

**1AN ORDINANCE OF THE TOWNSHIP OF GREENWICH
ESTABLISHING REGULATIONS FOR SMALL WIND ENERGY SYSTEMS
AND SOLAR ENERGY SYSTEMS**

ORDINANCE NO. 17 - 2011

BE IT ORDAINED BY THE MAYOR AND COUNCIL OF THE TOWNSHIP OF GREENWICH

AS FOLLOWS:

Section 1. Purpose

The Planning/Zoning Board has recommended the adoption of an Ordinance regulating wind mills and solar energy systems per Resolution #2010-17. This is for the purpose of promoting the safe, effective and efficient use of small wind energy systems and solar energy systems to reduce the on-site consumption of utility-supplied electricity. This Ordinance includes changes and recommendations from Construction Code Official, Robert DeAngelo and Tim Kernan, Professional Engineer;

The Township of Greenwich finds that:

1. Wind and solar energy are abundant, renewable, and nonpolluting energy resources;
2. Converting wind and solar energy to electricity will reduce our dependence on nonrenewable energy resources, and decrease the air and water pollution that results from the use of conventional energy sources;
3. Distributed small wind and solar energy systems will also enhance the reliability and power quality of the power grid, reduce peak power demands, and help diversify the State's energy supply portfolio; and
4. Small wind and solar energy systems make the electricity supply market more competitive by promoting customer choice; and

5. A wind and solar energy system will provide power for the principal use of the property whereon said system is to be located and shall not be for the generation of power for commercial purposes, although this provision shall not be interpreted to prohibit the sale of excess power generated from time to time from wind or solar energy system designed to meet the energy needs of the principal use. For the purposes of this subsection, the sale of excess power shall be limited so that in no event an energy system is generating more energy for sale than what is otherwise necessary to power the principal use on the property; and
6. Wind and solar energy systems shall only be permitted as an accessory use on the same lot or on an adjacent lot owned by the same owner as the principal use; and
7. Applicability of section. This section shall apply to systems intended for the provision of the electrical or mechanical power needs of the owner/operator of the system; also, such a system shall be for one main building and its accessory buildings only. For systems intended for uses other than the ones stated, the Planning Board approval shall be required. Said approval shall cover the location of the system (shown on a survey of the property).

Section 2. New Jersey's Renewable Portfolio Standards (RPS) require each supplier/provider, as defined at *N.J.A.C. 14:8-1.2*, that sells electricity to retail customers in New Jersey to provide a percentage of their retail electricity sales from renewable energy sources, beginning at 3.5 percent in 2004 and increasing to 22.5 percent by 2021; and

Existing local zoning regulations do not address wind or solar power, which while not intended to discourage the installation of small wind turbines or solar panels, can substantially increase the time and costs required to obtain necessary local land-use permits; and

All energy systems require approval from the Zoning Officer and Construction Office prior to installation. Applications for an energy systems shall include information demonstrating compliance with the provisions of this subsection. In the event that the Zoning Officer or Construction Office does not believe the provisions of this subsection will be satisfied, an applicant may request a variance.

Section 3. There is hereby established “THE SMALL WIND ENERGY SYSTEM AND SOLAR ENERGY ORDINANCE” to standardize and streamline the requirements for small wind and solar energy systems so that this clean, renewable energy resource can be utilized in a cost-effective and timely manner in the Township of Greenwich; and

Section 4. Definitions:

In this ordinance:

1. “Administrator” means the Greenwich Township Zoning Officer.
2. “Board” means the Greenwich Township or other Authority Having Jurisdiction.
3. “Meteorological tower” or “met tower” means a structure designed to support the gathering of wind energy resource data, and includes the tower, base plate, anchors, guy cables and hardware, anemometers (wind speed indicators), wind direction vanes, booms to hold equipment anemometers and vanes, data logger, instrument wiring, and any telemetry devices that are used to monitor or transmit wind speed and wind flow

characteristics over a period of time for either instantaneous wind information or to characterize the wind resource at a given location.

4. “Owner” shall mean the individual or entity that intends to own and operate the small wind energy system in accordance with this ordinance.
5. “Rotor diameter” means the cross sectional dimension of the circle swept by the rotating blades of a wind-powered energy generator.
6. “Small wind energy system” means a wind energy system, as defined in this section, that
 - a. is used to generate electricity; and
 - b. has a nameplate capacity of 100 kilowatts or less.
7. “Total height” means, in relation to a wind energy system, the vertical distance from the ground to the tip of a wind generator blade when the tip is at its highest point.
8. “Tower” means a monopole, freestanding, or guyed structure that supports a wind generator.
9. “Wind energy system” means a wind generator and all associated equipment, including any base, blade, foundation, nacelle, rotor, tower transformer, vane, wire, inverter, batteries or other component necessary to fully utilize the wind generator.
10. “Generator” means equipment that converts energy from the wind and solar into electricity. This term includes all associated mechanical and electrical conversion components necessary to generate, store and/or transfer energy.
11. “Solar energy system” means a solar generator and all associated equipment, including any base, foundation, structural support, wire, batteries or other components necessary to fully utilize the solar generator.

Section 5. Standards:

1. A small wind energy system shall be a permitted use in all zones, as an “accessory structure”, subject to the following requirements:
 - a. Minimum lot size. One-half (1/2) acre seems provided the lot size conforms to the height requirements below.
 - b. Minimum setbacks. For lots between one-half (1/2) acre and three acres, wind turbines shall be set back from all property lines a distance equal to 100% of the height of the structure including the blades. For lots larger than three acres, wind turbines shall be set back from all property lines a distance equal to 100% of the height of the structure including the blades. No portion of the wind generator shall extend beyond any overhead utility lines, unless written permission is granted by the utility that owns and/or controls the lines.
 - c. Wind turbines shall not be permitted in any front yard.
 - d. Maximum height. Freestanding wind turbines shall not exceed a height of 50 feet on one-half (1/2) acre lots and 80 feet on lots between one acre and three acres. On lots of three acres or more, a maximum height of 150 feet is permitted. The maximum height shall include the height of the blades at its highest point.
 - e. No more than one wind turbine shall be permitted per property.
 - f. Wind turbines shall not be permitted as a rooftop installation.
 - g. Wind turbines on residential properties shall have a nameplate capacity of 100

kilowatts or less.

- h. Noise. All wind energy systems shall comply with the following:
 - i. Between any use or zone, sound levels of the wind energy system shall not exceed 30 dBA at a common property line or 30 dBA to the closest occupied structure, whichever is most restrictive.
 - ii. These levels may be exceeded during short-term events such as utility outages and/or severe windstorms.
 - iii. Wind turbines shall be designed with an automatic brake or other similar device to prevent overspeeding and excessive pressure on the tower structure.
- i. Wind energy systems shall not be artificially lighted, except to the extent required by the FAA or other applicable authority.
- j. All ground-mounted electrical and control equipment shall be labeled and secured to prevent unauthorized access.
- k. The tower shall be designed and installed so as not to provide step bolts, a ladder, or other publicly accessible means of climbing the tower for a minimum height of fifteen feet above the ground.
- l. All moving parts of the wind energy system shall be a minimum of 20 feet above ground level.
- m. The blades on the wind energy system shall be constructed of a corrosive-resistant material.
- n. All guy wires or any part of the wind energy system shall be located on the same lot as the energy system.

2. Solar energy systems.

- a. Solar panels shall be permitted as a rooftop installation in any zoning district. The solar panels shall not exceed a height of eight inches from the rooftop. In no event shall the placement of the solar panels result in a total height including building and panels than what is permitted in the zoning district which they are located for the principal building. Exposed hardware, supporting structures, frames and piping shall be finished in nonreflective surfaces and, if mounted, compatible with the color scheme of the roof.
- b. Solar panels shall be permitted as ground arrays in accordance with the following:
 - i. All ground arrays shall be set back a distance of 20 feet from all property lines in a residential zoning district or in conformance with the bulk standards for accessory structures in commercial districts as provided herein.
 - ii. Ground arrays shall not be permitted in a front yard.
 - iii. Ground arrays shall be located so that any glare is directed away from an adjoining property.
 - iv. Ground arrays shall not exceed a height of 10 feet.
 - v. Exposed hardware, supporting structures, frames and piping shall be finished in nonreflective surfaces.

3. Wind and solar energy systems shall not be used for displaying any advertising except for reasonable identification of the manufacturer or operator of the system. In no case shall any identification be visible from a property line.

4. The design of wind or solar energy systems shall, to the extent reasonably possible, use materials, colors, textures, screening and landscaping that will blend into the natural setting and existing environment.

5. Appearance, Color, and Finish. The wind generator and the tower shall remain painted or finished in the color or finish that was originally applied by the manufacturer, unless a different color or finish is approved by the Administrator.

6. All applications for a wind or solar energy system shall conform to any landscaping requirements of the Greenwich Township Ordinances. Any trees and/or shrubs to be removed to accommodate the installation of a wind or solar energy system shall be accompanied by a plan

demonstrating the need to remove the trees and replacement of the trees. An applicant shall locate a wind or solar energy system so that tree removal is not required to the extent practical.

7. The installation of a wind or solar energy system shall conform to the National Electric Code as adopted by the NJ Department of Community Affairs.

8. The installation of a wind or solar energy system is subject to all utility provider (for that area) requirements for interconnection.

9. Signs. There shall be no signs that are visible from any public road posted on a small wind generator system or any associated building, except for the manufacturers or installer's identification, appropriate warning signs, or owner identification.

10. Utility notifications and interconnection. Small wind energy and solar systems that connect to the electric utility shall comply with the New Jersey's Net Metering and Interconnection Standards for Class I Renewable Energy Systems at *NJAC 14:4-9*.

11. Met Towers. A met tower shall be permitted under the same standards, permit requirements, restoration requirements and permit procedures as a small wind energy system.

12. Standards for and regulation of small wind energy systems.

- a. Construction. Tower construction shall be in accordance with the appropriate sections of the Basic Building Code as adopted by the State of New Jersey, and any future amendments and/or revisions to same.
- b. Electromagnetic interference (EMI). Wind energy conversion system generators and alternators shall be filtered and/or shielded so as to prevent the emission of radio frequency energy which would cause any harmful interference with radio, television broadcasting or reception, telephone and/or wireless

telecommunications and shall comply with the provisions of Section 47 of the Federal Code of Regulations, Part 15 and subsequent revisions governing said emissions.

- c. The structural design shall be signed and sealed by a professional engineer, registered in the State of New Jersey, certifying that the structural design complies with all of the standards set forth for safety and stability in all applicable codes then in effect in the State of New Jersey and all sections referred to hereinabove. The support tower shall be designed to survive a wind of 120 mph with a three second, 140 mph gust.

The design calculations shall include a soil boring at the tower location and a soils analysis. If the soils of the site are not satisfactory for the intended construction, the plans shall be designed to eliminate or overcome the poor soils conditions.

Labeling requirements. A minimum of one sign shall be posted near ground level on the tower structure warning of high voltage. In addition, the following information shall be posted on a label or labels on the generator or alternator of the small wind energy system:

- i. The maximum power output of the system and the wind speed at which it is achieved.
- ii. Nominal voltage and maximum current.
- iii. Manufacturer's name and address, serial number and model number.
- iv. Maximum survival wind speed and the emergency and normal shutdown procedures.

- d. Utility company notification. The utility company for the area in question shall be notified in writing of any proposed interface with that company's grid prior to installing

such interface and shall conform to any legislated requirements governing installations of wind energy conversion systems so as to comply with the Utility Tariff specifications.

- e. Safety. The wind energy conversion system manufacturers shall document that the wind energy conversion system model has operated safely in atmospheric conditions for a period of not less than three months and has provided energy not less than the equivalent of 25% of its predicted annual energy output under a twelve-mile-per-hour annual wind regime.

Section 6. Miscellaneous:

- a. All electric lines/utility wires shall be buried under ground.
- b. Any mechanical equipment associated with and necessary for operation, including a building for batteries and storage cells, shall be enclosed with a six-foot high fence. The supporting tower shall also be enclosed with a six-foot high fence unless the base of the tower is not climbable for a distance of 12 feet.
- c. When a building is necessary for storage cells or related mechanical equipment, the building may not exceed 140 square feet in area nor eight feet in height and must be located at least the number of feet equal to the height of the tower from any property line.
- d. Must meet Hazard Flood Ordinance, Chapter 89, if applicable.

Section 7. Abandonment:

- a. A small wind energy system or ground array(s) solar energy system that is out-of-service for a continuous 12-month period will be deemed to have been abandoned.

- b. The Administrator may issue a Notice of Abandonment to the Owner of a small wind energy or ground array solar energy system that is deemed to have been abandoned. The notice shall be sent return receipt requested.
- c. The Owner shall have the right to respond to the Notice of Abandonment within 30 days from Notice Receipt date.
- d. If the Owner provides information that demonstrates the small wind energy or ground array solar energy system has not been abandoned, the Administrator shall withdraw the Notice of Abandonment and notify the Owner that the Notice has been withdrawn.
- e. If the Administrator determines that the small wind energy or ground array solar energy system has been abandoned, the Owner of the energy system shall remove the facility in its entirety at the Owner's sole expense within six months after the Owner received the Notice of Abandonment.
- f. When an Owner of a wind or solar energy system has been notified to remove same and has not done so six months after receiving said notice, then the Administrator may remove such system and place a lien upon the property for the cost of the removal. If removed by the Owner, a demolition permit shall be obtained and the facility shall be removed. Upon removal, the site shall be cleaned, restored and revegetated to blend with the existing surrounding vegetation at the time of abandonment.

Section 8. Permit Requirements:

- a. Permit. A zoning permit shall be required for the installation of a small wind energy and/or solar energy system.

- b. An Owner shall submit an application to the Zoning Administrator for a zoning permit for a small wind energy and/or solar energy system.
- c. Documents: The zoning permit application shall be accompanied by a plot plan which includes the following:
 - i. Property lines and physical dimensions of the property;
 - ii. Location, dimension, and types of existing major structures on the property;
 - iii. Location, dimension, and type of the proposed energy system;
 - iv. The right-of-way of any public road that is contiguous with the property;
 - v. Any overhead utility lines; and
 - vi. Small wind energy system specification, including manufacturer and model, rotor diameter, tower height, tower type (freestanding or guyed).

Section 9. Zoning Permit Procedure:

- a. The Zoning Administrator shall issue a permit or deny the application within one month as consistent with Municipal Land Use Law of the date on which the application is received.
 - i. The following Permit Fees shall be paid when permit is issued :
 - (1) Rooftop Solar Installation - \$50
 - (2) Wind/Ground Solar Installation - \$100
- b. If the application is approved, the Zoning Administrator will return one signed copy of the application with the zoning permit and retain the other copy with the application.
- c. If the application is rejected, the Zoning Administrator will notify the applicant in writing and provide a written statement of the reason why the application was rejected. The applicant may appeal the Zoning Administrator's decision pursuant to the **Greenwich Township Combined Planning/Zoning Board**. The applicant may reapply if the

deficiencies specified by the Zoning Administrator are resolved.

- d. Fees for Planning/Zoning Board. The application for a minor or major site plan for a wind energy and/or solar energy system must be accompanied by the fee required.
 - i. Wind/Ground Based Solar Installation with Major Site Plan.
 - (1) A nonrefundable application fee in the amount of \$500 shall be submitted with the application.
 - (2) An escrow deposit to be applied toward engineering, planning and legal costs in connection, with the Planning Board approval process shall be made in the amount of \$1,200.
 - ii. Wind/Ground Based Solar in connection with Minor Site Plan.
 - (1) A nonrefundable application fee in the amount of \$250 shall be submitted with the application.
 - (2) An escrow deposit to be applied toward engineering, planning and legal costs in connection, with the Planning Board approval process shall be made in the amount of \$1,200.
- e. Expiration. A permit issued pursuant to this ordinance shall expire if:
 - i. The energy system is not installed and functioning within 24 months from the date the permit is issued; or
 - ii. The energy system is out of service or otherwise unused for a continuous 12-month period.

Section 10. Violations:

- a. It is unlawful for any person to construct, install, or operate a small wind and/or solar energy system that is not in compliance with this ordinance.
- b. Small wind and/or solar energy systems installed prior to the adoption of this ordinance are exempt from the requirements of this ordinance, except for the provisions regarding abandonment.

Section 11. Administrative and Enforcement:

- a. This ordinance shall be administered by the Administrator or other official as designated.
- b. The Administrator may enter any property for which a permit has been issued under this ordinance to conduct an inspection to determine whether the conditions stated in the permit have been met.
- c. The Administrator may issue orders to abate any violation of this ordinance.
- d. The Administrator may issue a citation for any violation of this ordinance.
- e. The Administrator may refer any violation of this ordinance to legal counsel for enforcement.

Section 12. Penalties:

- a. Any person who fails to comply with any provision of this ordinance shall be subject to enforcement and penalties as stipulated in chapter and section of the appropriate zoning code.
- b. Nothing in this section shall be construed to prevent the Mayor and Council of Greenwich Township from using any other lawful means to enforce this ordinance.

Section 13. Severability:

The provisions of this ordinance are severable, and the invalidity of any section, subdivision, paragraph or other part of this ordinance shall not affect the validity or effectiveness of the remainder of the ordinance.

Section 14. Effective:

This Ordinance shall take effect twenty (20) days after adoption and publication as required by law. Introduced at a regular meeting of the Mayor and Council of the Township of Greenwich held on the 15th day of August, 2011 and passed upon a second reading of the Mayor and Council held on the 19th day of September, 2011.

ATTEST:

TOWNSHIP OF GREENWICH

LORI L. BIERMANN,

Municipal Clerk

GEORGE W. SHIVERY, JR.,

Mayor

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