

## I. Wind Energy Conversion Systems

### 1. Administration

a. Placement of Wind Energy Conversion Systems-hereafter referred to as windmills - on any property in the Town of Hamilton shall require a special permit from the Board of Appeals, in addition to a building permit and any relevant electrical permits. Permit procedure shall be as set forth in Section IX of this By-law.

b. The applicant shall submit a plan and supporting data, which shall bear the seal and signature of a registered professional engineer licensed to practice in Massachusetts. Submissions shall include the following :

1. a plan showing property lines of the applicant and abutters, proposed location of the windmill, location of buildings, overhead transmission and distribution lines, and any radio or telecommunications towers within 200 feet of the windmill; drainage or utility easements crossing within 200 feet of proposed power or control lines to or from the windmill; and location of guy wire anchors, if any;

2. a dimensional representation of the windmill mounted on its support structure, including foundation dimensions (both surface and depth), foundation materials, method of attaching tower to foundations, windmill dimensions including, tower height and rotor diameter, and clearance distances of blades to ground and nearest structure;

3. statement as to whether the proposed windmill is a tested production model, or an experimental, one-of-a kind or prototype design;

4. windmill design data including manufacturer's specifications and installation/operation instructions; certification by the manufacturer or a registered engineer that tower design is sufficient to withstand wind load requirements for structures as established by the Mass. Building Code;

5. site-specific wind speed data including the monthly mean wind-speed for a period no less than 6 months.

c. Abandonment: If the Building Inspector determines that any windmill has been abandoned for more than 12 months, or has become a hazard, he may revoke its permit and may require that it be removed by the owner, subject to the procedures and penalties set forth in Mass. General Laws Chapter 139, Section 3A and Mass. General Laws Chapter 143, Section 9.

### 2. Windmill Standards

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- a. Setback: The windmill tower shall be set back at least one tower height plus one rotor radius from any property line, except that setback may be reduced by the Board of Appeals, with the advice of the Building Inspector, if the Board of Appeals finds there is no risk to the public welfare, and if all affected abutters grant written permission. In making this determination the Board may consider the safety record for the type of machine proposed, and the consequences of a tower failure for the proposed type of tower.
- b. Height: The Board of Appeals shall determine whether the proposed height is acceptable, based on documentation of the machine's safety, and on the topography of and impact on the proposed site and the neighborhood.
- c. Minimum blade height, Minimum blade elevation shall be not less than 15 feet above the ground at the lowest point of blade arc.
- d. Noise. The windmill shall not produce a noise level at the property line deemed to cause a nuisance to abutters.
- e. Labeling Requirements: At least 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 on the generator or alternator of the windmill, and on the windmill control panel:
1. Maximum power output of system and wind speed at which it is achieved.
  2. Nominal voltages and maximum current;
  3. Manufacturer's name and address, model number and serial number;
  4. Normal and emergency shutdown procedures;
  5. Maximum windspeed the windmill, in automatic unattended operation, can sustain without damage to structural components, or loss of ability to function normally.
- f. Safety: The design of the proposed windmill shall be such that:
1. In the event of loss of utility power, windmill shall not backfeed a dead power line;
  2. In the event of high wind speeds, windmill shall brake or feather below survival windspeed;
  3. In the event of blade imbalance, windmill shall be able to support added blade weight of at least 10% at the tip of any blade.
- g. Wind Capacity. The windmill, inclusive of its supporting structure, shall be designed to withstand a wind speed of at least 120 miles per hour,
- h. Access: To prevent unauthorized climbing, tower access shall be restricted by EITHER:

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1. an impassable fence and locked gate, both at least 6 feet high, constructed around the perimeter of the base of the supporting structure, provided that such barrier is not required for any windmill erected on dwelling or other structure which provides no opportunity for climbing for at least 6 feet;
  2. OR removal of climbing apparatus on the support structure to at least 10 feet above the ground;
  3. OR anticlimbing shrouds over the bottom portion of the structure
- i. Building Code: Tower construction shall conform with the Mass, State Building Code as applicable.
  - j. Guy Wires. If the tower is to be supported by guy wires, fencing must be provided to prevent grazing animals from rubbing against the wires, as uneven tension on wires can make tower unstable.
  - k. Output: Any windmill or windmill-farm generating over 25 kilowatts shall be considered a commercial use, and must comply with the requirements of Section VI.H of this by-law ("Site Plans") in addition to complying with this section.
  - l. Electromagnetic Interference with radio frequency communication, traceable to the operation or location of the windmill, shall be limited in accordance with all applicable sections of the Federal Communications Commission specifications.

### **J. Communication Towers (CT) and Telecommunication Antenna Facilities (TAF)** (Adopted May 7, 2001, and replaces former Section VI.J. which was adopted November 16, 1998)

#### 1. Purpose:

The purpose of this section is to establish general guidelines for the siting of communication towers and telecommunication antenna facilities. The goals of this section are to: minimize the adverse visual impacts of towers and facilities; to avoid damage to adjacent properties; to lessen impact on surrounding properties; to lessen impact on traffic; to encourage the location of towers on municipal land; to minimize the number of towers throughout the community; to require the co-location of new and existing tower and facility sites; to encourage users of towers and facilities to locate them, to the extent possible, in areas where the adverse impact on the community is minimal; and to make available all CT and TAF locations to local municipal agencies.

#### 2. Permitting

- a. No communication tower or telecommunication antenna facility may be erected without first obtaining a Special Permit from the Special Permit Granting Authority, SPGA. The SPGA under this section shall be the Planning Board. Permits shall only be granted