

§242-314 Small Wind Turbine Systems (11/8/09)

A. Purpose:

- (1) The purpose of this section is to accommodate distributed generation/small wind energy systems whose primary purpose is to supply *electrical* 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: See section §242-202

C. Permits Required

- (1) **Designed Review Permit:** No small wind energy System or testing apparatus shall be erected, constructed, installed or modified without first obtaining a Design Review Approval Permit.
- (2) **Building Permit:** After Design Review Approval as stated above, a building permit is required for the installation, construction or modification of a small wind energy system.

D. Procedure for Review:

- (1) **Application:** An application for Design Review Approval shall be in accordance with the requirements of Section 242-302 C (3) as modified hereinafter in subparagraph (3) below.
- (2) **Public Hearing:** Upon receipt of an application and prior to issuance of a Design Review Approval Permit and a building permit, the Commission shall hold a public hearing.
- (3) **Required Data:**
 - (a) Property lines and physical dimensions of the applicant's property drawn to scale, including names of adjoining property owners.
 - (b) Location, dimensions, and types of existing major structures on the property shown to scale.

**TOWN OF BROOKFIELD
ZONING REGULATIONS**

Small Wind Turbine Energy Systems

§ 242-314D

- (c) Location of the proposed small wind energy system, foundations, guy anchors and associated equipment.
- (d) Setback requirements as outlined in this ordinance.
- (e) The right-of-way of any public road that is contiguous with the property.
- (f) Any overhead utility lines.
- (g) Small wind energy system specifications, including manufacturer, model, rotor diameter, tower height, tower type (freestanding or guyed).
- (h) 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.
- (i) Tower foundation blueprints or drawings.
- (j) Tower blueprint or drawings.
- (k) Sound level analysis prepared by the wind turbine manufacturer or qualified engineer.
- (l) Confirmation that the manner of installation will conform to the National Electrical Code (usually provided by the manufacturer).
- (m) Estimated costs of physically removing the small wind energy system to comply with surety standards.
- (n) Evidence of compliance or non-applicability with Federal Aviation Administration requirements.
- (o) The site plan must be stamped by a professional engineer licensed to practice in the state of Connecticut.
- (p) Documentation describing the containment plan for ice that may accumulate on the turbine surfaces such that the ice will not become a hazard.
- (q) Copies of certified mail receipts and copy of the Neighbors/Adjoining Property Owner Notification.

**TOWN OF BROOKFIELD
ZONING REGULATIONS**

Small Wind Turbine Energy Systems

§ 242-314D&E

(r) Documentation from public utility company noting interconnection approval.

E. Design Review Approval 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 shall 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) Small wind energy systems must meet all setbacks for principal structures for the zoning district in which the system is located.
- (iii) The setback shall be measured to the center of the tower's base.
- (iv) 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 15 feet above any structure on the the property.
- (iii) The applicant shall provide evidence that the proposed tower height does not exceed the height recommended by the manufacturer of the wind turbine.

**TOWN OF BROOKFIELD
ZONING REGULATIONS**

Small Wind Turbine Energy Systems

§ 242-314E

- (c) **Sound Level:**
The small wind energy system shall not exceed 45 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:**
All signs, both temporary and permanent, are prohibited on the small wind energy system, except as follows:
 - (i) Appropriate warning signs and placards

 - (ii) Signs shall not be more than 2 square feet in size.

- (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.

**TOWN OF BROOKFIELD
ZONING REGULATIONS**

Small Wind Turbine Energy Systems

§ 242-314E

- (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.
- (iv) All systems shall be located in the rear, side yards or on rooftops, unless testing clearly demonstrates these locations are not suitable.
- (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.
 - (iii) All connections and cabling shall be underground.
- (k) **Approved Wind Turbines:**
The manufacturer and model of the wind turbine to be used in the 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.

**TOWN OF BROOKFIELD
ZONING REGULATIONS**

Small Wind Turbine Energy Systems

§ 242-314E

F. Fees:

- (1) The fee for the design review process, including the Public Hearing is documented in section 242-301C