

**ESSEX TOWNSHIP
CLINTON COUNTY, MICHIGAN
ORDINANCE NO. 14**

At a duly scheduled and noticed meeting of the Township Board of Essex Township, Clinton County, Michigan, held at the Maple Rapids Community Center on October 17, 2012, at 7:30 p.m., Township Board Member **Rex Ferguson** moved to adopt the following Ordinance, which motion was seconded by Township Board Member **Patti Warnke**:

AN ORDINANCE TO REGULATE WIND ENERGY CONVERSION SYSTEMS.

THE TOWNSHIP OF ESSEX ORDAINS:

Article 1. Title and Purpose. This Ordinance shall be known and cited as the Essex Township Wind Energy Conversion Systems Ordinance. The purpose of this ordinance is to protect the public health, safety and general welfare in the location, construction and operation of Wind Energy Conversion Systems as defined hereunder.

Article 2. Definitions. For purposes of this Ordinance, the following terms shall have the indicated meanings:

(a) **Wind Energy Conversion System (WECS):** Also commonly referred to as a wind generating tower, windmill, or wind-powered generator. It shall mean a combination of:

1. The surface area (typically a blade, rotor, or similar device), either variable or fixed, for utilizing the wind for electrical or electrical generating powers; and
2. 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; and
3. The generator, alternator, or other device to convert the mechanical energy of the surface area into electrical energy; and
4. The tower, pylon, or other structure upon which any, all, or some combination of the above are mounted.

A WECS can also include other components not listed above but associated with the normal construction, operation, and maintenance of a wind energy conversion system.

(b) **Interconnected WECS:** A WECS that is electrically connected to the local electrical power utility system and could feed power back into the local electrical power utility system.

(c) **WECS Height:** The distance between the ground (at normal grade) and the highest point of the WECS, as measured from the ground (at normal grade), plus the

length by which the rotor blade on a horizontal mounted WECS exceeds the structure which supports the rotor and blades (normally, the tower). Or put another way, the distance between the ground (at normal grade) and the highest point of the WECS (being the tip of the blade, when the blade is in the full vertical position).

(d) **Wind Farm:** Clusters of 2 or more WECS placed upon a lot or parcel with the intent to sell or provide electricity to a site or location other than the premises upon which the WECS are located. Said WECS may or may not be owned by the owner of the property upon which the WECS is placed.

(e) **Single WECS for Commercial Purposes:** A single WECS placed upon a lot or parcel with the intent to sell or provide electricity to a site or location other than the premises upon which the structure is located. Said WECS may or may not be owned by the owner of the property upon which the WECS is placed.

(f) **Single WECS for On-site Service Only:** Single WECS applications of wind energy conversion system, including WECS Testing Facilities, to service the energy needs of only the property where the structure is located.

(g) **WECS Testing Facility or Testing Facility:** A structure and equipment used to determine the potential for the placement of a WECS.

Article 3. License Application and Approval Procedure and Standards: No person shall locate, install, construct or operate a WECS or Testing Facility within Essex Township without first duly obtaining a license from the Township Board under this Ordinance.

(a) Applicability:

(1) WECS, Wind Farms, Single WECS for Commercial Purposes, and WECS Testing Facilities: Wind energy conversion systems such as a WECS, wind farm, single WECS for commercial purposes, and WECS Testing Facilities associated with the commercial application of a WECS may be approved by license, subject to the regulations and requirements of this Ordinance.

(2) Single WECS for On-site Service Only: Single WECS applications of wind energy conversion system, including WECS Testing Facilities, to service the energy needs of only the property where the structure is located may be approved by license, provided the property upon which the system is to be located is at least three and one-half (3-1/2) acres in size and the WECS complies with all of the following:

a. The tower shall not exceed a height of 80 feet.

b. The blade diameter (tip to tip) shall not exceed 100 feet.

- c. The height of the overall WECS (with the blade in the vertical position) shall not exceed 130 feet above ground level (at normal grade).
 - d. The distance of the structure from all property lines shall be at least two (2) times the WECS height.
 - e. If the tower is for residential or agricultural use only on site, the tower can be of either monopole or lattice design.
- (b) Site Plan Drawing: All applications for a WECS or WECS Testing Facility license shall be accompanied by a detailed site plan drawn to scale and dimensioned, displaying all of the following information:
- (1) All lot lines and dimensions, including a legal description.
 - (2) Location 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.
 - (3) Locations and height of all adjacent buildings, structures, and above ground utilities located within 300 feet of the exterior boundaries of the lot or parcel where the proposed WECS and/or Testing Facility will be located. Specific distances to other on-site buildings, structures, and utilities shall also be provided. 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 parcel involved, as well as within 1,000 feet of the boundaries of such parcel or lot.
 - (4) Existing and proposed setbacks for the WECS from all structures located on the property where the WECS will be located.
 - (5) Elevation of the premises accurately depicting the proposed WECS location and its relationship to the elevation of all existing and proposed structures within one-half (1/2) mile of the proposed WECS.
 - (6) Access driveway to the WECS and the Testing Facility together with a detailed narrative regarding dimensions, composition, and maintenance of the proposed driveway. The Township Board shall require the construction of a private road to serve a WECS or Testing Facility if it is determined that said road is necessary to protect the public health, safety, or welfare or to offer an adequate means by which the Township or other governmental agency may readily access the site in the event of an emergency.
 - (7) Planned security measures to prevent unauthorized trespass and access and to warn of potential dangers.

- (8) WECS and Testing Facility Maintenance Programs: The applicant shall provide the Township a written description of the maintenance program to be used to maintain the WECS and Testing Facility, including removal when determined to be obsolete or abandoned. The description shall include maintenance schedules, the types of maintenance to be performed, and removal procedures and schedules should the WECS or Testing Facility become obsolete or abandoned.
 - (9) Planned safety measures to prevent uncontrolled rotation or over speeding.
 - (10) Planned lighting protection measures.
 - (11) Additional detail(s) and information as requested by the Township Board.
- (c) Compliance with Building Code: A copy of the manufacturer's installation instructions and blueprints shall be provided to the Township. Included as part of or as an attachment to the installation instructions shall be standard drawings of the structural components of the WECS and support structures, including base and footings provided along with engineering data and calculations to demonstrate compliance with the structural design provisions of the Building Code as adopted by the County of Clinton. Drawings and engineering calculations shall be certified by a registered engineer licensed in the State of Michigan.
- (d) Construction Codes, Towers, & Interconnection Standards: The WECS shall comply with all applicable state construction codes, as well as Federal Aviation Administration (FAA) requirements, the Michigan Airport Zoning Act, the Michigan Tall Structures Act, and local jurisdiction airport overlay zone regulations. The tower shaft shall not be illuminated unless required by the FAA. The WECS shall comply with applicable utility, Michigan Public Service Commission, and Federal Energy Regulatory Commission interconnection standards.
- (e) Design Standards.
- (1) Height: The permitted maximum total height of a WECS (*i.e.*, WECS height) shall be 380 feet including the blade in vertical position.
 - a. State and federal regulations may require a lesser height.
 - b. As a condition of approval, the Township Board may require a lesser height for a WECS if reasonably necessary to comply with the standards contained in subsection (h) hereof.
 - c. A WECS shall be constructed with a tubular tower, not a lattice tower.

- (2) Height of Test Tower Facility: Unless a different height is approved by the Township Board, the WECS Testing Facility height shall be no greater than 380 feet from the ground (*i.e.*, from normal grade to the test tower top) and shall comply with design standards. A WECS Testing Facility which is not in use for 6 months or more shall comply with the provisions of this Ordinance regarding abandonment
- (3) Setbacks: No part of a WECS or WECS Testing Facility (including guy wire anchors) shall be located closer than (a) 1600 feet or four times the height of the structure, whichever is greater, from any residential dwelling, and (b) 1600 feet or four times the height of the structure, whichever is greater, from any parcel or lot line, and (c) one-half (1/2) mile from the village limits of the Village of Maple Rapids.
- (4) Rotor or Blade Clearance: Blade arcs created by a WECS shall have a minimum of seventy-five (75) feet of clearance over and from any structure, adjoining property or tree. The minimum blade or rotor clearance above ground level shall be at least twenty (20) feet.
- (5) Rotor or Blade Safety: Each WECS shall be equipped with both a manual and automatic braking device capable of stopping the WECS operation in high winds (forty (40) mph or greater) or in conditions of imbalance.
- (6) Tower Access: To prevent unauthorized climbing, WECS and Testing Facilities must comply with all of the following provisions:
 - a. Tower climbing apparatus shall not be located on the outside of the tower, but must be located inside the tower; and
 - b. A locked anti-climb device shall be installed and maintained; and
 - c. A tower capable of being climbed shall be enclosed by a locked, protective fence at least ten (10) feet high with barbed wire fence.
- (7) Signs: Each WECS and Testing Facility shall have one sign, not to exceed two (2) square feet in area, posted at the base of the tower. The sign shall contain at least the following:
 - a. Warning high voltage.
 - b. Warning falling ice.
 - c. Manufacturer's name.
 - d. Emergency telephone numbers (list more than one number).
 - e. Emergency shutdown procedures.

- f. FAA regulated sign with precise description with latitude and longitude and shall also contain both the applicant's current telephone number and the current telephone number for the FAA's regional office having jurisdiction over Essex Township.
 - g. If fenced, place signs on the fence.
- (8) Lighting: A lighting plan for each WECS and Testing Facilities shall be approved by the Township Board. Such plan must describe all lighting that will be utilized, including any lighting that may be required by the FAA. Such a plan shall include but is not limited to the planned number and location of lights, light color and whether any lights will be flashing. Minimum FAA lighting standards shall not be exceeded. All tower lighting required by the FAA shall be shielded to the extent possible to reduce glare and visibility from the ground. Strobe lights are discouraged and must be shielded from the ground if such lights are allowed by the Township Board.
- (9) Electromagnetic Interference: Each WECS and Testing Facility shall be designed, constructed and operated so as not to cause radio and television interference. In the event that electromagnetic interference is experienced, the applicant must provide alternate service to each individual resident or property owner affected.
- (10) Stray Voltage: Each WECS and Testing Facility shall be designed, constructed and operated so as not to cause any stray voltage.
- (11) Noise Immissions: Noise immissions from the operation of a WECS or Testing Facilities shall not exceed (i) forty-five (45) decibels on the dB(A) scale during the hours between 7 am and 7 pm, and (ii) forty (40) decibels on the dB(A) scale during the hours between 7 pm and 7 am. In addition, noise immissions shall not exceed fifty (50) decibels on the dB(C) scale during the hours between 7 pm and 7 am. Such noise Immissions shall be as measured at the nearest property or lot line. All measurements shall be conducted in compliance with ANSI Standards for outdoor sound measurements and be under the supervision of a Full Member of the Institute of Noise Control Engineers (INCE). Applicable ANSI Standards include: S12.9, "Quantities and Procedures for Description and Measurement of Environmental Sound" Parts 1, 2, and 3; and S12.18 "Procedures for Outdoor Measurement of Sound Pressure Levels."
- (12) Noise Impact Report: The applicant shall provide a report of the impact of the proposed WECS or Testing Facility with the application. It shall describe in detail all noise studies and must demonstrate compliance with all ANSI/ISO standards for outdoor measurements and predictions. Where such standards include confidence limits or limitations of use the report

shall present them and provide an explanation of how they were addressed. Applicable Standards include: S12.9 "Quantities and Procedures for Description and Measurement of Environmental Sound," Part 4 "Noise Assessment and Prediction of Long-term Community Response," and ISO 9613-2 "Acoustics-Attenuation of sound during propagation outdoors, Part 2, "General Method of Calculation." It shall be produced and certified by a qualified acoustical consultant with Full Member status with the Institute of Noise Control Engineering (INCE) and include::

- a. A description and map of the project's sound producing features, including the range of decibel levels expected (to be measured in dB(A) and dB(C)), and the basis for the expectation.
 - b. A description and map of the existing land uses and structures including any residences, hospitals, libraries, schools, places of worship, and parks within one (1) mile of the proposed WECS or Testing Facility. Said description shall include the location of the structure/land use, distances from the source of the sound or WECS or Testing Facility and background (as defined in S12.18 for "residual" noise) decibel readings (including appropriate documentation per ANSI standards for reporting, including the date and time, when measurements are taken) for each identified land use and structure described and mapped.
 - c. A description of the project's proposed sound control features shall be described in detail, including specific measures to minimize noise impacts to structures and land uses identified in the preceding item. Information about potential post construction mitigation options, such as operation in Noise Reduction Operating (NRO) modes shall be described. If there are no post construction mitigation methods available a statement to that effect shall be included along with reasons supporting that statement.
 - d. The report shall address the potential for any and all adverse impacts from wind turbine sound emissions on the community and its residents located within 1 mile from the boundary of the WECS or Testing Facility.
- (13) Utility Company Interconnection (Interconnected WECS): All distribution lines from the WECS to the electrical grid connection shall be located and maintained underground (both on the property where the WECS will be located and off-site). The Township Board may waive the requirement that distribution lines for the WECS which are located off-site (*i.e.*, are not located on or above the property where the WECS will be located) be located and maintained underground if the Township Board determines

that to install, place, or maintain such distribution lines underground would be impractical or unreasonably expensive.

- (f) Approval Standards: In addition to the other requirements and standards contained in this section, the Township Board shall not approve any WECS or Testing Facilities 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 area wildlife.
- (g) Ornamental Wind Devices: Ornamental wind devices that are not a WECS shall be exempt from the provisions of this Ordinance, so long as they do not exceed the height limitations for permitted accessory structures (*i.e.*, those permitted as of right) under the Clinton County Zoning Ordinance within the zoning district where the ornamental wind device will be located. Such devices may also be regulated by other provisions of this Ordinance.
- (h) Inspection: The Township shall have the right upon issuing any WECS and Testing Facility license to inspect the premises on which the WECS or Testing Facility is located at all reasonable times. The Township may hire a consultant to assist with any such inspections at the applicant's cost.
- (i) 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. The applicant shall keep a maintenance log on each WECS, which shall be available for the Township's review on a monthly basis.
- (j) As a condition of any license for a WECS or Testing Facility, the Township Board shall establish an annual license fee to be paid by the owner or operator in an amount determined by the Township Board necessary to cover annual costs of enforcement, inspection and administration of this Ordinance and the license issued hereunder by the Township.
- (k) Abandonment: Any WECS or Testing Facilities that are not used for six (6) successive months or longer shall be deemed to be abandoned and shall be promptly dismantled and removed from the property. All above and below ground materials must be removed. The ground must be restored to its original condition within 60 days of abandonment.
- (l) Security: If a license is approved pursuant to this Ordinance, the Township Board shall require security in the form of a cash deposit or irrevocable letter of credit (in a form, amount, time duration and with a financial institution deemed acceptable to the Township), which will be furnished by the applicant to the Township in order to ensure full compliance with this Ordinance and any conditions of approval. When determining the amount of such required security, the Township may also require an annual escalator or increase based on the Federal Consumer Price

Index (or the equivalent or its successor). Such financial guarantee shall be deposited or filed with the Township Clerk after a license has been approved but before construction commences upon a WECS or WECS Testing Facility. At a minimum, the financial security shall be in an amount determined by the Township Board to be sufficient to have the WECS or Testing Facility fully removed (and all components properly disposed of and the land returned to its original state) should such structure or structures become abandoned, dangerous or obsolete, or not in compliance with this Ordinance or the license approval. Such financial security shall be kept in full force and effect during the entire time while a WECS or WECS Testing Facility exists or is in place. Such financial security shall be irrevocable and non-cancelable (except by the written consent of both the Township and the then-owner of the WECS or WECS Testing Facility) for at least 30 years from the date of the license approval. Failure to keep such financial security in full force and effect at all times while a WECS or WECS Testing Facility exists or is in place shall constitute a material and significant violation of a license approval and this Ordinance, and will subject the applicant to all available remedies to the Township, including possible enforcement action and revocation of the license.

- (m) Road repair: Any damages 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's expense.
- (n) Liability: The applicant shall insure each WECS at all times for at least \$2,000,000 (to be adjusted annually to an amount equivalent to 2012 dollars based on the federal CPI) for liability to cover the applicant, Township and land owner.
- (o) Color: A WECS shall be painted a non-obtrusive (light environmental color such as beige or gray) color that is non-reflective. The wind turbine base and blades shall be of a color consistent with all other turbines in the area. No lettering, company insignia, advertising, or graphics shall be on any part of the tower, hub, or blades.
- (p) Strobe effect (also known as shadow flicker): No WECS or Testing Facility shall cause any strobe effect or shadow flicker without written approval by the Township Board.
- (q) Under no circumstances shall a WECS or Testing Facility produce vibrations or wind currents humanly perceptible beyond the property boundaries of the lot or parcel on which the WECS or Testing Facility is located.
- (r) The applicant shall be responsible for compensation to persons damaged due to any stray voltage caused by a WECS.
- (s) At the Township's request, the applicant shall fund an environmental assessment or impact study and/or other relevant report(s) or studies (including, but not limited to, assessing the potential impact on endangered species, eagles, birds, and/or

other wildlife) as required by the Township for review by the Township regarding the area or surrounding areas where the WECS will be placed. Each such study or report shall be provided to the Township prior to the time when the Township Board makes its final decision regarding the license.

- (t) At the Township's request, the applicant shall fund a financial impact study for review by the Township of the area affected by the WECS. Such study or report shall be provided to the Township prior to the time when the Township Board makes its final decision regarding the license.
- (u) An escrow account shall be set up when the applicant applies for a license for a WECS or WECS Testing Facility. The monetary amount filed by the applicant with the Township shall be in an amount estimated by the Township to cover all costs and expenses associated with the license 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 license review process for the particular application. Such escrow amount shall be in addition to regularly established fees. At any point during the license review process, the Township may require that the applicant place additional monies into escrow with the Township should the existing escrow amount filed by the applicant prove insufficient. If the escrow account needs replenishing and the applicant refuses to do so promptly, the license review and approval process shall cease until and unless the applicant makes the required escrow deposit. Any applicable zoning escrow resolutions or other ordinances adopted by the Township or by Clinton County shall also be applicable.
- (v) Reasonable conditions: In addition to the requirements of this section, the Township Board may impose additional reasonable conditions on the approval of a license for a WECS or WECS Testing Facility.
- (w) Each WECS and WECS Testing Facility shall also comply with all applicable federal, state of Michigan, and county requirements, in addition to Township ordinances.
- (x) Where there are practical difficulties or unnecessary hardships deterring the carrying out of the strict interpretation of this Ordinance, the Township Board shall have the power, upon a clear and convincing showing by the applicant, to vary or modify any of the rules, regulations or provisions of the Ordinance, by granting variances, provided that any variation granted from this Ordinance:
 - (1) Will not be contrary to the public interest.
 - (2) Will not cause a substantially adverse effect upon property values.
 - (3) Will relate only to the property under the control of the applicant.

- (4) Will not jeopardize the preservation of a substantial right, so that the spirit of this Ordinance shall be observed, public safety secured and substantial justice done.
- (5) Will not impair the adequate supply of air and light to any adjacent property.
- (6) Will not increase the hazards from fire, flood or other natural or man-made dangers.
- (7) Will not produce nuisance conditions to occupants of nearby premises, whether by reason of dust, noise, fumes, odors, vibration, smoke or excessive light.
- (8) Will not otherwise impair the public health, safety and general welfare of the residents of Essex Township.

Article 4. Severability. Should a court of competent jurisdiction find any provision, clause, or portion of this Ordinance to be invalid, the balance or remainder of this Ordinance shall remain valid and in full force and effect and shall be deemed severable from the portion, clause, or provision deemed to be invalid by the court.

Article 5. Effective Date. This Ordinance shall become effective immediately after this Ordinance or a summary thereof is published in the newspaper as provided by law; except that any penalty provisions relating to the enforcement of this Ordinance shall be effective thirty (30) days after publication of this Ordinance as required by law.

Article 6. Effect on Other Ordinances. Except as expressly amended by this Ordinance, other Essex Township ordinances shall remain unchanged and in full force and effect.

Roll call vote taken:

YEAS: Lynn Ferguson, Aurellio 'Hank' Zamarron, Rex Ferguson, Patti Wamke

NAYS: None

ABSTAIN/ABSENT: Angela Bunn

ORDINANCE DECLARED ADOPTED.

Lynn Ferguson, Essex Township Supervisor

CERTIFICATION

I hereby certify that:

1. The above is a true copy of Ordinance No. 14, adopted by the Essex Township Board at a duly scheduled and noticed meeting of that Township Board held on October 17, 2012, pursuant to the required statutory procedures.

2. A summary of Ordinance No. 14 was duly published in the Clinton County News newspaper, a newspaper that circulates within Essex Township, on October 26, 2012.

3. Within 1 week after such publication, I recorded Ordinance No. 14 in a book of ordinances kept by me for that purpose, including the date of passage of the ordinance, the names of the members of the township board voting, and how each member voted.

4. I filed an attested copy of Ordinance No. 14 with the Clinton County Clerk on October 31, 2012.

ATTESTED:

Angela Bunn, Essex Township Clerk

Dated: October 31, 2012