
ARTICLE ____. To see if the Town will vote to **replace Section 17.0-Wind Turbine Moratorium** of the Town of Shelburne, Massachusetts Zoning Bylaw **with a new Section 17.0-Premises-Use Wind Energy System Bylaw** of the Town of Shelburne, Massachusetts Zoning Bylaw. A copy of the proposed replacement of Section 17.0- Premises-Use Wind Energy System Bylaw is available in the Shelburne Town Clerk’s Office for review and will be available at Town Meeting.

SECTION 17 PREMISES-USE WIND ENERGY SYSTEM BYLAW

17.1 PURPOSE

The purpose of this Bylaw is to provide criteria to help the Town of Shelburne evaluate and provide standards for the placement, design, construction, monitoring, and removal of premises-use wind energy systems (PUWES). The criteria will be utilized by Building Inspectors charged with issuing building permits, by the Zoning Board of Appeals charged with issuing Special Permits, and by the Board of Health and Building Inspector as the authorities charged with enforcement of these standards.

17.2 APPLICABILITY

This section applies to PUWES with no greater than 30 kW of rated nameplate capacity proposed to be constructed after the effective date of this section.

17.3 DEFINITIONS

Ambient air space – The unconfined space occupied by the atmosphere, including the air outside facilities or structures.

Building Inspector - The inspector of buildings, building commissioner or local inspector, or representative of the Franklin County Cooperative Inspection Program, designated by the Town of Shelburne and charged with the enforcement of the zoning bylaw.

Building Permit - A building permit is a required approval of a project issued by the Town’s designated Building Inspector which is consistent with all applicable building codes and meets the criteria set forth under the local zoning bylaws.

Height - The height of a wind turbine measured from natural grade to the tip of the rotor blade at its highest point, or blade-tip height.

Noise - Sound of sufficient intensity and/or duration to be damaging, irritating or injurious.

Rated Nameplate Capacity - The maximum rated output of electric power production equipment. This output is typically specified by the manufacturer with a “nameplate” on the equipment.

Special Permit Granting Authority - The Special Permit Granting Authority (SPGA) shall be the Zoning Board of Appeals, by this section for the issuance of Special Permits to construct and operate PUWES.

Wind Monitoring or Meteorological Tower - A temporary tower equipped with devices to measure wind speeds and direction, consistent with the height of the proposed structure, used to determine how much wind power is available for power generation on site.

Wind Turbine - A device that converts kinetic wind energy into rotational energy that drives an electrical generator.

17.4 GENERAL REQUIREMENTS

The requirements established in this bylaw shall supersede all other requirements for PUWES in the existing Town of Shelburne Zoning Bylaw and/or Subdivision Control Regulations.

17.4.1 Building Inspector Issued Permit - No PUWES shall be erected, constructed, installed or modified as provided in this section without obtaining a building permit from Shelburne's designated Building Inspector and a special permit from the SPGA. All PUWES shall be constructed and operated in a manner that avoids disturbances as outlined at Section 14.0 of the zoning bylaw.

17.4.2 Premises-Use Wind Energy System (PUWES) – Any system of turbines, whether located on the building or the ground, designed primarily to generate heat or electricity for the principal home or business located on the lot, such systems may generate a limited amount of excess electricity for resale to an electrical utility provided the system is designed principally to supply the electrical needs of the home or business on that or any adjoining lots in common ownership. This system includes all equipment, machinery and structures utilized in connection with the conversion of wind to electricity. This includes, but is not limited to, storage, electrical collection and supply equipment, transformers, service and access roads, and one or more wind turbines, with a total cumulative nameplate capacity of 10 kW for residential and 30 kW for agricultural/business use. The rated nameplate capacity of the wind turbine shall be restricted to the smallest unit available to cover the intended premises-use. A PUWES may be mounted on the ground or on an existing roof.

17.4.3 Rooftop Wind Energy Systems - PUWES sited on top of, attached to and extending above the ridge line of, an existing structure shall comply with all applicable provisions of the latest version of the Uniform Building Code, Section 5.2 and all applicable standards in Sections 17.5, 17.6, and 17.7 of this bylaw.

17.4.4 Pre-Application Conference - For all PUWES, the applicant is required to meet with the SPGA to conduct a pre-application conference to discuss the project.

17.4.5 Compliance with Laws, Bylaws and Regulations - The construction and operation of all such proposed PUWES shall be consistent with all applicable local, state and federal

requirements, including but not limited to all applicable safety, construction, environmental, electrical, communications and FAA aviation requirements.

17.4.6 Utility Notification - No PUWES shall be installed until evidence has been given to the SPGA that the utility company has been informed of the customer's intent to install an interconnected customer-owned generator. Off-grid systems shall be exempt from this requirement

17.4.7 Proof of Liability Insurance - The applicant for a Building Permit for a PUWES shall be required to provide evidence to the Building Inspector of liability insurance in an amount and for duration sufficient to cover loss or damage to persons and structures occasioned by the failure of the facility until the system is dismantled

17.4.8 Site Control - At the time of its application for a Building Permit, the applicant shall submit documentation of actual or prospective control of the project site sufficient to allow for installation and use of the proposed facility. Documentation shall also include proof of control over setback areas and access roads, if required. Control shall mean the legal authority to prevent the use or construction of any structure for human habitation within the setback areas.

17.4.9 Temporary Meteorological Towers (Met Towers) - Met towers shall be permitted under the same building permit standards as a PUWES, except that the requirements apply to a temporary structure. A permit for a temporary met tower shall be valid for a maximum of 3 years after which an extension may be granted. Wind monitoring shall be permitted in all zoning districts subject to issuance of a building permit for a temporary structure and subject to reasonable regulations concerning the bulk and height of structures and determining yard-size, lot area, setbacks, open space and building coverage requirements.

17.4.10 Certification – A premises-use wind turbine must be an approved turbine on the list certified by the Premises-use wind Certification Council or other certification agency as approved by the State of Massachusetts.

17.5 GENERAL SITING STANDARDS

17.5.1 Height - The height of a PUWES shall be no greater than 120 feet above ground level to the tip of the blade. Rooftop Wind Energy Facilities shall comply with existing building codes, and Section 5.2.

17.5.2 Setbacks – Ground mounted PUWES shall be set back a distance equal to 1.5 times the total height of the wind turbine from the project property boundary, overhead utility lines, and public roads or rights of way and 3.0 times the total height of the wind turbine from any inhabited structures not owned by the project owner.

17.5.3 Noise -The noise impact of any PUWES, including rooftop wind turbines, shall not cause ambient noise levels to exceed 33 dB(A). Where the ambient noise level is 28 dB(A) or less, the noise level impact of any PUWES shall not cause noise levels to increase more than 5 dB(A) over ambient at the project property boundary.

17.5.4 Shadow Flicker – PUWES shall be sited in a manner that does not result in any shadow flicker impact on occupied buildings not owned by the project owner.

17.6 DESIGN STANDARDS

17.6.1 Appearance, Color and Finish - The wind generator and tower shall remain painted or finished with the non-reflective color unless otherwise approved in the special permit.

17.6.2 Lighting - Wind turbines shall be lighted only if required by the Federal Aviation Administration. Lighting of other parts of the PUWES, such as appurtenant structures, shall be limited to that required for safety and operational purposes, and shall be reasonably shielded from abutting properties.

17.6.3 Signage - Signs shall be restricted to reasonable identification of the manufacturer or operator of the PUWES and shall defer to the requirements of the Town sign regulations in Section 9.

17.6.4 Appurtenant Structures - All appurtenant structures to PUWES shall comply with the dimensional requirements of the underlying zoning district, including but not limited to setbacks and height.

17.7 SAFETY AND ENVIRONMENTAL STANDARDS

17.7.1 Unauthorized Access - Wind turbines or other structures part of a PUWES shall be designed to prevent unauthorized access. For instance, 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 10 feet above the ground.

17.7.2 Land Clearing and Soil Erosion - Clearing of natural vegetation shall be limited to that which is necessary for the construction, operation and maintenance of the PUWES and as otherwise prescribed by applicable laws, regulations, and bylaws.

17.8 MONITORING AND MAINTENANCE

17.8.1 System Conditions - The applicant shall maintain the PUWES in working condition and in good repair. Maintenance shall include, but not be limited to, painting, structural repairs, and security measures. Compliance with this condition shall be enforced by the Building Inspector.

17.9 ABANDONMENT OR DECOMMISSIONING

17.9.1 Removal Requirements - Any PUWES which has reached the end of its useful life or has been abandoned shall be removed. A PUWES shall be considered abandoned when it fails to operate for one year. Upon a Notice of Abandonment issued by the Building Inspector, the PUWES owner will have 30 days to provide sufficient evidence that the system has not been abandoned or the Town shall have the authority to enter the owner's property and remove the system at the owner's expense.

17.10 PERMIT PROCESS, REQUIREMENTS & ENFORCEMENT

17.10.1 Application Requirements - Each application for a Special Permit shall be filed by the applicant with the Town Clerk pursuant to Section 9 of Chapter 40A of the Massachusetts General Laws and in accordance with the Shelburne SPGA rules and procedures.

The applicant shall provide the SPGA with copies of the application, plans and documents as specified in the Shelburne SPGA rules and procedures. All plans and maps shall be prepared, stamped and signed by a professional engineer licensed to practice in Massachusetts. Included in the application shall be:

A. Completed Application Form

B. Site Plans

1. A title sheet with the following:
 - a. A title labeling the applicant, type of proposal, and location of proposed facility.
 - b. A vicinity map showing all major roadways within 2,000' of the project site.
 - c. A sheet index.
 - d. A project summary block labeling the applicant, applicant's representative if applicable, facility address, owner, deed reference, facility parcel number, and current zoning district.
2. A general plan sheet showing the complete plan view of the proposal at a preferred scale of 1" = 20' or a scale appropriate to accurately portray the proposed facility. All setback lines, property lines, easement lines, and utility lines shall be shown. Location, dimensions, and types of existing major structures on the property and location of proposed wind turbine and associated equipment shall be depicted.
3. Representations, dimensioned and to scale, of the proposed premises-use wind energy system including, but not limited to, tower foundations, guy anchors, cable locations, associated equipment or structures, fencing, electrical distribution infrastructure, and areas of clearing.
4. Elevation plans showing the complete proposal at a scale appropriate to accurately portray the proposed facility.
5. Existing areas of tree cover, including average height of trees, on the site parcel and adjacent parcels within 300 feet.
6. Wind system specifications, including manufacturer and model, rotor diameter, tower height, tower type (freestanding or guyed).
7. Tower foundation blueprints or drawings signed by a Professional Engineer licensed to practice in the Commonwealth of Massachusetts.

8. Tower blueprint or drawing signed by a Professional Engineer licensed to practice in the Commonwealth of Massachusetts.

C. Photos of relevant equipment associated with the facility, including but not limited to buildings, antennas, and other equipment outlined in the pre-application meeting.

D. Visualizations. The SPGA shall select between three and six sight lines, including from the nearest building with a view of the wind facility, for pre- and post-construction view representations. Sites for the view representations shall be selected from populated areas or public ways within a 2-mile radius of the wind facility and shall be depicted on a key map showing the location and perspective from which the visualization was generated. View representations shall have the following characteristics:

1. View representations shall be in color and shall include actual pre-construction photographs and accurate post-construction simulations of the height and breadth of the wind facility (e.g. superimpositions of the wind facility onto photographs of existing views).
2. All view representations shall include existing, or proposed, buildings or tree coverage.
3. The applicant shall provide a description of the technical procedures followed in producing the visualization (distances, angles, lens, etc.).

E. Noise Study. The applicant shall submit the results of a noise analysis, establishing an ambient baseline, to the SPGA. The noise analysis shall be conducted in accordance with industry standards and certified by a qualified independent acoustical engineer.

F. Shadow and Flicker Analysis. The applicant shall conduct a shadow and flicker analysis and submit its findings to the SPGA. The applicant has the burden of proving that no shadow flicker on off-site inhabited buildings will occur. (See section 17.5.4.)

G. Any other studies, drawings or materials deemed necessary by the SPGA.

17.10.2 Procedure – Upon receipt of a complete application for a Special Permit for a PUWES, the SPGA shall review and take action upon the application and hold a public hearing in accordance with Section 9 of Chapter 40A of the Massachusetts General Laws.

17.10.3 Special Permit Approval Criteria – After notice and public hearing, and after due consideration of the evidence submitted, the SPGA may grant a Special Permit, as allowed under Section 6.6, provided that it finds that the proposed PUWES does not derogate from the purposes and intent of this Section and the Zoning Bylaw.

17.10.4 Independent Consultants - Upon submission of an application for a Special Permit, the SPGA will be authorized to hire outside consultants at the expense of the applicant, pursuant to Section 53G of Chapter 44 of the Massachusetts General Laws.

17.10.5 Expiration - A building permit issued pursuant to this bylaw shall expire if:

- A. The PUWES is not installed and functioning within 24-months from the date the permit is issued; or,
- B. The PUWES is abandoned as defined in Section 17.9.

17.10.6 Violations - It is unlawful for any person to construct, install, or operate a PUWES that is not in compliance with this bylaw or with any condition contained in a Building Permit or Special Permit issued pursuant to this bylaw. PUWES installed prior to the adoption of this bylaw are exempt.

17.10.7 Administration and Enforcement – This bylaw shall be administered and enforced by the Building Inspector or other official as designated. The Building Inspector may enter any property for which a building permit has been issued under this bylaw to conduct an inspection to determine whether the conditions stated in the permit have been met.

17.10.7.1 Non-compliance - If there is a question of compliance with a special permit, the Building Inspector has the authority to issue a cease and desist order and shall require the applicant to implement all reasonable measures to mitigate unforeseen adverse impacts of the PUWES should they occur and until such time as the Building Inspector has determined compliance. The Building Inspector shall request submittal of a mitigation plan outlining measures to address unforeseen adverse impacts

17.10.7.2 Noise or Shadow Flicker Complaint - The Shelburne Board of Health is hereby authorized to enforce Section 17.5.3 and 17.5.4 of this bylaw.

- A. Upon receipt of a noise or shadow flicker complaint, the Board of Health will make a determination as to whether a complaint warrants a study to determine compliance with 17.5.3 and 17.5.4.
- B. The Board of Health will notify the Building Inspector and may hire an independent consultant, at the cost of the owner, to conduct a noise study or shadow flicker analysis.
- C. If it is determined there is a violation of 17.5.3 or 17.5.4, the Board of Health shall report this to the Building Inspector and the SPGA.
- D. Upon receipt of a report of a violation of 17.5.3 or 17.5.4 from the Shelburne Board of Health or Building Inspector, the SPGA will review the conditions of the project's special permit and propose mitigation measures to ensure compliance with 17.5.3 or 17.5.4

17.10.7.3 Noise Study - If required by the SPGA, the noise study shall contain sufficient information for the SPGA to determine that the PUWES noise level shall not exceed 33 dB(A), or in locations where the ambient noise level is 28 dB(A) or less the noise impact from the PUWES shall not be greater than a 5 dB(A) increase, at any property boundary and the nearest inhabited residence.

- A. In completing the noise analysis, the acoustical engineer shall consider the unique topography of the surrounding area, prevailing wind direction and atmospheric conditions, such as high wind shear or thermal inversion that may affect the proration of sound emitted from the PUWES. The noise analysis shall also include an analysis and discussion of the anticipated impacts of low frequency noise emitted from the PUWES.
- B. Noise Equipment Standards - All sound level measurement equipment must comply with the following standards:
 - 1. Sound level meters used must be ANSI Type 1. ANSI Type 2 meters are not acceptable. Equipment meeting similar applicable ISO or IEC standards is also acceptable.
 - 2. Consultants must provide the model and make of the sound level meter for the final report.
 - 3. The sound level meter must have been field-calibrated using an ANSI Type 1 calibrator that has accuracy traceable to the National Institute of Standards and Technology (NIST).
 - 4. The sound level meter must have been calibrated by a certified laboratory no more than 24 months prior to the date the acoustic study was conducted.

17.10.8 Penalties - Any person who fails to comply with any provision of this bylaw or a permit issued pursuant to this bylaw shall be subject to enforcement and penalties as allowed by applicable law.

17.11 MODIFICATIONS

All minor modifications (excluding routine repairs and maintenance) to a PUWES made after issuance of a Special Permit, shall require approval by the Building Inspector. Minor modifications do not include increases to the physical size or capacity of the PUWES. All major modifications, such as increases to the physical size or capacity of the system, shall require a special permit issued by the SPGA.

17.12 WAIVER OF COMPLIANCE

Waivers may be granted from any of the Special Permit application requirements at 17.10.1. Requests for a waiver shall be discussed at the pre-application conference and submitted to the SPGA in a separate letter accompanying the application. The waiver request shall be noticed publicly in the public hearing notice to consider the application. The reasons for granting a

waiver shall be stated in the SPGA’s decision. In granting such modification or waiver, the SPGA may impose conditions it deems necessary to protect the public interest.

ARTICLE ____. To see if the Town will vote to amend the following sections of the Town of Shelburne, Massachusetts, Zoning By-Law as follows:

Section 4.3 TABLE OF USE REGULATIONS—add the following new section to the table:

ENERGY GENERATION USES	<u>RA</u>	<u>VR</u>	<u>VC</u>	<u>C</u>	<u>I</u>	<u>See</u>
Premises-Use Wind Energy Systems	SP	SP	SP	SP	SP	Sec. 17
Solar panel systems for premises use	Y	Y	Y	Y	Y	
Commercial electric generating facilities	SP	SP	SP	SP	SP	
Coal fired electric generating facilities	N	N	N	N	N	
Nuclear powered electric generating facilities	N	N	N	N	N	
Wind powered electric generating systems not covered in Section 17	N	N	N	N	N	

Section 5.2 DIMENSIONAL SCHEDULE—add the following footnote:

Dimensional Schedule ^(e):

(e) Setbacks and height restrictions for a PUWES are described in Section 17.5.2.