

BENGAL TOWNSHIP
CLINTON COUNTY, MICHIGAN
ORDINANCE NO. _____

At a duly scheduled and noticed meeting of the Township Board of the Township of Bengal, Clinton County, Michigan, held at the Bengal Township Hall on _____, 2012, at 7:00 p.m., Township Board Member _____ moved to adopt the following Ordinance, which motion was seconded by Township Board Member _____:

AN ORDINANCE TO PROTECT THE PUBLIC HEALTH, SAFETY, AND GENERAL WELFARE BY REGULATING THE ACTIVITY OF CONSTRUCTING, OPERATING, AND DECOMMISSIONING UTILITY-SCALE WIND ENERGY SYSTEMS, INCLUDING WIND TURBINES, WIND TOWERS, AND RELATED EQUIPMENT WITHIN BENGAL TOWNSHIP, CLINTON COUNTY, MICHIGAN.

THE TOWNSHIP OF BENGAL ORDAINS:

SECTION I

Title and Purpose: This Ordinance shall be known and cited as the Bengal Township Wind Energy Systems Ordinance. Bengal Township is hereafter referred to as "Township".

- A. As a result of extensive review by the Township and Township citizens, and discussions at several meetings open to the public, it is determined the installation and operation of Wind Energy Systems is an activity that, if not sufficiently regulated, has a high likelihood of creating disturbance and detrimentally affecting the health, safety, and welfare of Township residents.
- B. Adopting reasonable regulations regarding installation and operation of Wind Energy Systems is appropriate and necessary to protect the public health, safety and welfare of Township residents.
- C. The Township is authorized by Public Act 246 of 195, as amended to adopt an ordinance regulating, among other things, the public health, safety and welfare of persons and property in the Township. Regulating the activity of installing and operating Wind Energy Systems is a valid exercise of its police powers.

SECTION II.

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

- A. **Wind Energy System (WES):** Equipment that converts, stores, or transfers energy from wind into usable forms of energy. This includes any base, blade, foundation, generator, nacelle, rotor, tower, transformer, turbine, vane, wire or other component used in the system.
- B. **Wind Energy Generation Facility (WEGF):** One or more Utility Scale wind turbines under

common ownership or operation control, and includes substations, MET Towers, cables/wires and other buildings accessory to such facility, whose main purpose is to supply electricity to the energy grid and off-site customers or consumers.

- C. **WES Height:** The distance between the ground (at normal grade) and the highest point of the WES (being the tip of the blade, when the blade is in the full vertical position).
- D. **On-Site WES:** A single WES designed and constructed to provide energy to only the property where the structure is located, and up to two adjacent properties.
- E. **MET Tower:** The structure and equipment used to determine the placement or potential placement of a WEGF, containing instruments, such as anemometers, designed to provide wind data.
- F. **Person:** Any individual, corporation, partnership, limited liability company, association, or other legal entity.

SECTION III

License Application and Approval Procedure and Standards: No person shall locate, install, construct or operate a WES, WEGF or MET Tower within Bengal Township without first duly obtaining a license from the Township Board under this Ordinance.

A. Applicability:

1. WEGF, WES, and MET Towers associated with the commercial application of a WES may be approved by license, subject to the regulations and requirements of this Ordinance.
2. On-Site WES, including related Testing Facilities, 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 WES complies with all of the following:
 - a. The tower shall not exceed a height of 80 feet above ground level (at normal grade).
 - b. The blade diameter (tip to tip) shall not exceed 100 feet.
 - c. The distance of the structure from all property lines shall be at least two (2) times the WES height.
 - d. If the tower is for residential or agricultural use only on-site, the tower can be of either monopole or lattice design.
3. 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 provisions of this Ordinance.

B. License Application Requirements: Each application for a license shall be submitted to the Township Clerk, shall be accompanied by approval of the Clinton County Community Development Department, shall include the proposed construction schedule and project phasing (as applicable), and shall include all of the following:

1. Site Plan Drawings: All applications for a WES, WEGF or MET Tower license shall be accompanied by a detailed site plan drawn to scale and dimensioned, displaying all of the following information:
 - a. All lot lines and dimensions, including a legal description.
 - b. 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 project.
 - c. Locations and height of all 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 and orientation to other on-site buildings, structures, and utilities shall also be provided.
 - d. 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 WES, WEGF or MET Tower located on the lot or parcel involved, as well as within 1,000 feet of the boundaries of such parcel or lot.
 - e. Existing and proposed setbacks for each WES structure from all other existing or proposed structures located on the property where the WECS will be located.
 - f. 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.
 - g. Access driveway to each WES and MET Tower 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. All private roads shall be constructed to Clinton County private road standards.

2. Evidence of Compliance and Description of Safety Measures to be Taken by Applicant: All safety measures to be implemented initially and ongoing shall be outlined in detail, including:
 - a. Planned security measures to prevent unauthorized trespass/access:
 - i. To prevent unauthorized climbing, WES and MET Towers shall not contain climbing apparatus located on the outside of the tower, but must be located inside the tower; and
 - ii. A locked anti-climb device shall be installed and maintained; and
 - iii. A tower capable of being climbed shall be enclosed by a locked, protective fence at least ten (10) feet high with barbed wire fence.
 - b. Planned security measures to warn of potential danger: Each WES and MET Tower 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:
 - i. Warning high voltage.
 - ii. Warning falling ice.
 - iii. Manufacturer's name.
 - iv. Emergency telephone numbers and contact persons (list more than one).
 - v. Emergency shutdown procedures.
 - vi. 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 Bengal Township.

- vii. If fenced, place signs on the fence.
- c. Maintenance Programs, including a written description of the maintenance program to be used to maintain each WES and MET Tower, 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 WES or MET Tower become obsolete or abandoned.
- d. Planned safety measures to prevent uncontrolled rotation or over-speeding.
- e. Planned lighting protection measures.
- f. Additional detail(s) and information as requested by the Township Board.
- g. Evidence of Compliance with Building Code: A copy of the manufacturer's installation instructions and blueprints shall be provided to the Township, including 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.
- h. Evidence of Compliance 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.
- i. The maximum total height of each WES shall not exceed 400 feet including the blade in vertical position.
 - State and federal regulations may require a lesser height.
 - As a condition of approval, the Township Board may require a lesser height for a WES if reasonably necessary to comply with any other standards or requirements contained in this Ordinance.
- j. A WES, other than an On-Site WES, shall be constructed with a tubular tower, not a lattice tower.
- k. The total height of a MET Tower shall be no greater than 200 feet from the ground, at normal grade, and shall comply with design standards. A MET Tower not in use for 6 months or more shall comply with the provisions of this Ordinance regarding abandonment.
- l. Evidence that no part of a WES or MET Tower (including guy wire anchors) shall be located closer than (1) 1600 feet or four times the height of the structure, whichever is greater, from any residential dwelling, and (2) 1600 feet or four times the height of the structure, whichever is greater, from any parcel or lot line.
- m. Evidence that blade arcs created by a WES 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.
- n. Evidence the each WECS is or shall be equipped be with both a manual and automatic braking device capable of safely stopping the WES operation in high winds (forty (40) mph or greater) or in conditions of imbalance.

- o. A lighting plan for each WES and MET Tower 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.
- p. Evidence that each WES and MET Tower is or shall be designed, constructed and operated so as not to cause radio, television, wireless internet, and telephone (both landline and cellular) interference. In the event that electromagnetic interference is experienced, the applicant must provide alternate service to each individual resident or property owner affected.
- q. Evidence each WES and MET Tower shall be designed, constructed and operated so as not to cause any stray voltage.
- r. Evidence of noise immission from the operation of a WES or MET Tower shall:
 - i. Not exceed forty-five (45) decibels on the dB(A) scale between 7am and 7pm; and
 - ii. Not exceed forty (40) decibels on the dB(A) scale between 7pm and 7am; and
 - iii. Be measured at the nearest property or lot line, and 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."
- s. Applicant shall provide a report of the noise impact of the proposed WES 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:
 - i. 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.
 - ii. 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 WES or MET Tower. Said description shall include the location of the structure/land use, distances from the source of the sound or WES or MET Tower 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.
 - iii. 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.

- iv. 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 WES or MET Tower.
- v. Evidence WEGF distribution lines from each WES to the electrical grid connection shall be located and maintained underground (both on the property where the WES will be located and off-site). The Township Board may waive the requirement that distribution lines for the WES which are located off-site (*i.e.*, are not located on or above the property where the WES will be located) be located and maintained underground if the Township Board determines that the alternative proposed plan is reasonable

C. Approval Standards: In addition to the other requirements and standards contained in this section, the Township Board shall not approve any WES or MET Tower unless it finds that the WES or MET Tower will not pose a safety hazard or unreasonable risk of harm to the occupants of any adjoining properties or area wildlife.

1. **Inspection:** The Township shall have the right upon issuing any WES or MET Tower license to inspect the premises on which the WES or MET Tower is located at all reasonable times. The Township may hire a consultant to assist with any such inspections at the applicant's cost.
2. **Condition:** Each WES and MET Tower must be maintained in good repair and condition at all times. If a WES 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 WES, which shall be available for the Township's review on a monthly basis.
3. **License Fee:** As a condition of any license for a WES or MET Tower, 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.
4. **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, by the Applicant, at the applicant's expense. All above and below ground materials must be removed. The ground must be restored to its original condition within 60 days of abandonment.
5. **Security Deposit:** 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

- any WES or MET Tower. At a minimum, the financial security shall be in an amount determined by the Township Board to be sufficient to have the WES or MET Tower 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 WES or MET Tower is present within the Township. Such financial security shall be irrevocable and non-cancelable (except by the written consent of both the Township and the owner of the WES or MET Tower for at least 30 years from the date of the license approval, or until every WES and MET Tower has been completely removed as required by this Ordinance, whichever comes later). Failure to keep such financial security in full force and effect at all times while a WES or MET Tower is present in the Township 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.
6. Road repair: Any damages to a public road located within the Township resulting from the construction, maintenance, or operation of a WES or MET Tower shall be repaired expediently at the applicant's expense.
 7. Liability: The applicant shall maintain general liability insurance on each WES 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 from bodily injury and property damage.
 8. 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.
 9. Strobe effect (also known as shadow flicker): No WES or other related structure shall cause any strobe effect or shadow flicker on any property within the Township without the explicit written consent of the non-participating property owner.
 10. Wind Effect: Under no circumstances shall a WES or related structure or equipment produce vibrations or wind currents humanly perceptible beyond the property boundaries of the lot or parcel on which the WES or structure/equipment is located.
 11. Stray Voltage: The applicant shall not permit any stray voltage to be caused by its operation of a WECS, and violation of this prohibition shall be deemed evidence of the applicant's breach of its duty of ordinary care. Any person injured as a result of stray voltage caused by operation of an applicant's WECS may seek reimbursement against the applicant's security posted under subsection (5) above.
 12. Environmental Assessment: 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.
 13. Financial Impact Study: 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.
 14. Escrow: An escrow account shall be funded by the applicant when applying for a license for a WES or MET Tower. 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 performed 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.

15. 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 WES or Met Tower.
16. Changes: Throughout the permit review process, the Applicant must promptly notify the Township of any changes that arise which make the information in the application no longer completely accurate.
17. Compliance with all Laws: Each WES and MET Tower shall also comply with all applicable federal, state of Michigan, and county requirements, in addition to Township ordinances.
18. Variances & Waivers: Where there are practical difficulties or unreasonable 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:
 - a. Will not be contrary to the public interest; and
 - b. Will not cause a substantially adverse effect upon property values; and
 - c. Will relate only to the property under the control of the applicant; and
 - d. 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; and
 - e. Will not impair the adequate supply of air and light to any adjacent property; and
 - f. Will not increase the hazards from fire, flood or other natural or man-made dangers; and
 - g. Will not produce nuisance conditions to occupants of nearby premises, whether by reason of dust, noise, fumes, odors, vibration, smoke or excessive light; and
 - h. Will not otherwise impair the public health, safety and general welfare of the residents of Bengal Township.

D. On-Going Requirements: Applicant must:

1. Ensure continuous compliance with all provisions of this Ordinance; and
2. Make prompt, reasonable efforts to address complaints regarding the Applicant's compliance with this Ordinance; and
3. Maintain the required Security Deposit and Liability Insurance outlined in this Ordinance; and provide the Township with evidence of such at all times; and
4. Ensure the Township possesses updated emergency contact information for those persons responsible for addressing complaints or violations regarding the WES, WEGF or MET Tower.
5. Ensure the Township possesses accurate, current information on the Owner of the WES, WEGF and/or MET Tower, including name, contact phone numbers, email addresses, street addresses, and place of business.

SECTION IV

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.

SECTION V

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.

SECTION VI

Effect on Other Ordinances. Except as expressly amended by this Ordinance, all other Bengal Township Ordinances shall remain unchanged and in full force and effect.

Roll call vote taken:

YEAS: _____

NAYS: _____

ABSTAIN/ABSENT: _____

ORDINANCE DECLARED ADOPTED.

CERTIFICATION

I hereby certify that:

1. The above is a true copy of Ordinance No. ____, adopted by the Bengal Township Board at a duly scheduled and noticed meeting of that Township Board held on _____, 2012, pursuant to the required statutory procedures.
2. A summary of Ordinance No. ____ was duly published in the _____ newspaper, a newspaper that circulates within Bengal Township, on _____, 2012.
3. Within 1 week after such publication, I recorded Ordinance No. ____ 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. ____ with the Clinton County Clerk on _____, 2012.

ATTESTED

Dated: _____, 2012
_____, Bengal Township Clerk

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