

## ORDINANCE NO. 2018-01

An ordinance amending *Beaver Township Ordinance No. 15*, as amended, the Township Zoning Ordinance, in the following particulars: by changing *Chapter II* by adding *Section 2.60* to provide a definition for "Wind Energy Conversion System (WECS); by changing *Section 3.07* to exempt on-site wind energy conversion systems from height regulations in all zoning districts as long as they do not exceed 75 feet in height, and to exempt approved utility-scale wind energy conversion systems from such height regulations; by changing *Chapter III* by adding *Section 3.32* to regulate wind energy conversion systems; by adding *subsection (i)* to *Section 5.02* to authorize by special use permit in the AG Agriculture District on-site wind energy conversion systems described in *part (x)* of *subsection (b)* of *Section 3.32* and utility-scale wind energy conversion systems; by adding *subsection (j)* to *Section 6.02* to authorize by special use permit in the RR Rural Residential District on-site wind energy conversion systems described in *part (x)* of *subsection (b)* of *Section 6.02*.

### BEAVER TOWNSHIP, BAY COUNTY, MICHIGAN, ORDAINS:

**SECTION 1.** *Chapter II* of *Beaver Township Ordinance No. 15* is hereby amended by adding *Section 2.60* to provide a definition for "Wind Energy Conversion System (WECS)" to read as follows:

**Section 2.60 Wind Energy Conversion System (WECS):** Also commonly referred to as a wind energy facility, wind generating tower, wind turbine, windmill, or wind-powered generator. It shall mean a combination of:

- (a) 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
- (b) 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
- (c) The generator, alternator, or other device to convert the mechanical energy of the surface area into electrical energy; and
- (d) The tower, pylon, or other structure upon which any, all or some combination of the above are mounted.

A wind energy conversion system can also include other components not listed above but associated with the normal construction, operation, and maintenance of a wind energy conversion system such as substations, anemometer towers (MET), cables and wires and other buildings accessory to such facility.

**SECTION 2.** *Section 3.07* of *Beaver Township Ordinance No. 15* is hereby amended to read as follows:

**SECTION 3.07. HEIGHT EXCEPTIONS.** The following buildings and structures shall be exempt from height regulations in all Zoning Districts; parapet walls not exceeding three (3) feet in height, chimneys, cooling towers, elevator bulkheads, belfries, flag poles, fire towers, grain elevators, silos, stacks, elevated water towers, scenery lofts, monuments, cupolas, domes, church spires, penthouses housing necessary mechanical appurtenances, electrical transmission towers, and television and radio reception and transmission antennas and towers, and on-site wind energy conversion systems, so long as they do not exceed seventy-five (75) feet in height. Utility-Scale Wind Energy Conversion Systems approved by the Township may be allowed to exceed the height limit of the zoning district, provided that they do not exceed five hundred (500') feet in height, adhere to all the standards and requirements in this Ordinance and do not create a hazard to the public health, safety, or welfare.

**SECTION 3.** *Chapter III of Beaver Township Ordinance No. 15* is hereby amended by adding *Section 3.32* to provide regulations for wind energy conversion systems to read as follows:

**SECTION 3.32. WIND ENERGY CONVERSION SYSTEMS (WECS).** A wind energy conversion system (WECS) as defined by *Section 2.60* of this Ordinance is allowed as a special use when approved by the Planning Commission in accordance with the process defined herein. In addition to the standards and requirements for issuance of a special use permit specified in *Article XI* of this Ordinance, the Planning Commission shall not approve the issuance of a Special Land Use Permit unless the following requirements shall be met:

- (a) **Purpose and Intent.** The purpose of this Section is to establish standards and procedures by which the installation and operation of a Wind Energy Conversion System (WECS) for both residential and commercial use and shall be governed within the Township to protect the health, welfare, safety, and quality of life of the general public, and to ensure compatible land uses in the vicinity of the areas affected by wind energy facilities.

Beaver Township recognizes the potential impact on the broad landscape and rural character currently enjoyed throughout the community. On a site-specific scale, safety implications such as falling towers and ice throw are a concern, as are the potential impositions of constant or cyclical sound and shadow flicker. For these reasons, and others, including those listed above, the Township finds it prudent and necessary to develop regulations for the responsible placement of wind energy conversion systems.

(b) **Supplementary Definitions.**

- (i) **Ambient:** The decibel measurement (dB(A) or dB(C)) of background sound pressure level exceeded 90% of the time at a given location prior to the installation of the WECS (also known as  $L_{90}$ ).
- (ii) **Anemometer Tower (MET):** A freestanding tower containing instrumentation such as anemometers that is designed to provide present moment wind data for use by the supervisory control and data acquisition (SCADA) system which is an accessory land use to a Utility Grid Wind Energy Conversion System.
- (iii) **dB(A):** The sound pressure level in decibels. It refers to the “a” weighted scale defined by ANSI S1.32 (1997 or most recent) for sound frequencies below the 1,000 HZ octave band.
- (iv) **dB(C):** The sound pressure level in decibels. It refers to the “c” weighted scale defined by ANSI S1.32 (1997 or more recent) for acoustic energy from the 20HZ octave band and higher.
- (v) **Decibel:** The unit of measure used to express the magnitude of sound pressure and sound intensity.
- (vi) **FAA:** The Federal Aviation Administration
- (vii) **IEC:** The International Electrotechnical Commission
- (viii) **ISO:** The International Organization for Standardization
- (ix) **LMax (LAMax or LCMMax):** 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).

- (x) **Lease Unit Boundary:** The boundary around a property(ies) leased or purchased for purposes of operating a wind energy facility, including leased or purchased adjacent parcels to the parcel on which the wind energy facility tower or equipment is located. For purposes of setback, the Lease Unit Boundary shall not cross road rights-of-way.
- (xi) **On-Site Wind Energy Conversion System:** A wind energy conversion system more than 40 feet in height intended to generate electric power from wind solely for the use of the site on which the system is located. WECS primarily intended to provide on-site power, but contribute surplus energy to the grid, may also be considered On-Site WECS.
- (xii) **Participating and Non-Participating Parcels:**
  - (i) Participating Parcel shall mean a parcel of record that is to be used, occupied, maintained, let, leased or authorized to be used for any purposes of developing or operating a WECS, including construction of improvements, providing access to improvements, providing space for collection or distribution lines, or to meet requirements and regulations set forth herein.
  - (ii) Non-Participating Parcel shall mean a parcel of record that is not a Participant Parcel.
- (xiii) **Shadow Flicker:** Alternating changes in light intensity caused by the moving blade of a Wind Energy Conversion System casting shadows on the ground and stationary objects, such as but not limited to a window of a dwelling.
- (xiv) **Sound Pressure:** An average rate at which sound energy is transmitted through a unit area in a specified direction. The pressure of the sound measured at a receiver.
- (xv) **Sound Pressure Level:** The sound pressure mapped to a logarithmic scale and reported in decibels (dB).
- (xvi) **Utility-Scale Wind Energy Conversion System:** A wind energy conversion system intended to generate power from wind primarily to supplement the greater electric utility grid. Utility-Scale WECS include accessory uses such as, but not limited to, SCADA towers, anemometers, or electric substations.
- (xvii) **Wind Energy Conversion System (WECS):** Shall mean a combination of:
  - (i) A surface area (typically a blade, rotor, or similar device), either variable or fixed, for utilizing the wind for electrical powers; and
  - (ii) 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
  - (iii) The generator, alternator, or other device to convert the mechanical energy of the surface area into electrical energy; and
  - (iv) The tower, pylon, or other structure upon which any, all or some combination of the above are mounted.
  - (v) Other components not listed above but associated with the normal construction, operation, and maintenance of a WECS such as substations, anemometer towers (MET), cables and wires and other buildings accessory to such facility.

See also Section 2.6 of this Ordinance.

- (xviii) **Wind Energy Facility:** Clusters of two or more Utility Grid Wind Energy Conversion Systems, 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 Wind Energy Conversion Systems are located. Said Wind Energy Conversion Systems may or may not be owned by the owner of the property upon which they are placed.

**(c) On-Site Wind Energy Conversion System Standards.**

The following standards shall apply to On-Site WECS, including Anemometer Towers, in addition to the general Special Approval Requirements of Chapter XI of this Ordinance:

1. **Purpose.** Designed to primarily serve the needs of a home, farm, or small business.
2. **Height.** Shall have a total height of 75 feet or less; except where state and federal regulations may require a lesser height; or where, as a condition of special use approval, the Planning Commission requires a lesser height. Height is measured from the average grade at the base of the pole to the highest point of WECS when a blade is in its vertical orientation.
3. **Setbacks.** The distance between an On-Site WECS and the property lines shall be equal to 400% of the height of the tower including the top of the blade in its vertical position. The distance between an Anemometer Tower and the owner's property lines shall be equal to 150% of the height of the tower. No part of the WECS structure, including guy wire anchors, may extend closer than 20 feet to the owner's property lines, or the distance of the required setback in the respective zoning district, whichever results in the greater setback.
4. **Minimum Lot Area Size.** The minimum lot size for a property to be eligible to have an On-Site WECS shall be two acres.
5. **Minimum Ground Clearance.** The minimum vertical blade tip clearance from grade and any structure, adjoining property, or tree shall be 20 feet for an on-site WECS employing a horizontal axis rotor.
6. **Noise Emission.** On-site WECS shall not exceed 45 dB(A) ( $L_{max}$ ) or 55 dB(C) ( $L_{max}$ ) at the property line closest to the WECS.
7. **Construction Codes, Towers, & Interconnection Standards.** On-site WECS including towers shall comply with all applicable state construction and electrical codes and local building permit requirements. On-site WECS including towers shall comply with Federal Aviation Administration requirements, the Michigan Airport Zoning Act, the Michigan Tall Structures Act, the Tri-City Area Joint Airport Authority Ordinance, and other applicable local and state regulations. An interconnected On-site WECS shall comply with Michigan Public Service Commission (MPSC) and Federal Energy Regulatory Commission (FERC) standards. Off-grid systems are exempt from MPSC and FERC requirements.
8. **Safety.** The WECS shall meet the following safety requirements:
  - (i) The WECS shall be designed to prevent unauthorized access to electrical and mechanical components and shall have access doors that are kept securely locked at all times when service personnel are not present.
  - (ii) All spent lubricants and cooling fluids shall be properly and safely removed in a timely manner from the site of the WECS.
  - (iii) A sign shall be posted near the tower or operations and maintenance office building that shall contain emergency contact information. Signage placed at the road access shall be used to warn visitors about the potential danger of falling ice.
  - (iv) All collection system wiring shall comply with all applicable safety and stray voltage standards.

- (v) WECS towers shall not be climbable on the exterior.
- (vi) Each WECS shall be equipped with both a manual and automatic braking device capable of stopping the WECS operation in high winds within 80% of design limits of the breaking system.
- (vii) A copy of the un-redacted Safety Manual from the turbine manufacturer shall be submitted to the Township and the turbine must comply with all requirements therein.

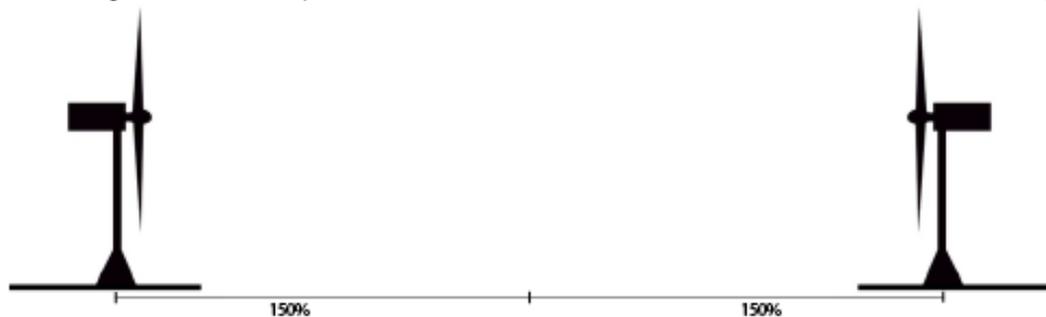
9. **Shadow Flicker.** On-site WECS shall produce no off-site shadow flicker. Measures to eliminate all effects of shadow flicker on adjacent properties, such as programming the WECS to stop rotating during times when shadow crosses occupied structures, may be required.

- (i) This shadow flicker limit may be waived if the owner of the affected property owner submits for records a signed and notarized letter of acknowledgement that verifies the owner's understanding that shadow flicker at the residence or structure may result from installation and waives the Township requirement for no shadow flicker on the property. If the affected property owner wants this waiver to apply to future owners of the affected property, the signed and notarized letter of acknowledgement must be recorded with the Bay County Register of Deeds.

**(d) Utility-Scale Wind Grid Energy Conversion System Standards.**

The following standards shall apply to Utility-Scale WECS, including Anemometer Towers, in addition to the general Special Use Requirements of *Chapter XI* of this Ordinance:

1. **Height.** The maximum height of any Utility-Scale WECS is 500 feet. The height of a WECS is measured from the average grade at the base of the pole to the highest point of the WECS when a blade is in its vertical orientation.
2. **Setbacks.** A distance equal to 400% of the height of the tower to the tip of the blade in its vertical position shall be maintained from the outside edge of the base of the turbine to all Non-Participating parcel property lines for WECS, public roads, and communication or electrical lines. In no event shall a turbine be located less than One Thousand Seven Hundred Sixty (1,760) feet from the nearest Non-Participating Parcel lease unit boundary line. Operations and maintenance office building, a substation, or ancillary equipment shall be setback a minimum of 50 feet from all single parcel property lines, or from lease unit boundary lines, and overhead transmission lines power poles. Such maintenance buildings and equipment shall be bordered by green space and screened by trees and shrubs to help blend into the rural setting and the Planning Commission will review the location and makeup of same as part of the Site Plan Review.
3. **Tower Separation.** Turbine/tower separation shall be based on the following standards:
  - (i) Between any two (2) utility-scale WECS: No less than 150% the height of both towers including the top of the bladed in their vertical position.



Separation between two utility-scale WECS

- (ii) Between any two (2) utility-scale WECS: No less than 150% of the height of both towers including the tops of the blades in their vertical positions.
- 4. **Minimum Lot Size.** The size of a single property, or a leased unit to be used for a utility-scale WECS shall be sufficient to comply with all setback requirements in this section.
- 5. **Minimum Ground Clearance.** The minimum vertical blade tip clearance from grade and any structure, adjoining property, or tree shall be 75 feet for a utility-scale WECS employing a horizontal axis rotor.
- 6. **Transmission Lines.** New transmission lines required to connect a WECS with a new or existing network for the distribution of electricity shall be installed underground to a depth of at least six (6) feet. This requirement applies to all new transmission lines associated with the WECS, regardless of whether they are within the property boundary or lease unit boundary or outside of said boundary.
- 7. **Sound Pressure Level.** Utility-Scale WECS shall not exceed 45 dB(A) ( $L_{max}$ ) / 55 dB(C) ( $L_{max}$ ) at the property line or lease unit boundary closest to the WECS, measured in accordance with the protocol set forth in Section 13(ii).
- 8. **Construction Codes, Towers, & Interconnection Standards.** Utility-Scale WECS including towers shall comply with all applicable state construction and electrical codes and local building permit requirements. Utility-Scale WECS including towers shall comply with Federal Aviation Administration requirements, the Michigan Airport Zoning Act, the Michigan Tall Structures Act, the Tri-City Area Joint Airport Authority Ordinance, and other applicable local and state regulations. An interconnected Utility-Scale WECS shall comply with Michigan Public Service Commission and Federal Energy Regulatory Commission standards. Off-grid systems are exempt from this requirement.
- 9. **Safety.** The WECS shall meet the following safety requirements:
  - (i) The WECS shall be designed to prevent unauthorized access to electrical and mechanical components and shall have access doors that are kept securely locked at all times when service personnel are not present.
  - (ii) All spent lubricants and cooling fluids shall be properly and safely removed in a timely manner from the site of the WECS.
  - (iii) A sign shall be posted near the tower or operations and maintenance office building that shall contain emergency contact information. Signage placed at the road access shall be used to warn visitors about the potential danger of falling ice.
  - (iv) All collection system wiring shall comply with all applicable safety and stray voltage standards.
  - (v) WECS towers shall not be climbable on the exterior.
  - (vi) Each WECS shall be equipped with both a manual and automatic braking device capable of stopping the WECS operation in high winds within 80% of design limits of the breaking system.
  - (vii) A copy of the un-redacted Safety Manual from the turbine manufacturer shall be submitted to the Township and the turbine must comply with all requirements therein.
- 10. **Visual Impact**
  - (i) WECS shall be mounted on tubular towers, painted a non-reflective, non-obtrusive neutral color.
  - (ii) The appearance of turbines, towers, and buildings shall be maintained throughout the life of the wind energy facility pursuant to industry standards (i.e. condition of exterior paint, signs, landscaping).
  - (iii) A certified registered engineer and authorized factory representative shall certify that the construction and installation of the WECS meets or exceeds the manufacturer's construction and installation standards.

- (iv) The design of the wind energy facility's buildings and related structures shall, to the extent reasonably possible, use materials, colors, textures, screening, and landscaping that shall blend facility components with the natural setting and the environment existing at the time of installation.
11. **Shadow Flicker.** No amount of Shadow Flicker may fall on or in a Non-Participating Parcel. Site plan and other documents and drawings shall show mitigation measures to eliminate potential impacts from shadow flicker, as identified in the Shadow Flicker Impact Analysis. Measures to eliminate all effects of shadow flicker on all Non-Participating parcels beginning at the property lines, such as programming the WECS to stop rotating during times when shadow crosses occupied structures, shall be required.
- (i) If the Shadow Flicker Impact Analysis shows potential for shadow flicker to fall on any Non-Participating Parcel and the affected property owners wishes to waive his/her rights to the protections provided by this Ordinance, the property owner shall submit for records a signed and notarized letter of acknowledgement that verifies the owner's understanding that shadow flicker on his/her parcel may result from installation and waives the Township requirement for no shadow flicker on the Non-Participating Parcel. If the affected property owner wants this waiver to apply to future owners of the affected property, the signed and notarized letter of acknowledgment must be recorded with the Bay County Register of Deeds.
12. **Lighting.** A lighting plan that includes all proposed lighting for each WECS shall be approved by the Planning Commission. The plan shall include, but is not limited to, the planned number and location of lights, light color, whether any lights shall be flashing, and all proposed shielding mechanisms. All tower-mounted lighting shall be of the radar-activated variety and shielded from view at ground level, unless otherwise directed by the FAA. All tower lighting shall comply with FAA regulations and guidance and shall be consistent with U.S. Fisheries and Wildlife Service/Michigan Department of Natural Resources guidelines.
13. **Interference.** No Utility-Scale WECS shall be installed in any location where its proximity to existing fixed broadcast, retransmission, or reception antennae for radio, television, or wireless phone or other personal communication systems would produce interference with signal transmission or reception Any signal interference incurred following the installation of a WECS shall be resolved to the satisfaction of the person receiving that signal interference. No Utility-Scale WECS shall be installed in any location within the line of sight of an existing microwave communications link where operation of the WECS is likely to produce interference in the link's operation unless the interference is insignificant.
14. **Substations and accessory buildings.** Structures related to a WECS shall be subject to the dimensional and locational standards of structures in the zoning district. Where structures are visible from adjacent properties, vegetative or manmade screening may be required to minimize visual impact off-site.
15. **Inspection.** The Township shall have the right upon issuing any WECS or wind energy facility special use permit to inspect the premises on which each WECS is located at any reasonable time. The Township may hire a consultant to assist with any such inspections at a reasonable cost to be charged to the operator of the WECS.
16. **Complaints and Resolution.** It is the intent of this ordinance to provide a mechanism to address and resolve complaints prior to the expenditure of significant funds by the Township and/or operator for investigation and resolution. Therefore, the Township shall perform an initial vetting of complaints prior to requesting funds from the operator for complaint resolution efforts. Complaints of noncompliance with the requirements of this ordinance shall be resolved in the following manner:

- (i) Complaints shall be submitted to the Township Zoning Administrator in writing from the affected property owner, or written designee, including name, address, contact information, and specific complaint. The written complaint shall include the specific section of the ordinance which is believed to be violated. The Zoning Administrator shall cause the complaint to be added to the agenda of the next Township Board meeting in accordance with the procedure for setting the agenda.
- (ii) The Zoning Administrator shall submit to the operator of record notice of all written complaints to the Township within 10 days of receipt of any complaint. Complaints received by the Township and the date of any Township Board meeting where complaints may be considered shall be communicated to the operator.
- (iii) Upon review, if the Township Board, by an affirmative vote of the majority of the members present, deems a complaint sufficient to warrant an investigation, the Township Board shall notice the owner(s) and/or operator of the WECS that an investigation has been requested by the Board. Within ten (10) days of the date of the notice, the owner/operator of the WECS shall deposit reasonable funds, at the determination of the Township Board, sufficient to pay for third-party independent investigation of the complaint.
- (iv) If the WECS is found in compliance, the balance of the deposit that was not used for the investigation shall be returned to the owner(s) and/or operator who submitted funds.
- (v) If the WECS is found in violation of this ordinance, the owner(s) and/or operator shall take immediate action to bring the WECS into compliance. If the operator fails to bring the operation into compliance within thirty (30) days, the Township may seek any relief at law or equity to abate the nuisance and may also issue a municipal civil infraction citation. Each violation for which the owner(s) and/or operators are deemed responsible shall result in a \$500.00 fine. Each day of non-compliance shall be a separate offense.

**17. Decommissioning.**

- (i) The applicant shall engage a certified professional engineer acceptable to the Township to estimate the total cost of decommissioning the structure in accordance with the requirements of this ordinance, including reclamation to the original site conditions. The cost of decommissioning shall be reviewed between the operator and the Township Zoning Administrator every two (2) years to ensure adequate funds are allocated for decommissioning; the security bond, defined herein, shall be appropriately adjusted to reflect the then current decommissioning estimate.
- (ii) All above and below ground materials shall be removed when the WECS is decommissioned.
- (iii) The ground shall be restored to its original condition within 60 days of removal of the structures. Acceptable ground covers include grasses, trees, crops, or other material demonstrated to be characteristic of the surrounding land.
- (iv) In the event that the WECS owner or operator fails to comply with the decommissioning requirements of this Ordinance, the Township may, upon thirty (30) days written notice to the WECS owner and/or operator, utilize the security bond referenced in Section 17(i) to complete the decommissioning process.

**18. Abandonment.** Any WECS that is not used to produce energy for a period of six (6) successive months or longer shall be deemed to be abandoned and shall be promptly dismantled and removed from the property in accordance with the decommissioning regulations of this ordinance, unless the applicant receives a written extension of that period from the Township Board in a case involving an extended repair schedule for good cause.

**19. Reasonable Conditions.** In addition to the requirements of this section, the Planning Commission may impose additional reasonable conditions on the approval of WECS as a special use.

## 20. Security Bond.

- (i) The owner(s) and/or operator of the WECS shall post a security bond in a form acceptable to the Township equal to one-hundred fifty (150) percent of the total estimated decommissioning and reclamation costs. The cost of decommissioning shall be reviewed between the operator and the Township Board every two (2) years to ensure adequate funds are allocated for decommissioning; the security bond, defined herein, shall be appropriately adjusted to reflect the current decommissioning estimate.
- (ii) The security bond shall be posted and maintained with a bonding company licensed in the State of Michigan or a Federal- or State-chartered lending institution acceptable to the Township.
- (iii) Any bonding company or lending institution shall provide the Township with 90 days' notice of the expiration of the security bond. Lapse of a valid security bond is grounds for the actions defined in *subpart v.*, below.
- (iv) In the event of sale or transfer of ownership and/or operation of the WECS, the security bond shall be maintained throughout the entirety of the process.
- (v) If at any time during the operation of the WECS or prior to, during, or after the sale or transfer of ownership and/or operation of the WECS the security bond is not maintained, the Township may take any action permitted by law, revoke the special land use, order a cessation of operations, and order removal of the structure and reclamation of the site.

## 21. Transfer or sale.

- (i) In the event of a transfer or sale of the WECS, the Township shall be notified and the special land use, without a public hearing, may be amended administratively by the Zoning Administrator.
- (ii) Change in ownership alone shall be considered a minor amendment to the special land use and may be approved administratively.
- (iii) Any proposed changes to the operating procedure or approved site plan shall be amended and resubmitted for Township review according to the procedures for all WECS as outlined herein, including a public hearing.
- (iv) Upon transfer or sale, the security bond shall be maintained at all times, the estimated costs of decommissioning shall be resubmitted, and the security bond adjusted to account for the new estimate.

### (e) Wind Energy Conversion System Site Plan Review Procedure.

An application for a WECS shall be reviewed in accordance with all applicable requirements in Section 3.16 – Site Development Plan and Article XI – Special Use Requirements of this Ordinance. In addition to these requirements, site plans and supporting documents for WECS shall include the following additional information, as appropriate:

1. Documentation that noise emissions, construction code, tower, and safety requirements have been reviewed by the appropriate third-party professional and the submitted site plan is prepared to show compliance with these issues.
2. Proof of the applicant's public liability insurance for the project.
3. A copy of that portion of all the applicant's lease(s) with the land owner(s) granting authority to install the WECS and/or Anemometer Tower; legal description of the property(ies), Lease Unit(s); and the site plan shows the boundaries of the leases as well as the boundaries of the Lease Unit Boundary, as well as a copy of any letters waiving the sound and/or shadow flicker limit on Non-Participating Parcels.
4. An un-redacted safety manual from the turbine manufacturer and a statement from the applicant verifying that the WECS is or will be operated in compliance with all requirements therein.

5. The phases, or parts of construction, with a construction schedule.
6. The project area boundaries.
7. The location, height, and dimensions of all existing and proposed structures and fencing.
8. The location, grades, and dimensions of all temporary and permanent on-site and access roads from the nearest county or state maintained road.
9. A description of the routes to be used by construction and delivery vehicles and of any road improvements that shall be necessary in the Township to accommodate construction vehicles, equipment or other deliveries, and an agreement or bond which guarantees the repair of damage to public roads and other areas caused by construction of the WECS.
10. All new infrastructure above and below ground related to the project, including transmission line locations.
11. A copy of Manufacturers' Material Safety Data Sheet(s) which 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.
12. Description of operations, including anticipated regular and unscheduled maintenance.
13. Additional Requirements for Utility-Scale Wind Energy Conversion Systems only:
  - (i) A wind assessment study conducted within a potential project area shall be completed within 18 months of the date of application for a WECS. The study must show analysis for a period of time no less than one (1) year. The height of an anemometer (or similar) device measuring wind availability shall be placed within the potential vertical swept blade area of the proposed WECS. Temporary (one-year) installation of said device may be applied for through the Township site plan approval process and may be approved for a height acceptable to determine feasibility of a WECS height allowed by this ordinance. The anemometer shall be decommissioned in accordance with Section 3.32(d)17 of this ordinance, including the provision of a security bond covering decommissioning costs.
  - (ii) A copy of a noise modeling and analysis report completed by a third-party acoustician acceptable to the Township and the site plan shall show locations of equipment identified as a source of noise which is placed, based on the analysis, so that the Utility Grid WECS shall not exceed the maximum permitted sound pressure levels. The noise modeling and analysis shall conform to the most current protocol for The International Electrotechnical Commission (IEC) 61400, Parts 11 and 14, The International Organization for Standardization (ISO) 9613-2, and ANSI S12.62, including all tolerances and uncertainties. After installation of the WECS, sound pressure level measurements shall be performed by a third party, acoustician acceptable to the Township according to the procedures in the most current version of The American National Standards Institute (ANSI) S12.9, Part 3 and ANSI S12.100 for measurements (with an observer). All sound pressure levels shall be measured with a sound meter that meets or exceeds the most current version of ANSI S1.4 specifications for a Type II sound meter. Documentation of the actual sound pressure level measurements shall be provided to Beaver Township within 60 days of the commercial operation of the project and as requested to respond to a noise complaint from a resident.

- (iii) A visual impact simulation showing the completed site as proposed on the submitted site plan. The visual impact simulation shall be from four viewable angles.
- (iv) A copy of an Environmental Analysis by a third party qualified professional acceptable to the Township to identify and assess any potential impacts on the natural environment including, but not limited to wetlands and other fragile ecosystems, historical and cultural sites, and antiquities. The applicant shall take appropriate measures to minimize, eliminate or mitigate adverse impacts identified in the analysis, and shall show those measures on the site plan. The applicant shall identify and evaluate the significance of any net effects or concerns that shall remain after mitigation efforts.
- (v) A copy of a shadow flicker analysis at Non-Participating Parcel property lines to identify the locations of shadow flicker that may be caused by the project and the expected durations of the flicker at these locations from sunrise to sunset over the course of a year. The site plan shall identify problem areas where shadow flicker may affect the owners and/or occupants of the Non-Participating Parcels and show measures that shall be taken to eliminate the problems.
- (vi) The restoration plan for the site after completion of the project which includes the following supporting documentation:
  - a. The anticipated life of the project.
  - b. The estimated decommissioning costs as defined in this ordinance
  - c. The security bond, or similar Township-approved security, ensuring that funds shall be available for decommissioning and restoration.
  - d. The anticipated manner in which the project shall be decommissioned, and the site restored.
- (vi) A contact person/address to which any notice of complaint, as defined by this ordinance, may be sent.

**(f) Deposit to defray cost of hiring consultants and experts.**

To administer the provisions relating to WECS, the Township may hire consultants and experts as are reasonably necessary in the sole discretion of the Township. The applicant shall pay the Township in advance for the costs of such consultants and experts. The Township may charge an annual fee to be determined by the Beaver Township Board and assess additional fees in order to execute its responsibilities related to a project. Any fees charged must be reasonable in light of efforts required.

**SECTION 4.** *Chapter V of Beaver Township Ordinance No. 15* is hereby amended by adding *subsection (i)* to *Section 5.02* to read as follows:

- (i) On-Site Wind Energy Conversion Systems (WECS) described in *part (x)* of *subsection (b)* of *Section 3.32* and Utility-Scale Wind Energy Conversion Systems (WECS) when authorized as a special use by the Planning Commission. When considering such authorization, the Planning Commission shall consider the provisions of *Sections 3.16* and *3.32*, and *Chapter XI*.

**SECTION 5.** *Chapter VI of Beaver Township Ordinance No. 15* is hereby amended by adding *subsection (j)* to *Section 6.02* to read as follows:

- (j) On-Site Wind Energy Conversion Systems (WECS) described in *part (x)* of *subsection (b)* of *Section 3.32* when authorized as a special use by the Planning Commission. When considering such authorization, the Planning Commission shall consider the provisions of *Sections 3.16* and *3.32*, and *Chapter XI*.

**SECTION 6.** This ordinance shall be published in *The Valley Farmer*, a newspaper of general circulation within Bay County, within 15 days after adoption. All provisions of this ordinance shall become effective upon the expiration of seven days after the last required publication following adoption. All ordinances or parts of ordinances in conflict with this ordinance are hereby repealed.

**SECTION 7.** The above ordinance was adopted at a regular meeting of the Township Board on the 14<sup>th</sup> day of May, 2018.

**YEAS:** Steve Gray, Nick Tomczak, Bill Retzloff, Mary McCarry

**NAYS:** None

**ABSTAIN:** Gary Koch

**ABSENT:** None

**ORDINANCE DECLARED ADOPTED.**

Mary McCarry, Beaver Township Clerk  
Bay County, Michigan  
1850 S. Garfield Rd.  
Auburn, MI 48611