



TOWN OF BROOKFIELD

BROOKFIELD, CT 06804

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**TOWN OF BETHEL
TOWN CLERK**

July 1, 2009

Town Clerk - Town of Bethel
1 School Street
Bethel, CT 06801

Dear Sir/Madam,

Re: Proposed Zoning Regulation Changes, Section 242-313 "Small Wind Turbine Generating Systems"

In accordance with CGS 8-7 D. (f), notice is hereby given that the Brookfield Zoning Commission is considering the above referenced Zoning Regulation changes. The changes consists of the following elements:

Amend the zoning regulations to ADD the following:

- a) Add new Section 242-313, "Small Wind Turbine Generating System Regulations"
- b) Add to Section 202 "Definitions" - "Small Wind Turbine Generating Systems"
- c) Add Small Wind Turbine Generating Systems as a permitted use in Section 242-401 B. "Other Permitted Uses" in Residential Districts and Section 242-501, Table I, "Utility Permitted Uses, Commercial and Industrial Districts.

A copy of the proposed regulation change is attached. The public hearing on this matter is scheduled for AUGUST 27, 2009 at 8:00 PM at Town Hall. Please contact me if you require any additional information.

Very truly yours,

BROOKFIELD ZONING COMMISSION

W. E. Schappert
Zoning Enforcement Officer

Attachments: Proposed Zoning Regulation Change

242 Small Wind Energy Systems

A. Purpose:

The purpose of this section is to accommodate distributed generation/small wind energy systems whose primary purpose is to supply power to the structures or facilities located on the same lot, while minimizing any adverse visual, safety and environmental impacts of the system. Distributed generation/small wind energy systems whose primary purpose is to generate power for commercial purposes or augment the supply of power to utilities are prohibited in the Town of Brookfield.

In addition, this section provides a permitting process for small wind energy systems to ensure compliance with the provisions of the requirements and standards established herein.

The regulations and permitting process are the same for all zones in the Town of Brookfield.

B. Definitions:

Fall zone: The potential fall area for the small wind energy system. It is measure by using 110% of the total height as the radius around the center point of the base of the tower.

Flicker: The moving shadow created by the sun shining on the rotating blades of the wind turbine.

Meteorological tower (met tower): Includes the tower, base plate, anchors, guy wires and hardware, anemometers (wind speed indicators), wind direction vanes, booms to hold equipment for anemometers and vanes, data loggers, 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.

Net metering: The difference between the electricity supplied over the electric distribution system and the electricity generated by the small wind energy system which is fed back into the electric distribution system over a billing period.

Neighbors/Adjoining Property owner Notification : A letter sent by the applicant via certified mail to each property owner notifying them of the intent to apply for a Design Review for a Small Wind Energy Systems

Power grid: The transmission system, created to balance the supply and demand of electricity for consumers

Shadow: The outline created on the surrounding area by the sun shining on the small wind energy system.

Small wind energy system: A wind energy conversion system consisting of a wind turbine, a tower, and associated control or conversion electronics, which has a rated capacity of 60 kilowatts or less and will be used primarily for onsite consumption.

Tower: The monopole or guyed monopole structure that supports a wind turbine.

Total height: The vertical distance from ground level to the tip of the wind turbine blade when it is at its highest point.

Tower height: The height above grade of the fixed portion of the tower, excluding the wind turbine.

Wind turbine: The blades and associated mechanical and electrical conversion components mounted on top of the tower whose purpose is to convert kinetic energy of the wind into rotational energy used to generate electricity.

C. Applicability:

1. Small Wind Energy System: Small wind energy systems shall be permitted under a use permit in all Zones where structures of any sort are allowed.

2. Approval: No small wind energy system shall be erected, constructed, installed or modified without first receiving a conditional use permit from the Zoning Commission..

D. Procedure for Review:

1. Use Permit: A small wind energy system shall be subject to receiving a use permit prior to installation or modification thereof. The issuance of a conditional use permit shall abide with the following requirements:

a. Building Permit: A building permit shall be required for the installation or modification of a small wind energy system. This application may be submitted after Zoning Approval.

b. Public Hearing : Prior to issuance of a building permit, a site plan shall be submitted to the Zoning Commission who will conduct a public Hearing. The applicant shall follow the procedural requirements of the site plan Design Review regulations, section 242. The site plan shall include the following:

i) Property lines and physical dimensions of the applicant's property drawn to scale, including names of adjoining property owners.

ii) Location, dimensions, and types of existing major structures on the property shown to scale

iii) Location of the proposed small wind energy system, foundations, guy anchors and associated equipment

iv) Setback requirements as outlined in this ordinance.

v) The right-of-way of any public road that is contiguous with the property.

vi) Any overhead utility lines.

vii) Small wind energy system specifications, including manufacturer, model, rotor diameter, tower height, tower type (freestanding or guyed).

viii) If the small wind energy system will be connected to the power grid, documentation shall be provided regarding the notification of the intent with the utility regarding the applicant's installation of a small wind energy system.

ix) Tower foundation blueprints or drawings.

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xi) Sound level analysis prepared by the wind turbine manufacturer or qualified engineer.

xii) Confirmation that the manner of installation will conform to the National Electrical Code (usually provided by the manufacturer).

- xiii) Estimated costs of physically removing the small wind energy system to comply with surety standards.
- xiv) Evidence of compliance or non-applicability with Federal Aviation Administration requirements.
- xv) The site plan must be stamped by a professional engineer licensed to practice in the state of Connecticut .

Additionally the Application will include :

- xvi) Documentation describing the containment plan for ice that may accumulate on the turbine surfaces such that the ice will not become a hazard.
- xvii) Copies of certified mail receipts and copy of the **Neighbors/Adjoining Property Owner Notification**

E. Conditional Use Permit Standards:

1. Through the Design Review process, the small wind energy system shall be evaluated for compliance to the following standards;

a. Setbacks:

- i) Small wind energy system shall³ be set back a distance equal to 110% of the total height from:
 - A) Any public road right-of-way, unless written permission is granted by the governmental entity with jurisdiction over the road.
 - B) Any overhead utility lines.
 - C) All property lines, unless the affected land owner provides written permission through a recorded easement allowing the small wind energy system's fall zone to overlap with the abutting property.
 - D) Any travel ways to include but not be limited to driveways, parking lots, nature trails or sidewalks.
- ii) ~~If an abutting landowner disapproves of the proposed small wind energy system, the said system shall be set back a distance equal to 220% of the total height from all property lines.~~

- iii) Small wind energy systems must meet all setbacks for principal structures for the zoni district in which the system is located.
- iv) The setback shall be measured to the center of the tower's base.
- v) Guy wires used to support the tower are exempt from the small wind energy system setback requirements.

b. Tower:

- i) Wind turbines may only be attached to freestanding or guy wired monopole towers. Lattice towers are explicitly prohibited.
- ii) The tower height shall not exceed ~~150~~ 80 feet.
- iii) The applicant shall provide evidence that the proposed tower height does not exceed the height recommended by the manufacturer of the wind turbine.

c. Sound Level: The small wind energy system shall not exceed 60 decibels using the A scale (dBA), as measured at the property line, except during short-term events such as severe wind storms and utility outages.

d. Shadowing/Flicker: Small wind energy systems shall be sited in a manner that does not result in significant shadowing or flicker impacts on neighboring properties. The applicant has the burden of proving that this effect does not have significant adverse impact on neighboring or adjacent uses either through siting or mitigation.

e. Signs:

- i) All signs, both temporary and permanent, are prohibited on the small wind energy system, except as follows:
 - A) Manufacturer's or installer's identification on the wind turbine.
 - B) Appropriate warning signs and placards.

f. Code Compliance: The small wind energy system shall comply with all applicable sections of the Connecticut State Building Code.

g. Aviation: The small wind energy system shall be built to comply with all applicable Federal Aviation Administration . Evidence of compliance or non-applicability shall be submitted with the application.

h. Visual Impacts: It is inherent that small wind energy systems may pose some visual impacts due to the tower height needed to access the wind resources. The purpose of this section is to reduce the visual impacts, without restricting the owner's access to the wind resources.

i) The applicant shall demonstrate through project site planning and proposed mitigation that the small wind energy system's visual impacts will be minimized for surrounding neighbors and the community. This may include, but not be limited to information regarding site selection, turbine design or appearance, buffering, and screening of ground mounted electrical and control equipment. All electrical conduits shall be underground.

ii) The color of the small wind energy system shall either be the stock color from the manufacturer or painted with a non-reflective, unobtrusive color that blends in with the surrounding environment and minimizes ice build up

iii) A small wind energy system shall not be artificially lit unless such lighting is required by the Federal Aviation Administration (FAA). If lighting is required, the applicant shall provide a copy of the FAA determination to establish the required markings and/or lights for the small wind energy system.

i) Utility Connection: If the proposed small wind energy system is to be connected to the power grid through net metering .

j) Access:

i) All ground mounted electrical and control equipment shall be labeled and secured to prevent unauthorized access.

ii) The tower shall be designed and installed so as to not provide step bolts or a ladder readily accessible to the public for a minimum height of 8 feet above the ground.

- k) Approved Wind Turbines: The manufacturer and model of the wind turbine to be used in proposed small wind energy system must have been approved by the California Energy Commission or the New York State Energy Research and Development Authority, or a similar list approved by the state of New Hampshire, if available.
- l) Clearing: Clearing of natural vegetation shall be limited to that which is necessary for the construction, operation and maintenance of the small wind energy system and as otherwise prescribed by applicable laws, regulations, and ordinances.

F. Abandonment:

1. At such time that a small wind energy system is scheduled to be abandoned or discontinued, the applicant will notify the Building Inspector by certified U.S. mail of the proposed date of abandonment or discontinuation of operations.
2. Upon abandonment or discontinuation of use, the owner shall physically remove the small wind energy system within 90 days from the date of abandonment or discontinuation of use. This period may be extended at the request of the owner and at the discretion of the Building Inspector. "Physically remove" shall include, but not be limited to:
 - a. Removal of the wind turbine and tower and related above grade structures.
 - b. Restoration of the location of the small wind energy system to its natural condition, except that any landscaping, grading or below-grade foundation may remain in the after-conditions.
3. In the event that an applicant fails to give such notice, the system shall be considered abandoned or discontinued if the system is out-of-service for a continuous 12-month period. After the 12 months of inoperability, the Building Inspector may issue a Notice of Abandonment to the owner of the small wind energy system. The owner shall have the right to respond to the Notice of Abandonment within 30 days from Notice receipt date. The Building Inspector shall withdraw the Notice of Abandonment and notify the owner that the Notice has been withdrawn if the owner provides information that demonstrates the small wind energy system has not been abandoned.
4. If the owner fails to respond to the Notice of Abandonment or if after review by the Building Inspector it is determined that the small wind energy system has been abandoned or discontinued, the owner of the small wind energy system shall remove the wind turbine and tower at the owner's sole expense within 3 months of receipt of the Notice of Abandonment. If the owner fails to physically remove the small wind energy system after the Notice of Abandonment procedure, the town shall have the authority to enter the subject property and physically remove the small wind energy system. ?????
5. The Zoning Commission may require the applicant to provide a form of surety (i.e., post a bond, letter of credit or establish an escrow account or other) at the time of construction to cover costs of the removal in the event the town must remove the facility. The applicant shall submit a fully inclusive estimate of the costs associated with removal, prepared by a qualified engineer. The amount shall include a mechanism to accommodate the rate of inflation over 15 years.

G. Fees

1. The fee for the design review process, including the Public Hearing is documented in section 242 -xxx [\$100].

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