

**DOUGLASS TOWNSHIP**

**ORDINANCE NO. \_\_\_\_\_**

**AN ORDINANCE TO AMEND THE ZONING ORDINANCE  
TO PERMIT AND REGULATE WIND ENERGY CONVERSION**

**SYSTEMS** The Township of Douglass ordains:

**Section 1. Add Definitions to Article 2**

The following definitions are added to Article 2 of the Zoning Ordinance, and will be placed in the sections of the Zoning Ordinances identified below so that all definitions are in alphabetical order:

*Section 2.02:*

Ambient: The sound pressure level exceeded 90% of the time over a 96-hour measurement period

ANSI: American National Standards Institute.

*Section 2.03*

Body of Water: A lake, pond, river, stream, wetland or any other area which is naturally and permanently covered by water but does not include a human-made drainage or irrigation channel, lands that are seasonally covered by water or lands which may be subject to intermittent flooding.

*Section 2.04*

Commercial Wind Energy Conversion Systems: A horizontal or vertical axis wind energy conversion system designed and built to provide electricity to the electric utility grid for resale to consumers.

*Section 2.05:*

dB(A): The sound pressure level in decibels. Refers to the "a" weighted scale. dB(C): The sound pressure level in decibels. Refers to the "c" weighted scale.

Decibel: A unit of measure used to express the magnitude of sound pressure and sound intensity.

Decommission: To remove or retire from active service.

*Section 2.06:*

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

*Section 2.09:*

Height of Structure: The height of the structure is to the highest point on the tip of a fully vertical rotor blade from ground level.

*Section 2.10:*

IEC: International Electrotechnical Commission. The IEC is the leading global organization that prepares and publishes international standards for all electrical, electronic and related technologies.

Instantaneous Sound Pressure: Total instantaneous pressure, in a stated frequency band, at a point in the presence of a sound wave, minus the atmospheric pressure at that point measured in unit pascal (Pa)

ISO: International Organization for Standardization. ISO is a network of the national standards institutes of 156 countries.

*Section 2:14:*

LMAX is the highest time-weighted sound level measured by the meter during a given period of time.

*Section 2.15:*

Non-Participating Parcel: A parcel of land whether or not within the Township that is not subject to a wind turbine lease or easement or other contractual agreement at the time an application is submitted for a Special Land Use Permit for the purposes of developing and constructing a commercial wind energy conversion system.

*Section 2.17:*

Participating Parcel: A parcel of land within the Township that is subject to a wind turbine lease or easement or other contractual agreement at the time an application is submitted for a Special Land Use Permit for the purposes of developing and constructing a commercial wind energy conversion system.

Pasquill: An atmospheric stability class to categorize the amount of turbulence present.

Private WECS: A WECS that supplies energy to a structure on the parcel on which it is located and that does not primarily involve the sale of electricity or communication services off the parcel (including to an electric grid).

Qualified Professional: A third party representative with experience and training in the pertinent discipline who is agreed upon by the Township and the applicant *Section 2.18:*

Rotor: An element of a wind energy system that acts as a multi bladed airfoil assembly, thereby extracting through rotation, kinetic energy directly from the

wind.

*Section 2.19:*

SCADA (Supervisory Control and Data Acquisition): A computer system that monitors and controls Wind Energy Conversion System units and data.

Shadow Flicker: Alternating changes in light intensity caused by the moving blade of a wind energy system casting shadows on the ground and stationary objects, such as a dwelling or other structure.

Sound Pressure: Root mean square of the instantaneous sound pressures in a stated frequency band and during a specified time interval, unless another time-averaging process is indicated measured in units.

Stray Voltage: Stray voltage refers to small voltage differences that can exist between two surfaces that are accessible to animals (stanchion, waterer, floor, etc.). When an animal touches both surfaces simultaneously, a small electric current will flow through its body. If the current is high enough, it can be felt by the animal and may cause behavioral changes.

Sound Pressure Level (SPL): Twenty times the common logarithm of the ratio of the sound pressure to the reference sound pressure of 20 micropascals measured in decibel (dB). Unless expressed with reference to a specific weighing network (such as dB(A)), the unit dB refers to an un-weighted measurement.

*Section 2.20*

Tip Height: The height of the turbine with a blade at the highest vertical point, including horizontal and vertical axis turbines.

*Section 2.23:*

Wind Energy Conversion System (WECS): A horizontal or vertical axis wind energy conversion system which converts wind energy into electricity through the use of a wind turbine generator and includes the turbine, blades, and tower as well all related electrical equipment, building or other structures, including wiring to interconnect the wind energy system to the electrical transmission grid.

Wind Site Assessment: An assessment to determine the wind speeds at a specific site and the feasibility of using that site for construction of a wind energy system.

**Section 2. Add New Section 16.08(LL), entitled “Wind Energy Conversion Systems”**

New subsection (LL) is added to Section 16.08 of the Zoning Ordinance and reads as follows:

**Section 16.08(LL). Wind Energy Conversion Systems.**

**1. General Provisions.** All WECS are subject to the following requirements:

a. All WECS must conform to the provisions of this Ordinance; all county, state, and federal regulations and safety requirements; all applicable building codes, county codes, and airport area zoning ordinances; and all applicable industry standards, including those of the American National Standards Institute (ANSI).

b. The Township may revoke any approvals for, and require the removal of, any WECS that does not comply with this Ordinance.

c. WECS are permitted in the Township in the following districts, subject to this Section 16.08(LL) and other applicable provisions of the Zoning Ordinance:

Type of System	Sub-Type of System	Zoning District	Special Use Permit
Private WECS		All zoning districts as accessory use	Not required
Commercial WECS	WECS Systems	Agricultural Industrial	Required
	WECS Testing Facilities	Agricultural Industrial	Required
Transmission and utility lines		All zoning districts	Not required
Office, manufacturing, substations, or sales buildings related to WECS		Agricultural Industrial	Not required

**2. Private WECS.**

a. Private WECS. Private WECS are permitted as an accessory use in all zoning districts. A building permit is required for the installation of any Private WECS.

b. Noise Control. Private WECS must comply with the noise limits set forth in subsection 4 of this Ordinance.

c. Height; Ground Clearance. The total height of a Private WECS with the blade fully extended must not exceed 80 feet. The minimum clearance from ground level to the blade at its lowest point must be 30 feet.

d. Setback. The minimum setback of a Private WECS from any property line or road right-of-way must equal to 3 times the tip height (with the WECS blade at its highest point).

### **Commercial WECS: Application Requirements**

e. Applicability. The requirements in this subsection 3 apply to all Commercial WECS and WECS Testing Facilities. Any reference to “Commercial WECS” in this subsection also includes WECS Testing Facilities.

f. Township approvals required. A special land use permit and site plan approval are required for all Commercial WECS.

g. Application contents. An application for a special land use permit for a Commercial WECS must include all of the following. The Township is not required to accept or process an incomplete or facially insufficient application.

1. *Fee*. Application fee in an amount set by resolution of the Township Board.
2. *Parcel Information*. A list of all parcel numbers that will be used by the Commercial WECS; documentation establishing ownership of each parcel; and any lease agreements, land contracts, licenses, easements, or purchase agreements for the subject parcels.
3. *Operations Agreement*. An operations agreement setting forth the operations parameters, the name and contact information of the certified operator, the applicant’s inspection protocol, emergency procedures, and general safety documentation.
4. *Visual Depiction*. Current photographs of the subject property and a visual depiction (computer generated) of the subject property with the Commercial WECS installed, viewed from multiple perspectives.
5. *Site Plan*. A site plan that complies with Article 21 of the Zoning Ordinance and that includes:
  - i. the locations and heights of all proposed structures and the location of all equipment, transformers, substations, towers, electrical lines (underground), guy wires, guy wire anchors, and other structures;
  - ii. the locations and height of all adjacent buildings, structures, and above-ground utilities;
  - iii. the location, dimensions, composition, and proposed maintenance plan for all access driveways;
  - iv. all setbacks and the location of property lines, signage, fences,

greenbelts and screening, drain tiles, easements, floodplains, bodies of water, and road rights of way; and

v. a depiction of how the Commercial WECS will be connected to the power grid.

6. *Power Purchase Agreement.* A copy of the applicant's power purchase agreement or other written agreement with an electric utility showing approval of an interconnection with the proposed Commercial WECS.

7. *Maintenance Plan.* A written plan for maintaining the subject property, including a plan for maintaining and inspecting drain tiles and addressing stormwater management.

8. *Decommissioning Plan.* A decommissioning and land reclamation plan describing the actions to be taken following the abandonment or discontinuation of the Commercial WECS, including evidence of proposed commitments with property owners to ensure proper final reclamation, repairs to roads, and other steps necessary to fully remove the Commercial WECS and restore the subject parcels. The decommissioning plan must include the following information and the Decommissioning Report required under subsection 5(c):

i. the useful life of each type and size of turbine in the project; ii. the anticipated life of the project;

iii. a method of ensuring that funds will be available for decommissioning and restoration;

iv. the anticipated manner in which the project will be decommissioned and the site restored to original condition; and

v. a detailed policy and process book for the repair, replacement, and removal of malfunctioning, defective, worn, or non-compliant WECS components.

9. *Waste.* A plan for managing any hazardous waste and other refuse from the construction or operation of the Commercial WECS, including a description of the disposal plan for obsolete, damaged, or retired equipment (including turbines). No such materials shall be stored or maintained on any property for longer than 30 days.

10. *Security Plan.* A description of the security system that will be used to protect the Commercial WECS from trespassing and vandalism and to protect the public health, safety, and welfare.

11. *Transportation Plan.* A transportation plan for construction and operation phases, including any applicable agreements with the Montcalm County Road Commission and Michigan Department of Transportation, which is subject to the Township's review and approval.
12. *Environmental Assessment.* A written environmental assessment or impact study conducted by a Qualified Professional, which must evaluate the impact of the proposed Commercial WECS on rare or endangered species, eagles, birds, wildlife, rare or endangered plant species, and waterways. The study must be based on data from within a three-mile radius of the Township's boundaries.
  - i. "Hydrologic and Groundwater Impact Study: A hydrologic and groundwater impact study and report prepared by a Qualified Professional. A soil erosion plan must be submitted with the application. The soil erosion plan, hydrologic study and groundwater impact study must be approved before the construction can start. The Commercial WECS shall make reasonable efforts to minimize adverse impacts on water quality and soil erosion, particularly during the construction phase of the project. Any soil erosion must be mitigated within five (5) working days.
13. *Sound Modeling Report.* A sound modeling report for the project, which must include a map with sound contour lines for dB(A) Leq 1 second and dB(C) Leq 1 second sound emitted from the proposed WECS. The study must include a map (at 1:8000 scale or bigger) showing sound contours at 5 dB intervals, proposed wind turbine locations, Participating and Non-Participating properties, and all occupied and unoccupied buildings. The applicant must identify each operational component of a wind turbine that will produce sound that will be audible at the property line of a non-participating parcel. The predicted values must include cumulative sound levels created by all existing, approved, and proposed turbines. The sound model and accompanying map must extend out to the 30 dB sound pressure contour line or 1 mile from a wind turbine generator, whichever is furthest from the nearest wind turbine.

The modeling and analysis must confirm that the Commercial WECS will not exceed the maximum permitted sound pressure levels or the maximum permitted infrasonic acoustic pressure oscillations. Modeling and analysis must:

- i. comply with IEC 61400 and ISO 9613,
- ii. be set for the worst-case environment, such as high humidity (90%), frozen ground (non-porous), no ground cover (G=0), low

temperature (below 0°C), and stable wind (Pasquill stability classes E and F), and

- iii. include the WECS Manufacturer's uncertainty factor (minimum 2 dB) and the ISO 9613 uncertainty factor (minimum 3 dB).

Modeling can be based on the WECS manufacturer data. However, measured data from existing and similar WECS facilities must be submitted with the modeling report.

14. *Background Sound Study.* A written pre-construction background (ambient) sound study performed by a qualified professional, which must indicate the Leq 1, Leq 10, and Leq 90 sound levels using A-weighting and C-weighting, with data collected at the nearest Non-Participating property line. Measurement procedures must follow the most recent versions of ANSI S12.18 and ANSI S12.9, Part 3 guidelines (with an observer present). Measurements must 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, including one Sunday, and produce data that includes a variety of ground and hub height wind speeds, at low (between 6-9 mph) medium (between 9-22 mph), and high (greater than 22 mph). The sound study must report for the period of the monitoring all topography, temperature, weather patterns, sources of ambient sound, and prevailing wind direction.
15. *Economic Impact Study.* A written economic impact study for the area affected by the Commercial WECS, including a forecast of the impact on jobs, tax revenue, lease payments, property values, and the growth of residential and business areas within the Township.
16. *Fire and Emergency Plan.* A written fire suppression and emergency response plan, which must include an unredacted safety manual for each type and size of turbine proposed in the project, as well as safety data sheets that include the type and quantity of all materials used in the operation of all equipment, including all lubricants and coolants. The fire and emergency plan shall also include information establishing that there is adequate access to local fire and emergency vehicle resources and/or fire suppression equipment on each turbine to suppress any fire or emergency including fires within the frame and housing at the top of the turbine.
17. *Stray Voltage Assessment.* A written report of stray voltage analyses, which must include a pre construction stray voltage test performed by a qualified professional on all Michigan Department of Agriculture & Rural Development (MDARD) registered livestock facilities located within a one-mile radius of the parcels on which the Commercial WECS will be constructed. The applicant must seek written permission from property



owners prior to conducting testing on their property. The applicant is not required to perform testing on property for which the owners have refused to grant permission to conduct the testing.

18. *Lighting Plan.* A written lighting plan identifying the planned number and location of lights, light color, activation methods, and whether any lights blink. The lighting plan must comply with lighting requirements in this Ordinance.
19. *Shadow Flicker Analysis.* A written shadow flicker analysis and report describing potential shadow flicker created by each proposed wind turbine on all public roads and at all Non-Participating Parcel property lines with direct line-of-sight to a wind turbine.
20. *Automatic De-Icing System.* A description of the automatic de-icing system that the Commercial WECS will use to detect, heat, and melt ice on all turbine blades.
21. *Security and Escrow.* Deposit of the financial security and escrow accounts as required by this Ordinance.
22. *Insurance.* Proof of the insurance required under this Ordinance.
23. *Complaint Resolution Plan.* A plan for resolving complaints from the public or other property owners concerning the construction and operation of the Commercial WECS in compliance with this Ordinance.
24. *Compliance Certification.* Certification that the applicant has complied or will comply with all applicable state and federal laws and regulations. The applicant must provide a list of all permits, approvals, or authorizations required for the WECS by any local, county, state, or federal government or their agencies. The applicant must submit copies of all permits and approvals that have been obtained or applied for at the time of the application. Note: Land enrolled in Michigan Farmland Preservation Program through Part 361 of the Natural Resources and Environmental Protection Act, 1994 Act 451 as amended, more commonly known as PA 116, must receive approval from MDARD to locate a WECS on the property and provide documentation to the Township prior to construction. **All permits and approvals must be obtained before the applicant or operator begins any phase of construction,** as further set forth in this Ordinance.
25. *Indemnification.* An attestation that the applicant will indemnify and hold the Township harmless from any costs or liability arising from the approval, installation, construction, maintenance, use, repair, or removal of the Commercial WECS.

26. *Additional Compliance Information.* To the extent not already provided in the items above, a description of how the Commercial WECS will comply with the standards and requirements of this Ordinance.

h. Duty to supplement. The applicant has a continuing duty to supplement its application with information or documents that fulfill any of the application requirements. The applicant must also provide any additional information or documentation requested by the Planning Commission, Township Board, or other Township representative at any time, including after approval of the Commercial WECS.

i. Adequate review time. The applicant must submit all application materials at least 30 days before any Planning Commission meeting at which the application is to be discussed. The Planning Commission and Township are not obligated to consider any material that is not timely submitted. The Planning Commission or Township staff may, however, require the applicant to provide additional or supplemental information or documents at any time.

j. Facially insufficient applications. The Planning Commission is not obligated to consider or hold a public hearing on an application if the proposed Commercial WECS, based on the application and supporting materials, does not meet the requirements of this Ordinance as determined by the Township Zoning Administrator. By way of example and not limitation, if a proposed Commercial WECS will not include automatic de-icing systems on all turbines as required under this Ordinance, then the Zoning Administrator may determine that the application is facially insufficient. The applicant may appeal the Township Zoning Administrator's decision of facial insufficiency to the Zoning Board of Appeals.

### **3. Commercial WECS: Noise Regulations**

#### **a. Maximum Noise Levels.**

i. Maximum Noise Levels. Noise levels produced by the WECS must not exceed Maximum sound levels: 30 Dba LMAX from 10:00 p.m. to 7:00 a.m. at 40 Dba LMAX from 7:00 a.m. to 10:00 p.m. on a Non Participating Parcel. The Township Board may, in its sole discretion, allow a higher noise level only if the owner of the Non-Participating Parcel signs a waiver consenting to a specific higher noise level and the waiver is recorded with the Montcalm County Register of Deeds.

ii. Noise levels produced by the WECS must not exceed 40 Dba LMAX from 10 pm to 7 am and 45 Dba LMAX from 7 am to 10 pm on a Participating Parcel. The Township Board may, in its sole discretion, allow a 5 db higher noise level only if the owner of the Participating Parcel signs a waiver consenting to the higher noise level and the waiver is recorded with the Montcalm County Register of Deeds.

b. Noise Compliance. The Township may, from time to time, measure whether the Commercial WECS is complying with the maximum noise levels under this Ordinance. Compliance measurements are the financial responsibility of the applicant or operator and must be independently performed by a Qualified Professional selected by the Township.

c. Noise Measurement. The measurements require an observer to be present. All noise measurements will exclude contributions from wind on microphone, tree/leaf rustle, flowing water, and natural sounds such as tree frogs and insects. The wind velocity at the sound measurement microphone must be between 2m/s (4.5 mph) and 4.5m/s (9 mph) during measurements. During testing of elevated sources, including WECS systems, the atmospheric profile must be relatively calm, Pasquill Stability Class D or calmer during the day and Class E or calmer during the Night.

d. Noise Level During Measurements. Noise measurements will be conducted consistent with ANSI S12.18 Procedures for Outdoor Measurement of Sound Pressure Level ANSI S12.9 Part 3 (Quantities and Procedures for Description and Measurement of Environmental Sound – Part 3: Short-term Measurements with an Observer Present), using Type 1 meter, A-weighting, Fast Response.

e. Tonal Noise. Tonal noise will be assessed using unweighted (linear) 1/3 octave band noise measurements with time-series, level-versus-time data acquisition. A measurement constitutes 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).

f. Sample Metric and Rate. Noise level measurements for essentially continuous non-time-varying noise sources will be acquired using the Leq(Fast) metric at a sample rate of 1-per-second. For fluctuating or modulating noise sources, including wind turbines, a 10-per-second sample rate will be used. These sample rates apply to dB(A), dB(C) and unweighted 1/3 octave band measurements.

g. Reporting. Measurements of time-varying dB(A) and dB(C) noise levels and 1/3 octave band levels will be reported with time-series level-versus-time graphs and tables. Graphs will show the sound levels graphed as level-versus-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 will be produced. For 10-per-second sampling, a 30-second-or-longer graph will be produced. Reporting and graphs must clearly identify what was heard and when the noise source is dominating the measurement. The report must include all noise data and information on weather conditions and Pasquill Class if an elevated source is measured. All measured data must be accompanied by SCADA data confirming full power operation during testing of the WECS systems.

h. Measurable Infrasonic Acoustic Sound Pressure Levels. Measurable infrasonic acoustic sound pressure level from the WECS must be less than 30 Dba from 10:00 p.m. to 7:00 a.m. at 40 Dba from 7:00 a.m. to 10:00 p.m. on a Non Participating Parcel and 40 Dba from 10 pm to 7 am and 45 Dba from 7 am to 10 pm on a Participating Parcel. as totalized in the range of 0.1-20 Hz, using low-pass filtering, or by computing the log-subtraction of the Fast, C-weighted (dB(C) level from the Fast, unweighted SPL, at any location, outdoors or indoors, on non-participating property. Time-level-averaging, if used, must be limited to 1-second or faster sampling. A

minimum sampling rate of at least 10 times per second is required.

i. Post-Construction Sound Survey. At least two months after the Commercial WECS is operational, the Township may select a third-party qualified professional to survey the sound pressure levels of the Commercial WECS. The applicant and operator must cooperate with the survey. All costs of the survey, including the professional's fees, will be paid by the applicant or operator. The Township will determine the locations at which sound levels are to be measured. To the extent possible, the study will follow the procedures for Type 1 Sound Level Testing and ANSI S12.9 Part 3 (with an observer present) and ANSI S12.18. All sound pressure levels will be measured with instruments that meet ANSI or IEC Type 1 Precision integrating sound level meter performance specifications. The applicator or operator must supply all data requested by the Township or the third party conducting the survey, specifically including one-second interval SCADA data and any other SCADA data that is requested.

#### 4. Commercial WECS: Site & Use Standards and Requirements

a. Setback from Property. The minimum setback from any property line of a Non-Participating Parcel or any road right-of-way is 1640 feet or 5 times the Tip Height of each turbine in the Commercial WECS, whichever is greater. The minimum setback for each turbine from any inhabited structure on a Participating Parcel is 1640 feet. Non-Participating Parcel property line setbacks may be waived by the owners of Non-Participating Parcels if such record owners have signed a release, which must be recorded with the Montcalm County Register of Deeds. For safety, there is no waiver option for Participating Properties inhabited structures.

b. Setback from Bodies of Water. The minimum setback from any lake is 2.5 miles. The minimum setback from the Flat River is 1 mile. The minimum setback from wetlands, including creek bottoms measuring up to 5 linear acres is 2640 feet.

c. Maximum Height. The maximum height of a WECS with the blade fully extended must not exceed 350 feet.

d. Shadow Flicker. A Commercial WECS must not produce any shadow flicker on i) public road ~~rights-of-way~~, or ii) Non-Participating Parcels unless the record owners of the Non-Participating Parcels have signed a release, which must be recorded with the Montcalm County Register of Deeds.

e. Ground Clearance. The minimum clearance from ground level to the blade at its lowest point must be at least 100 feet.

f. Blade Clearance. Blade arcs created by a WECS must have a minimum of 200 feet of clearance over and away from any structure.

g. Braking. Each WECS must be equipped with a braking or equivalent device, capable of ~~stopping the~~ WECS operation in high winds with or without SCADA control. The braking system must be effective during complete grid power failure when WECS are unable to communicate with SCADA control or receive power.

h. Appearance. All turbines and towers must be painted a non-obtrusive, neutral color,

such as ~~beige, gray,~~ or off-white and must be non-reflective. All turbine bases and blades must be the same color and must be consistent with the color of other Commercial WECS in the Township. No advertisements, graphics, or striping are permitted on the blades or towers. The applicant is encouraged to select anti-icing paint that prevents the formation of ice on the surface of the turbine's blades.

i. Automatic De-Icing System. All turbines must be equipped with technology that automatically ~~de-ices the turbine blades~~. The system must detect ice and heat the blades, such as through the use of built-in carbon heating mats or through the circulation of hot air.

j. Signage. The site of the Commercial WECS must have (1) a sign for each turbine or tower posted near a public road right-of-way (on security fencing near any fence entryway); and (2) a sign attached to the base of each turbine or tower. The signs must be at least two square feet in area and must include the following information:

1. A warning of high voltage.
2. A warning of loud noise.
3. Notice of potential health risks.
4. Names of the applicant, operator, and real property owner.
5. Emergency telephone number, alternate telephone number, and web address.
6. Unique identification, such as an address. If more than one WECS is on an access drive, units must have further identification so they can be easily identified by emergency responders.

k. Security Fencing. Security fencing must be installed around all turbines and all electrical equipment related to the Commercial WECS, including any transformers and transfer stations. The applicant and operator must comply with the security plan filed with the special land use applications, with any amendments required by the Planning Commission at the time of approval of the special land use permit.

l. No Communication Interference. A Commercial WECS must not interfere with any radio, television, or other communication systems. If the Township or the applicant or operator of the Commercial WECS receives a complaint about communication interference, the applicant or operator must resolve the interference immediately and provide proof that the interference has been resolved within 90 days.

m. Underground Lines. All electrical connection systems and lines from the Commercial WECS to the electrical grid connection must be located underground at a depth of at least 20 feet below grade and at such deeper depth as may be required by applicable industry standards. The Planning Commission may grant exceptions to this requirement if the topography of the site makes underground lines impossible or unreasonably impracticable. The cost of locating lines

underground is not a factor in determining impossibility or impracticability.

n. Maintenance. All Commercial WECS must be maintained in good repair and good condition at all times. The applicant or operator must maintain a maintenance log and allow the Township to review the maintenance log at any time upon request.

o. Lighting. Towers may be lit only to the minimum extent required by the FAA. All tower lighting required by the FAA must be shielded to the extent possible to reduce glare and visibility from the ground. The tower shaft must not be illuminated unless required by the FAA. RADAR activated lighting must be used.

p. Access Driveways. The Commercial WECS must be accessible by one or more access driveways to allow emergency vehicles in the event of a fire or other emergency. Access driveways must be located at least 1000 feet from any Non-Participating parcel, unless the owner of the Non-Participating parcel has signed a waiver that is recorded with the County Register of Deeds.

q. Road Repairs. If any public or private roads are damaged as a result of the construction or operation of the Commercial WECS, the applicant or operator must repair the damage at their expense pursuant to all County Road Commission requirements. Repairs must be performed within 90 days after construction is complete (but no more than 365 days after the damage occurs) or within 90 days after the damage occurs if the construction is already complete.

r. Compliance with Plans. The applicant and operator must comply with all written plans submitted with the special land use application, with any modifications or additions required by the Planning Commission as part of its approval.

s. Substations and accessory buildings: Substations and other buildings and 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, vegetation or manmade screening shall be required to minimize visual impact off-site.

## **5. Commercial WECS: Additional Requirements**

a. Permits Required Before Construction Begins. All federal, state, county, and local permits and approvals must be obtained before the applicant or operator begins any phase of construction, including breaking ground or initiating construction on any portion of the WECS, such as the construction of turbine bases. By way of example and not limitation, all FAA approvals and permits for the turbines must be issued and in effect before any construction of turbine bases may begin, even if FAA approval is not required for the bases. Copies of these approvals must be provided to the Township as they are obtained.

b. Insurance. The applicant or operator must obtain and maintain insurance in an amount of at least \$10,000,000 for the Commercial WECS, which must cover, at a minimum, liability, property damage, environmental damage and livestock damage. The applicant or operator must provide proof of insurance to the Township on an annual basis.

c. Financial Security. To ensure available funding for the removal of the Commercial WECS when it is abandoned or non-operational and restoration of the property, the applicant must post acceptable financial security. The security must be in the form of (1) a cash deposit, or (2) performance (surety) bond selected by the Township Board, and is subject to all of the following requirements:

1. The security must remain in effect until the Commercial WECS is decommissioned.
2. The amount of the cash deposit or surety bond is to be calculated as follows:
  - i. At the time of the application for a special land use permit, the applicant must deposit a minimum of \$650,000 and provide a report (“Decommissioning Report”) prepared by a Qualified Professional estimating the cost of decommissioning the Commercial WECS, including all turbines and related structures and equipment, and the cost of restoring the real property, with such costs reduced by the net salvage value of the Commercial WECS (“Estimated Decommissioning Cost”).
  - ii. The Township’s engineer will review the applicant’s Decommissioning Report and may propose amendments to the applicant. The Planning Commission will not approve a special land use permit for the Commercial WECS unless the Township’s engineer approves the applicant’s Decommissioning Report, either as submitted or as amended.
  - iii. Within 10 days after approval of the Commercial WECS, the applicant or operator must post financial security in an amount equal to the Estimated Decommissioning Cost, plus an additional amount equal to the CPI (consumer price index) increase for the preceding year.
  - iv. The financial security must be renewed on or before January 1 of each year thereafter.
  - v. Every three years, beginning on the first January 1 that is three years after approval of the Commercial WECS, the applicant or operator must update the Decommissioning Report to reflect the current Estimated Decommissioning Cost and provide the updated report to the Township. If the updated Estimated Decommissioning Cost is higher than the amount of existing financial security posted with the Township, then the applicant or operator must post the amount of the updated Estimated Decommissioning Cost as its financial security and continue to pay that amount annually, plus an additional amount equal to the CPI increase for the preceding year. This three-year process will

continue for so long as the Commercial WECS is located in the Township.

3. The amount of the security will be updated every five years at the rate of 1.5 times CPI (consumer price index) for each year.
4. The security must be deposited or filed with the Township Clerk no later than 10 business days after a special land use permit has been approved.
5. Failure to keep financial security in full force and effect at all times while the Commercial WECS exists constitutes a material violation of the special land use permit for which the Township may pursue any remedies available under this Ordinance, including revocation of the special land use permit.

d. Decommissioning.

1. When any turbine or other component of the Commercial WECS ceases to actively produce power for 180 days or longer, the applicant, operator, or real property owner must remove the turbine or component and restore the property in accordance with the decommissioning plan filed with the Township as part of the special land use application. Upon request, the Township may grant a 90-day extension if the applicant or operator demonstrates that the turbine will be put back into use. The removal and restoration must be complete within 180 days after non-operation of the turbine.
2. The applicant, operator, or owner must obtain all permits necessary for the removal of a decommissioned turbine or component, including any necessary demolition permits.
3. All underground wiring for the removed turbine or components must be cut off at a depth of seven (7) feet below grade and the land restored with topsoil upon decommissioning.
4. If the applicant, operator, or owner fails to timely complete removal and restoration when required under this section, then the Township may have the turbine or other components removed and the property restored at the expense of the applicant or operator, drawing first from the financial security posted under this section. If the financial security is insufficient to fully fund removal and restoration, then the applicant, operator, and real property owner are jointly and severally liable for the remaining costs.
5. In addition to the Township's costs of removal and restoration, the Township is also entitled to recover from the applicant, operator, and real property owner all fees and expenses of the Township's attorneys, engineers, consultants, and other professionals whose services are used in connection with removal and restoration.



6. Failure by the applicant, operator, or owner to timely complete removal and restoration when required under this section constitutes a violation of this Ordinance. The Township may pursue all remedies, including enforcement action, fines, and revocation of the special land use permit.
7. In the event the WECS owner, operator, parent company, performance bond defaults on any or all of the previously outlined 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.

e. Escrow account. The applicant must establish an escrow account when it submits its application for a Commercial WECS. The amount must equal an estimate of the total costs of (1) reviewing and processing the special use permit application and site plan, including publication and administrative costs and costs of the Township Attorney, Township Planner, and Township engineer; and (2) any professional studies or report prepared by the Township or on the Township's behalf to assist with its evaluation of the application.

The Township may draw from the escrow account to reimburse any of its costs or expenses incurred in reviewing, processing, and evaluating the application. The Township may require the applicant to replenish the escrow account at any time to ensure a sufficient balance.

If the Township instructs the applicant to replenish the escrow account and the applicant fails to do so within 14 days after receiving notice, then the Township has no further obligation to process the applicant's application until the escrow account is replenished.

Any funds in the escrow account that exceed the Township's actual costs after the application is approved or denied (and after any and all appeals have been exhausted) will be returned to the applicant. The Township will provide an itemized statement to the applicant upon applicant's request.

f. Complaint Resolution. Subject to the Township's review and approval during the special land use approval process, the applicant or operator must comply with a complaint resolution process. At a minimum, the complaint resolution process must include the following:

1. The applicant or operator will, at its expense, use a website, telephone line, or third-party service to receive complaints about the Commercial WECS.
2. The applicant or operator will use its best efforts to respond to and resolve any complaints.

3. The applicant or operator will establish an escrow account with the Township with a minimum of **\$20,000 and replenished whenever the balance falls below \$5,000. \$5,000** balance at all times to pay the cost of investigating complaints.
4. The applicant or operator will forward each complaint, along with the applicant's or operator's response to each complaint, to the Township within 15 days after each complaint is received.
5. A three-member committee consisting of the Township's Zoning Administrator and two members of the Planning Commission as appointed by the Township Board will investigate each complaint, with all expenses (including professional fees) drawn from the escrow account.
6. At the Township's request, the applicant or operator must provide the Township with SCADA data from any turbine related to the complaint, which must include meteorological and performance data such as temperature, humidity, power output, wind velocities, and nacelle vector.
7. Following its investigation, if the Township has reason to believe that the applicant or owner has violated this Ordinance, the Township may take any actions permitted by law, including revoking the special land use permit following notice and an opportunity to be heard.

g. Change in Ownership. A special land use permit granted for a Commercial WECS is transferable. The proposed new WECS owner/operator must register with the Township Clerk before the transfer of ownership or operation of the WECS. The new WECS owner/operator must comply with all requirements of this Ordinance and any special land use permit issued pursuant to this section and must maintain a financial security guarantee as required under this section.

h. Extraordinary Events. If the Commercial WECS experiences a failure, fire, blade detachment, ice throw, leakage of hazardous materials, vandalism, property damage, personal injury, or other extraordinary or catastrophic event, the applicant or operator must notify the Township as soon as reasonably possible after the occurrence of any such event but not later than 24 hours thereafter.

i. Annual Report. The applicant or operator must submit a written report on or before January 1 of each year that includes all of the following:

1. Current proof of insurance;
2. Verification of financial security;

3. A summary of all complaints, complaint resolutions, and extraordinary events; and

4. A description of how the applicant or operator has complied with the written plans submitted in connection with its application.

**6. Violations of Ordinance**

- a. Following notice and an opportunity to be heard, the Township may revoke any approvals for, and require the removal of, any WECS that does not comply with this Section 16.08(LL).
- b. In addition to any other remedies in this section, violations of this Section 16.08(LL) also constitute a municipal civil infraction in accordance with Article XXI of this Ordinance. Each day that a violation occurs or continues constitutes a separate offense and is subject to penalties or sanctions as a separate offense under Article XXI.
- c. In addition to any other remedies set forth in this Ordinance, the Township may bring an action for damages or for an injunction or other action to restrain, prevent, or abate any violation of this Section.

**Section 3. Amend Section 5.03**

Section 5.03, entitled “Special Land Uses” for the AP Agricultural Preservation District, is amended to add “Commercial WECS subject to Section 16.08(LL)” as a special land use under section (B).

**Section 4. Validity and Severability.**

If any portion of this Ordinance is found invalid for any reason, such holding will not affect the validity of the remaining portions of this Ordinance.

**Section 5. Repealer.**

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

**Section 6. Effective Date.**

This Ordinance takes effect seven (7) days after publication as provided by law.

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