirements. Said documents in full shall be recorded with the Clare County Register of Deeds waiving these requirements using only the WECS Waiver Form.
- (b) No WECS shall generate or permit to be generated from permitted facilities any acoustic, vibratory, or barometric oscillations in the frequency range of 0.1 to 1 Hz that is detectable at any time and for any duration by confirmed human sensation or exceeds a sound pressure level from 0.1 to 20 Hz of 50 dB(unweighted) re 20uPA or exceeds an RMS acceleration level of 50 dB(unweighted)re 1 micro-g by instrumentation at a Non-Participating Landowner’s property line or at any point within a Non-Participating Landowner’s property.
- (c) No WECS shall generate or permit to be generated from permitted facilities any vibration in the low-frequency range of 0.1 to 20 Hz, including the 1, 2, 4, 8, and 16 Hertz octave bands that is perceivable by human sensation or exceeds an rms acceleration level of 50 dB(unweighted) re 1 micro-g at any time and for any duration either due to impulsive or periodic excitation of structure or any other mechanism at a Non-Participating Landowner’s property line or at any point within a Non-Participating Landowner’s property.
- (d) A tonal noise condition generated from permitted facilities shall be assessed an upward noise penalty of 5 dBA (example 42 increased to 47 dBA) for assessment to the nighttime and daytime noise limits.
- (e) A noise level measurement made in accordance with methods in section “NOISE MEASUREMENT AND COMPLIANCE” that is higher than 40 dBA or 50 dBC during any time of the day, adjusted for the penalty assessed for a tonal noise condition, shall constitute prima facie evidence of a nuisance.
- (f) An acoustic, vibratory, or barometric measurement documenting oscillations associated with permitted facilities with levels exceeding the limits in this subsection shall constitute prima facie evidence of a nuisance.
- (g) All WECS activity shall comply with limits and restrictions anywhere at any time on another property unless Applicant/Owner provides documentation in the form of a signed approval by affected Participating and Non-Participating Landowners. Documents in full shall be recorded with the Clare County Register of Deeds waiving these requirements using only the WECS Waiver Form.
- (h) Leq 1-sec shall be used for all measurements and modeling.

## E. NOISE MEASUREMENT AND COMPLIANCE

1. Post construction validation and compliance testing shall include a variety of ground and hub height wind speeds, at low (between 6-9mph) medium (between 9-22mph) and high (greater than 22mph). SCADA data shall be provided in the format determined by Township, Township licensed engineers, or Township professional acousticians. Compliance noise measurements are the financial responsibility of the WECS owner of the facility and shall be independently performed by a qualified professional acoustician approved by the Sheridan Township Board or its designated agent. Compliance noise measurements shall not exceed the stipulated noise limits; the Township shall assess for and apply tonal noise penalties when warranted.
2. Quality: Measurements shall be attended by an observer. All noise measurements shall exclude contributions from wind on microphone, tree/leaf rustle, flowing water, and natural sounds such as tree frogs and insects. The latter two can be excluded by calculating the dBA noise level by excluding octave band measurements above the 1000 Hz band as in ANSI S12.100 3.11. The ANS-weighted sound level is obtained by eliminating values for octave bands above 1000 Hz, or one-third octave bands above 1250 Hz, and A-weighting and summing the remaining lower frequency bands. The wind velocity at the sound measurement microphone shall not exceed 3 m/s (7 mph, maximum) during measurements. A 7-inch or larger diameter windscreen shall be used. Instrumentation shall have an overall internal noise floor that is at least 5 dB lower than what is being measured. During testing of elevated sources including, but not limited to, wind turbines, the atmospheric profile shall be Pasquill Stability Class E or F preferred, Class D as alternate.
3. Noise Level: Noise measurements shall be conducted consistent with ANSI S12.18 Procedures for Outdoor Measurement of Sound Pressure Level and ANSI S12.9 Part3 (Quantities and Procedures for Description and Measurement of Environmental Sound – Part3: Short-term Measurements with an Observer Present), using Type 1 meter, A-weighting, Fast Response.
4. Tonal Noise: Tonal noise shall be assessed using unweighted (linear) 1/3 octave band noise measurements with time-series, level-versus-time data acquisition. A measurement shall constitute prima facie evidence of a tonal noise condition if at any time (single sample or time interval) the noise spectrum of the noise source under investigation shows a 1/3 octave band exceeding the average of the two adjacent bands by 15 dB in low one-third octave bands (10–125 Hz), 8 dB in middle-frequency bands (160–400 Hz), or 5 dB in high- frequency bands (500–10,000 Hz).
5. Sample Metric and Rate: Noise level measurements for essentially continuous non-time-varying noise sources shall be acquired using the Leq(Fast) metric at a sample rate of 1-per-second. For fluctuating or modulating noise sources including, but not limited to, wind turbines, a 10-per-second sample rate or faster shall be used. These sample rates shall apply to dBA, dBC and unweighted 1/3 octave band measurements.
6. Reporting: Measurements of time-varying dBA and dBC noise levels and 1/3 octave band levels shall be reported with time-series level-versus-time graphs and tables. Graphs shall show the sound levels graphed as level-vs-time over a period of time



sufficient to characterize the noise signature of the noise source being measured. For 1-per-second sampling, a 5-minute-or-longer graph shall be produced. For 10-per-second sampling, a 30-second-or-longer graph shall be produced. Reporting shall identify, and graphs shall be clearly notated, what was heard and when the noise source is dominating the measurement. Reporting shall furnish all noise data and information on weather conditions and the Pasquill Class occurring during testing.

#### F. ORDINANCE COMPLIANCE

1. Non-compliance with ordinance requirements during the permitting process shall result in denial or revocation of the permit.
2. Non-compliance with post-construction ordinance requirements shall result in permit revocation, and WECS decommissioning, and shall be subject to all applicable actions allowed by law. The Owner/Operator shall be responsible for attorney and expert investigation fees regarding any non-compliance.
3. Nuisance compliance complaints shall be resolved after subsection D.18 “Complaint Resolution“ is completed. Applicant shall provide resolution plan within 30 days and resolve complaint within 90 days. A WECS may be shut down during the resolution time to extend the resolution time to 180 days.
4. For non-nuisance compliance issues, and upon formal notice from Township to the WECS permit holder, the WECS permit holder shall respond within thirty (30) days with resolution plan and shall have up to one hundred eighty (180) days to resolve compliance breach. Failure to resolve any compliance breach shall result in permit revocation. Unless otherwise stated, Applicant shall provide in advance and comply with ordinance requirements prior to Township granting the WECS permit. Conditional permits shall not be allowed.
5. Upon change of ownership, operator, or parent company, the Township shall receive from the new owner, operator or parent company notification and updated documents within 90 days including, but not limited to, legal proof of change, corporate legal contact, security bond updates, emergency contacts, and local contact.
6. The owner/operator of a WECS shall submit a report to the Township annually that will include:
  - (a) The status of the WECS operation and maintenance and any planned changes to the operation
  - (b) The status of any complaint(s) and complaint corrective actions
  - (c) A confirmation of sufficient liability insurance (certificate of insurance)
  - (d) A confirmation of the current security guarantee.

#### **Section 4. Enforcement.**

The Sheridan Township Board shall enforce this ordinance and may hire or appoint individual(s)

or firm(s) to aid it to do so.

Any person, firm or corporation who violates, neglects, or refuses to comply with or who resists the enforcement of any of the provisions of this Ordinance, is responsible for a municipal civil infraction and shall be punished by a fine not to exceed One Hundred (\$100.00) dollars, attorneys fees and costs. Each day that a violation is permitted to exist shall constitute a separate offense. The imposition of any sentence shall not exempt the offender from compliance with the requirements of this Ordinance. Uses of land in violation of any provision of this Ordinance, are hereby declared to be a nuisance per se.

The Court may order such nuisance abated and the applicant, landowner and/or agent in charge of such land may be adjudged guilty of maintaining a nuisance per se, and same may be abated by order of any court of competent jurisdiction.

**Section 5. Validity and Severability.**

Should any portion of this Ordinance be found invalid for any reason, such finding shall not be construed as affecting the validity of the remaining portions of the Ordinance.

**Section 6. Repealer.**

All other ordinances inconsistent with the provisions of this Ordinance are hereby repealed but only to the extent necessary to give this Ordinance full force and effect.

**Section 7. Effective Date.**

This Ordinance shall be published and take effect 30 days following publication as prescribed by law.

The undersigned Supervisor and Clerk of the Township of Sheridan hereby certify that this Ordinance was duly adopted by the Township Board at a meeting held on the \_\_\_\_\_ day of \_\_\_\_\_, 2023, and was published in the Clare County Review on the \_\_\_\_\_ day of \_\_\_\_\_, 2023.

\_\_\_\_\_  
Township Supervisor

\_\_\_\_\_  
Township Clerk