ARTICLE XXIII
WIND ENERGY SYSTEM (WES)

SECTION 23.01 PURPOSE

The purpose of this section is to establish standards and procedures by which the installation and operation of a WES shall be regulated within the Township, in order to promote the safe, effective, and efficient use of wind energy.

SECTION 23.02 DEFINITIONS

A. **Wind Energy System (WES) –** A land use for generating power by use of wind; utilizing use of a wind turbine generator and includes the turbine, blades, and tower as well as related electrical equipment. This does not include wiring to connect wind energy system to the grid. See also On Site Wind Energy System and Utility Grid Wind Energy System.

(Note: For purposes of this section a windmill traditionally used to pump water shall not be considered a Wind Energy System.)

B. **On Site Use Wind Energy System –** A land use for generating electric power from wind and is an accessory use that is intended to primarily serve the needs of the consumer at that site.

C. **Wind Farm –** Clusters of two or more WES placed upon a parcel or parcels with the intent to sell or provide electricity to a site or location other than the premises upon which the WES are located. The WES may or may not be owned by the owner of the property upon which the WES is placed.

D. **Utility Grid Wind Energy Systems –** A WES designed and constructed to provide electricity to the electric utility grid.

E. **Building Mounted WES –** A WES mounted or attached to building.

F. **Tower Mounted WES –** A WES mounted or attached to a tower, pole, or similar structure which is not a building.

G. **Interconnected WES –** A WES which is electrically connected to the local electrical power utility system and can provide power to the local electrical power utility system.

H. **WES Height –** The distance from the ground at normal grade and the highest point of the WES which is the tip of a rotor blade when the blade is in full vertical position.

I. **WES Setback –** The distance from the base of the tower or structure upon which the WES is mounted to the nearest lot line. In the case of multiple parcels utilized for multiple or single WES, the setbacks shall be taken from the outside boundary of the parcels utilized for the WES project.

J. **Nacelle -** In a wind turbine, the nacelle refers to the structure which houses all of the generating components, gearbox, drive train, and other components.

K. **Shadow Flicker –** Alternating changes in light intensity caused by the moving blade of a WES casting shadows on the ground and stationary objects such as dwellings.

L. **Applicant –** The person, firm, corporation, company, limited liability corporation or other entity which applies for Township approval under this section, as well as the applicant's successor(s), assign(s), and/or transferee(s) to any approved WES. An applicant must have the legal authority to represent and bind the landowner or lessee who will construct, own and operate the WES. The obligations regarding a zoning approval for any approved WES shall be with the land owner and the owner(s) of the WES and jointly and severally with the owner and operator or lessee of the WES if different than the owner.

SECTION 23.03 STANDARDS FOR ALL WIND ENERGY SYSTEMS

All WES applications shall require fees as established by the Township Board and submitted along with the Zoning Compliance Permit Application and comply with the following:

(1) Diagram – Applicant shall submit a Zoning Compliance Permit Application for approval which must provide a drawing with accurate measurements which would illustrate at a minimum the following:

(a) Height of the Wind Energy System.
(b) Property lines with dimension.
(c) Buildings on the site.
(d) Location of the Wind Energy System including any guy wires and distribution lines.
(e) Tower Safety Features.

(f) Size of rotor or blades.
(g) The setbacks from the property lines.

(2) Setbacks

(a) A tower mounted WES shall be set back from all lot lines a distance which is at least equal to 1.25 times the height of the WES as measured from the lot line to the base of the tower and no portion of the WES, including the guy wire anchors, shall be located within or above the required front, side, or rear yard setback.

(b) A building mounted WES shall have a distance from the nearest property line which is at least equal to 1.25 times the height of the WES as measured from the point of attachment to the structure or building to the top of the WES with the blade in the vertical position.

(3) Shared WES Usage – An On Site Use WES may provide electrical power to more than one dwelling unit, provided the dwelling units are located on property or properties that are adjacent to the property or properties on which the WES is located.

(4) Rotor or Blade Clearance

(a) Blade arcs created by a tower mounted WES shall have a minimum of 30 feet of clearance over and from any structure, adjoining property or tree.

(b) The blade arcs created by a building mounted WES shall have a minimum clearance of eight feet or be designed so the blade or other moving parts do not present a safety hazard.

(5) Lighting - Prohibited.

(6) Sound Pressure Level

(a) On Site Wind Energy systems shall not exceed 55 dB (A) at the property line closest to the WES. This sound pressure level may be exceeded during short-term events such as severe wind storms. If the ambient sound pressure level exceeds 55 dB (A), the standard shall be ambient dB (A) plus 5 dB (A).

(b) Utility Grid Wind Energy Systems and Wind Farms shall be measured at the property line closest to the WES at the outside boundary of all property used for the Utility Grid Wind Energy System. In addition, the applicant shall provide modeling and analysis that will demonstrate that the Utility Grid Wind Energy System or Wind Farm will not exceed the maximum permitted sound pressure.

(7) Shadow Flicker – The Planning Commission or Zoning Administrator may request that the applicant at their own expense perform an analysis of potential shadow flicker. The analysis shall identify locations of shadow flicker that may occur, and shall describe measures such as screening that shall be taken to eliminate or minimize the shadow flicker.

(8) Siting Standards and Visual Impact – The colors and surface treatment of the WES and supporting structures shall be non-obtrusive such as white, off white or gray. No part of the structure shall be used for signs or advertising.

(9) Construction Codes and Interconnection Standards

(i) All applicable state construction and electrical codes and local building permit requirements.
(ii) Federal Aviation Administration requirements.
(iii) The Michigan Airport Zoning Act, Pubic Act 23 of 1950, as amended.
(iv) The Michigan Tall Structures Act, Public Act 259 of 1959, as amended.
(v) Regulations for private landing strips in or adjacent to Fruitland Township.
(vi) The Michigan Public Service Commission and Federal Energy Regulatory Commission if the WES is an interconnected system.

(10) Environment – The Planning Commission or Zoning Administrator may request that the applicant at their own expense demonstrate compliance with all relevant Federal, State and Local Natural Resources and Environmental Laws.

(11) Safety

(i) Each WES shall be equipped with both a manual and automatic braking device capable of stopping the WES operation in high winds, or must be designed so that the rotational speed of the rotor blade does not exceed the design limits of the rotor.
(ii) To prevent unauthorized access, each WES excluding building mounted must comply with at least one of the following provisions, and more than one if required by the Planning Commission:

(1) Tower climbing apparatus shall not be located within 12 feet of the ground.
(2) A locked anti-climb device shall be installed and maintained.
(3) A tower capable of being climbed shall be enclosed by a locked, protective fence at least ten feet high.

(iii) All WES shall have lightning protection.

(iv) If a tower is supported by guy wires, the wires shall be clearly visible to height of at least 10 feet above the guy wire anchors

(v) The minimum height of the lowest position of the rotor or blade shall be at least 30 feet above the ground except for building mounted WES.

(12) Signs

(i) Each WES shall have one sign not to exceed two square feet posted at the base of the tower, or, if the structure is fenced, on the fence. The sign shall include the following information:

(1) The words "Warning: High Voltage
(2) Emergency phone numbers.
(3) Shutdown procedure as applicable.

(ii) A WES shall not include any advertising of any kind, except the nacelle may have lettering that exhibits the manufacturer's and/or owner's identification.

(13) Electromagnetic Interference – WES shall be designed, constructed and operated so as not to cause radio and television interference.

(14) Maintenance – WES must be kept and maintained in good repair and condition at all times and shall not pose a potential safety hazard.

(15) Distribution Lines – All distribution lines from the WES shall be located and maintained underground, both on the property where the WES will be located and off-site. The Planning Commission 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 Planning Commission determines that to install, place, or maintain such distribution lines underground would be impractical or unreasonably expensive.

SECTION 23.04 WIND ENERGY SYSTEMS ALLOWED AS A PERMITTED USE

Any On Site Use Wind Energy System which is 65 feet or less in total height and that meets all the other criteria of this section shall be a permitted use in all zoning districts, except that such WES shall not be allowed in lake or stream bottoms, and shall be subject to the following:

(1) The height of the WES with the blade in vertical position shall not exceed 65 feet. The WES shall not be operated or otherwise remain on property unless a permit has been issued by the Township as described herein.

(2) In order to obtain a permit, the applicant shall file a zoning application, pay the application fee and provide a copy of the manufacturer's installation instructions and any blueprints. At least 7 days prior to issuing a permit the Zoning Administrator shall send written notice of the application to the owners of all adjoining parcels. The Zoning Administrator shall inform the Planning Commission of the issuance of any permits and a summary of any comments received concerning the application or permit no later than the next regular Planning Commission meeting.

(3) Either the Zoning Administrator or other authorized agent of the Township shall review all the WES plans prior to issuance of a permit to determine that the proposed WES complies with requirements of this ordinance, any other applicable federal, state or local codes or requirements and also the manufacturer's installation instructions. In reviewing the plans, the Zoning Administrator shall have the right, but not the duty, to consult with the Planning Commission on compliance issues before making a decision. The WES as constructed shall be subject to a final inspection by the building inspector.

SECTION 23.05 WIND ENERGY SYSTEMS REQUIRING A SPECIAL LAND USE PERMIT

Any WES including a structure mounted WES which is greater than 65 feet in height may be allowed as a Special Land Use, in all zoning districts, except that such WES shall not be allowed in lake or stream bottoms, subject to the regulations and requirements of this Section and also the general special land use review procedures and standards of this Zoning Ordinance.