Chapter 1

SECTION 1.25 WIND ENERGY FACILITY SPECIAL USE DEFINITIONS

Alternative Energy – Renewable energy sources, such as wind, flowing water, solar energy and biomass, which create less environmental damage and pollution than fossil fuels, and offer an alternative to nonrenewable resources.

Ambient – Ambient is defined as the sound pressure level exceeded 90% of the time or L90.

ANSI – American National Standards Institute.

County Commissioners – The Gratiot County Board of Commissioners, Gratiot County Michigan.

County Zoned Townships – Shall mean Elba, Hamilton, Lafayette, Newark, North Star & Sumner.

db(A) – The sound pressure level in decibels. Refers to the "a" weighted scale defined by ANSI. A method for weighting the frequency spectrum to mimic the human ear.

Decibel – The unit of measure used to express the magnitude of sound pressure and sound intensity.

FAA – The Federal Aviation Administration.

Hub Height – When referring to a Wind Energy System, the distance measured from ground level to the center of the turbine hub.

Hub height is defined as the height from the Ground Level (GL) at which the hub of the windmill or the hub of the propeller blades of the wind energy generator is situated.

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

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

Met Tower – A meteorological tower used for the measurement of wind speed.

Michigan Tall Structure Act (M.C.L. 259.481 and following) – Governs the height of structures in proximity to airport related uses and is included as a standard in the Article by reference.

Habitable Structure – Any structure usable for living or business purposes, which includes but is not limited to working, sleeping, eating, cooking, recreation, office, office storage, or any combination thereof. An area used only for storage incidental to a residential use, is not included in this definition.

Non-Participating Parcel – Any parcel of property in the County not within the Wind Energy Overlay District.

On Site Use Wind Energy Systems – This system is intended to primarily serve the needs of the consumer, and is considered an accessory building.

Planning Commission – The Gratiot County Planning Commission.

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.

SCADA Tower – 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.

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 window in a dwelling.

Sound Pressure – 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.

Sound Pressure Level – The sound pressure mapped to a logarithmic scale and reported in decibels (dB).

Tip Height – When referring to a Wind Energy System, the distance measured from ground level to the furthest vertical extension of the rotor.

Utility Grid Wind Energy Systems – This system is designed and built to provide electricity to the electric utility grid.

Wind Energy Conversion Facility, (WECF) or Wind Energy Facility – An electricity generating facility consisting of one or more 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 off-site customers.

Wind Energy Facility Site Permit – A permit issued upon compliance with the standards enunciated in this Section

Wind Energy Overlay District – Districts created by the Gratiot County Board of Commissioners upon receiving a recommendation from the Planning Commission, by identifying specific areas within the County best situated for development of wind energy facilities. This District will be defined by the Gratiot County Wind Energy Overlay District Map, as approved by the Gratiot County Planning Commission.

Wind Energy Overlay District Map – This will be a Map showing the areas that are considered to be acceptable siting locations for Wind Energy Facilities. This overlay Map will be created and approved by the Gratiot County Planning Commission. This Map will also include exclusionary zones that are considered to be unsuitable for location of these facilities.

Wind Energy System – A 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 as related electrical equipment. This does not include wiring to connect the wind energy system to the 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 syste*m.*

Chapter 14

SECTION 14.4 SITE PLAN REVIEW

D. Wind Energy Facility Special Use Site Plan Review Required

1. Wind Energy Conversion Facilities shall not be located, constructed, erected, altered, or used without first obtaining a Wind Energy Facilities Permit pursuant to this Section. The wind Energy Facilities Site Plan must be reviewed and approved by the Planning Commission pursuant to standards contained herein. An applicant proposing a Wind Energy Facility must submit the following site plan materials:

a. Company contact information (telephone numbers and e-mail addresses), including name of company, name of project, key company contacts with titles, EIN (Employer Identification Number)

b. A narrative describing the proposed Wind Energy Facility, including an overview of the project

c. Site plan (GIS shape file overlay, electronic file and paper copy) of the property showing existing and proposed features such as buildings, structures, roads (right of ways), applicable utility easements, county drains, land use, zoning district, ownership of property, location of proposed turbine towers (with required setbacks, exclusion zones and non-participating properties), underground and overhead wiring (including depth underground), access roads (including width), substations and accessory structures

d. Details or drawings shall show features in the design of a typical tower and its base, that upon removal of said tower will allow restoration of the soil at the site to a depth of 4 feet pursuant to Chapter 16 Section 7.

e. Anticipated construction date and anticipated completion date

f. The lessor must acknowledge the fact in writing that the decommissioning process poses some risk of the concrete bases remaining in place, if the responsible party (lessee) was unable to properly remove the bases as required in this ordinance. This acknowledgement is to be submitted with the application package and can be in the form of the actual lease language that has been signed by the lessor or an "Acknowledgement Letter" that documents this understanding and has been signed by the lessor.

g. The applicant shall post a performance bond or equivalent financial instrument for decommissioning. The bond shall be in favor of Gratiot County and may be provided jointly as a single instrument for multiple Townships within a single wind farm, provided that any such single instrument shall be an amount of at least $1 million and shall contain a replenishment obligation.

2. Application Material. The following shall be included and/or be utilized as standards when preparing, submitting and reviewing an application for a Wind Energy Facility.

a. Applicant shall show evidence of compliance with applicable statutes and County ordinances including, but not limited to:

i. Part 31 Water Resources Protection (M.C.L.324.3101 et seq.),
ii. Part 91 Soil Erosion and Sedimentation Control (M.C.L. 324.9101 et seq.), and the corresponding County ordinance.
iii. Part 301 Inland Lakes and Streams (M.C.L. 324.30101 et seq.),
iv. Part 303 Wetlands (M.C.L. 324.30301 et seq.),
v. All other applicable laws and rules in force at the time of Application

b. *Visual Appearance, Lighting, Power lines*. The applicant shall use measures to reduce the visual impact of wind turbines to the extent possible, utilizing the following:

i. Wind turbines shall be mounted on tubular towers, painted a non-reflective, non-obtrusive color. The appearance of turbines, towers and buildings shall be maintained throughout the life of the wind energy facility (i.e., condition of paint, signs, landscaping, etc).

ii. Wind turbines and meteorological towers shall not be artificially lighted, except to the extent required by the FAA or other applicable authority, or otherwise necessary for the reasonable safety and security thereof.

iii. Wind turbines shall not be used for displaying any advertising except for reasonable identification of the manufacturer or operator of the Wind Energy Facility.

iv. The electrical collection system shall be placed underground at a depth designed to accommodate the existing agricultural land use to the maximum extent practicable. The collection system may be placed

overhead from substations to points of interconnection to the electric grid or in other areas as necessary.

3. Setbacks, Separation and Security. The following setbacks and separation requirements shall apply to all wind turbines within a Wind Energy Facility.

a. Occupied Buildings: Each wind turbine shall be set back from the nearest residence, school, hospital, church or public library, or any other occupied buildings a distance no less than the greater of (a) two (2) times its Hub Height, or (b) one thousand (1,000) feet.

b. Shadow flicker minimization: Wind turbines shall be placed such that shadow flicker to any occupied buildings occurs no more than 30 hours per year.

c. Property line setbacks: Except a set forth in this section, wind turbins shall not be subject to a property line setback. Wind turbines and access roads shall be located so as to minimize the disruption to agricultural activity and, therefore, the location of towers and access routes is encouraged along internal property lines. Wind turbines shall not be located within 1.5 times Hub Height of the property line of a Non-Participating Parcel.

d. Boundaries with non participating parcels: Wind turbins shall not be located within 1.5 times Hub Height of the property line of a non-participating parcel.

e. Public roads: Each wind turbine shall be set back from the nearest public road a distance no less than 400 feet or 1.5 times its Hub Height, whichever is greater, determined at the nearest boundary of the underlying right-of-way for such public road.

f. Railroads & "Rails to Trails": Each wind turbine shall be set back from the nearest Railroad or "Rails to Trails" a distance no less than 400 feet or 1.5 times its Hub Height, whichever is greater, determined at the nearest boundary of the underlying right-of-way for such Railroad & Rails to Trails".

4. Compliance with Wind Energy Site Permit: Following the completion of constructions, the applicant shall certify that all construction is completed pursuant to the Wind Energy Site Permit. (GIS overlay)

5. Wind Turbine/Tower Height: The applicant shall demonstrate compliance with the Michigan Tall Structure Act (MCL 259.481 and following), FAA guidelines, and local airport zoning as part of the approval process.

6. Noise: Wind Energy Facilities shall not exceed 55 db(A) at the habitable structure closest to the wind energy system. This sound pressure level may be exceeded during short-term events such as utility outages and/or severe wind storms. If the ambient sound pressure level exceeds 55 dB(A), the standard shall be ambient dB(A) plus 5 dB(A).

7. Minimum Ground Clearance: The blade tip of any Wind turbine shall, at its lowest point, have ground clearance of not less than seventy five (75) feet.

8. Signal Interference: No large scale Wind Energy Facility shall be installed in any location where its proximity with existing fixed broadcast, retransmission, or reception antennas for television, radio, or wireless phone or other personal communication systems would produce electromagnetic interference with signal transmission or reception.

9. Safety

a. All collection system wiring shall comply with all applicable safety and stray voltage standards.

b. Wind turbine towers shall not be climbable on the exterior.

c. All access doors to wind turbine towers and electrical equipment shall be lockable.

d. Appropriate warning signs shall be placed on wind turbine towers, electrical equipment, and Wind Energy Facility entrances.

e. Appropriate signage for emergency contact information shall be located at the wind turbine tower.

10. Transportation: Submit a copy of a proposed transportation plan to be used by construction and delivery vehicles. Approval of appropriate authorities required prior to construction;

2.1 Application Fee. An applicant for a Wind Energy Facility shall remit a fee in the amount specified in the approved schedule adopted by resolution of the County Board of Commissioners. This schedule shall be based on the cost to the County of the review, which may be adjusted from time to time.

Chapter 16

SECTION 16.7 SPECIFIC LAND USE STANDARDS

QQ. Wind Energy Facility

1. Wind Energy Facility Special Use Purpose and Intent

The purpose of this Article is to provide a regulatory scheme for the designation of properties suitable for the location, construction and operation of Wind Energy Conversion Facilities (Wind Energy Facilities) in Gratiot County, in an effort 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. A Wind Energy Facility Overlay District shall be considered a map amendment, wherein lands so classified shall become pre-qualified for a Wind Energy Facility with construction of such facility approved pursuant to Chapter 14 Wind Energy Facility Site Plan review portion of the Gratiot County Zoning Ordinance. It is further recognized that a Wind Energy Facility Overlay District is intended as an agricultural preservation measure. This shall be applicable for wind turbines with a total height greater than 200 feet.

2. Regulatory Framework

2.1 Zoning

A Wind Energy Facility may be constructed on land that is within a Wind Energy Facility Overlay District on the official zoning map for the County, subject to provisions and standards of the Zoning Ordinance, Wind Energy Facility Site Plan Review and other appropriate Approvals.

2.2 Principal or Accessory Use

A Wind Energy Facility and related accessory uses may be considered either principal or accessory uses. A different existing use or an existing structure on the same parcel shall not preclude the installation of a Wind Energy Facility or a part of such facility on such parcel. Wind Energy Facilities that are constructed and installed in accordance with the provisions of this Section shall not be

deemed to constitute the expansion of a non-conforming use or structure. Wind Energy Facilities shall be reviewed and approved pursuant to the Zoning Ordinance.

2.3 Overlay District

After designation as a Wind Energy Overlay District, new uses within the "overlay" area shall be limited to those uses identified within the applicable zoning district and Wind Energy Facilities, subject to any additional standards of this Section.

3. APPLICABILITY

The requirements in this ordinance shall apply to all Wind Energy Conversion Facilities, which shall be permitted as a special use in a Wind Energy Facility's Overlay District. Wind Energy Facilities Site Plan Review standards shall be used when reviewing any application for a wind energy facility.

4. CERTIFICATION

Any approval for Wind Energy Facilities shall require the applicant to provide a post-construction certification that the project complies with applicable codes and industry practices. Applicant shall provide as-built GIS shape file, electronic file, and paper site plan.

5. INSPECTIONS

The applicant's maintenance and inspection records shall be generated annually and are subject to audit by the County. Inspection Reports shall contain current contact information and be updated whenever the contact information changes.

6. DECOMMISSIONING

The applicant shall post a performance bond or equivalent financial instrument for decommissioning. The bond shall be in favor of Gratiot County and may be provided jointly as a single instrument for multiple Townships within a single wind farm, provided that any such single instrument shall be in an amount of at least $1 million and shall contain a replenishment obligation

The applicant shall submit a plan describing the intended disposition of the alternative energy project at the end of its useful life and shall describe any agreement with the landowner regarding equipment removal upon termination of the lease. Within 12 months of any tower or turbine not operating, the applicant/owner must submit a plan to the Township concerning the status of the wind power project and steps that shall be taken to either decommission the tower or turbine, or to achieve renewed Commercial Operation. Any tower/turbine left unused or inoperable for over 24 months would be

deemed to be disposed of by developer/applicant. The land must be returned to its original state. Concrete bases will be removed four feet below ground level with appropriate drainage and filled with like soil that was removed.