WIND ENERGY CONVERSION FACILITIES
Filed with the Town Clerk on January 28, 2009

ARTICLE . To see if the Town will vote to amend Chapter 218, Zoning, of the Code of the Town of Groton, by amending Sections 218-4 Definitions, 218-13 Schedule of Use Regulations, and 218-25 Site Plan Review, and by adding a new Section 218-25.2 entitled, "Wind Energy Conversion Facilities," including meteorological towers and windmills, or take any action thereon.

1. Amend Section 218-4 Definitions by inserting the following definitions at the alphabetically correct locations:

Nacelle: The frame and housing at the top of the wind energy conversion facility tower that encloses the gearbox and generator and protects them from the weather.

Rotor: The blades and hub of the wind energy conversion device that rotates during energy conversion device operation.

Small Scale Wind Energy Conversion Device: A wind energy conversion device that may be free-standing or mounted on a structure not exceeding 65 feet in height.

Special Permit Granting Authority (SPGA): The Planning Board or the Board of Appeals as designated in this Chapter as having the authority to issue special permits.

Large Scale Wind Energy Conversion Device: A wind energy conversion device that exceeds 65 feet in height.

Wind Energy Conversion Device: A device that converts kinetic energy of the wind into electrical power. A wind energy conversion device typically consists of a rotor, nacelle and supporting tower.

Wind Energy Conversion Facility: All equipment, machinery and structures utilized in connection with the conversion of wind to electricity. This includes, but is not limited to, all transmission, storage, collection and supply equipment, substations, transformers, site access, service roads and machinery associated with the use. A wind energy conversion facility may consist of one or more wind energy conversion devices.

Wind Energy Conversion Device Height: The distance measured from the natural grade to the highest point on the device during operation.

Windmill: A device, usually associated with agriculture, that converts kinetic energy of the wind into mechanical power, not electrical power. A windmill is not a wind energy conversion device per these definitions.

Wind Monitoring or Meteorological ("test" or "met") Tower: A tower, whose period in existence shall not be greater than 18 months, used for supporting anemometer, wind vane, and other equipment to assess the wind resource at a predetermined height above the ground, erected as part of a wind-energy conversion feasibility process.

2. Amend Section 218-13 Schedule of Use Regulations by inserting the following uses in the Business Section:

	R-A	**R-B**	**B-1**	**M-1**	**C**	**O**	**P**
Small scale wind energy conversion device	Y	Y	Y	Y	N	N	Y
Large scale wind energy conversion device	PB	PB	PB	PB	N	N	PB
Meteorological tower	Y	Y	Y	Y	N	N	Y
Windmills	Y	Y	Y	Y	N	N	Y

3. Amend Section 218-25 Site Plan Review as follows:

And by inserting the following at the end of Section 218-25.C.3:

“(c). Construction, erection, installation, use, or modification of a large scale wind energy conversion device.

4. Inserting a new Section 218-25.2 Wind Energy Conversion Facility which shall read as follows:

218-25.2 Wind Energy Conversion Facility

A. Purpose. The purpose of this Section is to regulate and provide criteria for the construction and operation of wind energy conversion facilities in order to address public health, safety, and welfare, and minimize impacts on scenic, natural, and historic resources of the Town.

B. Applicability. No wind energy conversion facility shall be placed, constructed, modified, or operated except in conformance with the provisions of this Section and other applicable sections of this Chapter.

1. Wind Monitoring or Meteorological Tower
No wind monitoring or meteorological tower shall be erected, constructed, installed, or modified without first obtaining a building permit. The Building Commissioner may issue a permit only if the tower complies with the following requirements:

a. Setbacks
Wind monitoring or meteorological towers shall comply with the building setback requirements of the zoning district in which they are located. Additionally, wind monitoring or meteorological towers shall be set back a distance of at least 1.5 times the overall height of the tower from the nearest property line. Any supporting structure including guy wires shall not be located closer to any property line or street line than the distance equal to the minimum building setback required for the zoning district in which the tower is located.

b. Time limit
A building permit for a wind monitoring or meteorological tower shall be limited to eighteen months after construction has commenced

2. Small Scale Wind Energy Conversion Devices
No small scale wind energy conversion device shall be erected, constructed, installed or modified without first obtaining a building permit. The Building Commissioner may issue a permit only if the small scale wind energy conversion device complies with §218-25.2.2 of this Section. If the device does not comply with one or more of the following requirements, the applicant shall be required to obtain a special permit from the Planning Board waiving such requirement(s) after finding that such waiver(s) will not derogate from the intent of this chapter or be detrimental or injurious to the public. In no event shall the Planning Board grant a waiver of height requirements.

a. Setbacks
Small scale wind energy conversion devices shall comply with the building setback requirements of the zoning district in which they are located. Additionally, small scale wind energy conversion devices shall be set back a

distance of at least 1.5 times the overall height of the device from the nearest property line. Any supporting structure including guy wires shall not be located closer to any property line or street line than the distance equal to the minimum building setback required for the zoning district in which the facility is located.

b. Height
No small scale wind energy conversion device shall be higher than 65 feet.

c. Number
The number of small scale wind energy conversion towers on any parcel shall not exceed two (2).

d. Lighting
There shall be no lighting affixed to a small scale wind energy conversion device.

e. Appearance, color, finish
The small scale wind energy conversion device shall be painted a non-reflective color that blends with its surroundings.

f. Signage and advertizing
Signs on the small scale wind energy conversion facility shall comply with Chapter 196, Signs, of the Code of the Town of Groton, and shall be limited to:

(1) Those necessary to identify the owner, provide a 24-hour emergency contact phone number, and warn of any danger.

(2) Educational signs providing information about the facility and the benefits of renewable energy.

(3) Reasonable identification of the manufacturer or operator of the wind energy facility, not to include any advertising display.

g. Noise
The small scale wind energy conversion device and associated equipment shall comply with the provisions of the Massachusetts Department of Environmental Protection's ("DEP") Division of Air Quality Noise Regulations (310 CMR 7.10) in effect on April 27, 2009, unless the applicant provides written confirmation from DEP that those provisions are not applicable to the proposed facility.

h. Connection to the power grid
Approval of a wind-energy device neither permits nor denies access to the power grid.

i. Unauthorized access
Small scale wind energy conversion devices and other parts of the facility shall be designed to prevent unauthorized access.

3. Large Scale Wind Energy Conversion Devices

No large scale wind energy conversion device shall be erected, constructed, installed or modified without a special permit from the Planning Board as provided herein.

a. Special permit

Large scale wind energy conversion devices, where permissible under Section 218-13 Schedule of Use Regulations, shall be subject to the special permit requirements set forth below and must be operated in compliance with said requirements and any further requirements which the Planning Board may impose upon the special permit, and in a manner that minimizes any adverse visual, safety, and environmental impacts.

The Planning Board shall act as the special permit granting authority for all applications under this Section. No special permit shall be granted unless the Planning Board finds in writing that:

(1) the specific site is an appropriate location for such use;

(2) the use is not expected to adversely affect the neighborhood;

(3) there is not expected to be any serious hazard to pedestrians or vehicles from the use;

(4) no nuisance is expected to be created by the use; and

(5) adequate and appropriate facilities will be provided for the proper operation of the use.

In granting a special permit under this Section, the Planning Board may impose reasonable conditions, safeguards and limitations and may require the applicant to implement all reasonable measures to mitigate unforeseen adverse impacts of the wind facility, should they occur.

b. General Siting Standards

(1) Height.

Large Scale Wind Energy Conversion facilities shall not be higher than required to make the project economically feasible. The Planning Board must determine that the height of the facility will not derogate from the intent of this chapter or be detrimental or injurious to the public.

(2) Setbacks

Large scale wind energy conversion devices shall be set back a distance equal to at least 1.5 times the overall height of the wind energy conversion facility from the nearest property line and from the nearest private or public way street line. Any supporting structure including guy wires shall not be

located closer to any property line or street line than the distance equal to the minimum building setback required for the zoning district in which the facility is located.

The Planning Board may reduce the above minimum setback distances, as appropriate based on site-specific considerations, if the project satisfies all other criteria for the granting of a special permit under the provisions of this Section.

c. Design Standards

(1) Color and Finish
The color of the large scale wind energy conversion device shall be subject to final approval by the Planning Board, although a neutral, non-reflective exterior color designed to blend with the surrounding environment is encouraged.

(2) Lighting
Large scale wind energy conversion devices shall be lighted only if required by the Federal Aviation Administration. Lighting of other parts of the wind facility, such as appurtenant structures, shall be limited to that required for safety and operational purposes and shall be reasonably shielded from abutting properties.

(3) Signage
Signs on the large scale wind energy conversion facility shall comply with Chapter 196, Signs, of the Code of the Town of Groton, and shall be limited to:

(a) Those necessary to identify the owner, provide a 24-hour emergency contact phone number, and warn of any danger.

(b) Educational signs providing information about the facility and the benefits of renewable energy.

(4) Advertising
Wind energy conversion devices shall not be used for displaying any advertising except for reasonable identification of the manufacturer or operator of the wind energy facility.

(5) Connections
Reasonable efforts shall be made to locate wires from the wind energy conversion device underground, depending on appropriate soil conditions, shape, and topography of the site or any requirements of the utility provider. Electrical transformers for utility interconnections may be above ground if required by the utility provider.

(6) Appurtenant Structures
The Planning Board may impose reasonable requirements concerning the bulk, height, setbacks, and building coverage of structures appurtenant to a large scale wind energy conversion device, as well as parking requirements for such structures. All appurtenant structures, including but not limited to, equipment shelters, storage facilities, transformers, and substations, shall be architecturally compatible with each other and shall only be used for housing of equipment for the particular wind energy conversion facilities on the site. Whenever possible, structures should be shielded from view by vegetation and/or located in an underground vault and joined or clustered to avoid adverse visual impacts.

(7) Support Towers
Monopole towers are the preferred type of support for the large scale wind energy conversion devices.

d. Safety, Aesthetic and Environmental Standards

(1) Unauthorized Access
Large scale wind energy conversion devices and structures appurtenant to large scale wind energy conversion facilities shall be designed to prevent unauthorized access.

(2) Shadow/Flicker
Large scale wind energy conversion devices shall be sited in a manner that minimizes shadowing or flicker impacts. The applicant has the burden of proving that any shadow or flicker effect resulting from the facility will not have any significant adverse impact on neighboring or adjacent uses either because of the proposed siting of the facility or because of proposed mitigation measures.

(3) Noise
The large scale wind energy conversion devices and associated equipment shall conform with the provisions of the Department of Environmental Protection's ("DEP") Division of Air Quality Noise Regulations (310 CMR 7.10) in effect on April 27, 2009, unless the applicant provides written confirmation from DEP that those provisions are not applicable to the proposed facility.

An analysis prepared by a qualified engineer shall be presented to demonstrate that the proposed facility will be in compliance with these noise standards.

(4) Connection to the power grid
Approval of a wind-energy device neither permits nor denies access to the power grid.

(5) Land Clearing, Soil Erosion, and Habitat Impacts
Clearing of natural vegetation shall be limited to that which is necessary for the construction, operation, and maintenance of the wind facility and is otherwise prescribed by applicable laws or regulations.

(6) Waivers of Standards

In considering an application for a special permit for a large scale wind energy conversion facility, the Planning Board may waive any of the standards in the foregoing Subsections 3b, 3.c or 3.d, provided that it finds that such waiver is in the public interest and does not derogate from the intent of this Section.

(7) Modifications
All material modifications to a large scale wind energy conversion facility made after issuance of the special permit shall be subject to further special permit approval by the Planning Board in accordance with this Section.

e. Abandonment or Decommissioning

(1) Removal Requirements
Any large scale wind energy conversion facility which has reached the end of its useful life or has been abandoned shall be removed. When the wind facility is scheduled to be decommissioned, the applicant shall notify the Building Commissioner by certified mail of the proposed date of discontinued operations and plans for removal. The owner/operator shall physically remove the wind facility no more than 150 days after the date of discontinued operations. Within the same 150-day period, the wind facility site shall be restored to the state it was in before the facility was constructed. More specifically, decommissioning shall consist of:

(a) Physical removal of all wind energy conversion devices, structures, equipment, security barriers and transmission lines from the site.

(b) Disposal of all solid and hazardous waste in accordance with local and state waste disposal regulations.

(c) Stabilization or re-vegetation of the site as necessary to minimize erosion. The Planning Board may allow the owner to leave landscaping or designated below-grade foundations in order to minimize erosion and disruption to vegetation.

(2) Abandonment
Absent notice of a proposed date of decommissioning, the facility shall be deemed to be abandoned if the facility is not maintained or operated for a period of one year except where prior written consent of the Planning Board was obtained, or upon expiration of the special permit without renewal or extension.

(3) Financial Surety
As a condition of the special permit, the Planning Board shall require the applicant to provide surety in an amount determined by the Board to be necessary to ensure proper removal of the facility upon abandonment. Such surety may be provided in the form of a bond acceptable to the Planning Board or by placing a sum of money into an account to be held by an independent escrow agent appointed by the applicant and the Planning Board. Such surety will not be required for municipally or state-owned facilities.

The applicant shall submit to the Planning Board a fully inclusive estimate of the costs associated with removal, prepared by a qualified, professional engineer registered to practice in the Commonwealth of Massachusetts. The applicant shall provide written authorization and, as necessary, shall provide the written authorization of the owner of the subject property, for the Town or the escrow agent to enter upon the subject property to remove the wind facility in the event that the applicant fails to do so within 150 days after abandonment or decommissioning as required under this Section.

f. Term of Special Permit
Unless abandoned earlier, a special permit issued for a large scale wind energy conversion facility shall automatically expire after 25 years, unless extended or renewed by the Planning Board upon a finding that there has been satisfactory operation of the facility in accordance with the requirements of the special permit and this Section. An application for renewal or extension must be submitted at least 180 days prior to expiration of the special permit. Submission of such an application shall allow for continued operation of the facility until the Planning Board acts. Upon final expiration of the special permit (including extensions and renewals), the wind facility shall be deemed abandoned and shall be removed as required by this Section.

g. Application Process and Requirements

(1) Application Procedures

(a) General
The special permit application for a large scale wind energy conversion facility shall be filed in accordance with the rules and regulations of the Planning Board concerning special permits.

(b) Pre-Application Conference
Prior to the submission of an application for a Special Permit under this Section, the applicant is strongly encouraged to meet with the Planning Board at a public meeting to discuss the proposed wind energy conversion facility in general terms and to clarify the filing requirements.

The purpose of the conference is to inform the Planning Board as to the preliminary nature of the proposed wind energy conversion facility. As such, no formal filings are required for the preapplication conference. However, the applicant is encouraged to prepare sufficient preliminary architectural and/or engineering drawings to inform the Planning Board of the location of the proposed facility as well as its scale and overall design.

(c) Professional Fees
The Planning Board may impose reasonable fees for the employment of outside consultants to be expended in accordance with the requirements and provisions of MGL C. 44, § 53G, and as specified in Chapter 381, Part 3, Fees.

(d) Additional Requirements
The Planning Board may require that the applicant arrange for a balloon or crane test at the proposed site to illustrate the height of the proposed facility. The date, time, and location of such test shall be advertised in a newspaper of general circulation in the town at least 14 days, but not more than 21 days prior to the test. In addition, notice shall be provided to the town, abutters, and abutting Historic Commissions and an identical courtesy notice shall be sent to the Town Clerk of all adjacent towns.

(2) Required Documents

(a) General – Upon filing of the special permit application with the Town Clerk as required under G.L.c.40A, §11, the applicant shall provide the Planning Board with three (3) copies of the application,

including the Town Clerk's certification as to the date and time of the filing. All plans and drawings shall be prepared, stamped, and signed by a professional engineer licensed to practice in Massachusetts. Included in the application shall be:

(b) Name, address, phone number, and signature of the applicant (including all co-applicants, if any) and of the property owner(s) if different from the applicant.

(c) The name, contact information, and signature of any agents representing the applicant.

(d) Documentation of the applicant's legal right to use the wind facility site.

(3) Siting and Design
The applicant shall provide the Planning Board with a description of the property which shall include:

(a) Location Map
Copy of a portion of the most recent USGS Quadrangle Map, at a scale of 1:25,000, identifying the parcel on which the proposed facility site is to be located, the location(s) of the wind energy conversion devices on the site, and the area within at least two miles from the facility. Zoning district designation for the subject parcel should be noted on the map, or a copy of the Zoning Map with the parcel identified may be submitted.

(b) Site Plan
A one inch equals 200 feet plan of the proposed wind facility site, with contour intervals of no more than 10 feet, showing the following:

(1) Property lines for the site parcel and adjacent parcels within 300 feet.

(2) Outline of all existing buildings, including purpose (e.g. residence, garage, etc.) on site parcel and on all adjacent parcels within 500 feet. Include distances from the wind facility to each building shown.

(3) Location of all existing public and private ways on the site parcel and adjacent parcels within 300 feet, and location of any proposed roads or driveways, either temporary or permanent, on the site.

(4) Existing areas of tree cover, including average height of trees, on the site parcel and adjacent parcels within 300 feet.

(5) Proposed location and design of the large scale wind energy conversion facility, including all wind energy conversion devices, ground equipment, appurtenant structures, transmission infrastructure, access, fencing, exterior lighting, etc.

(6) The latitude and longitude of the proposed wind energy conversion facility shall be shown on the plan. Any one of these three formats may be used when indicating the facility's latitude and longitude:

a. degrees, minutes, seconds;
b. degrees, minutes, decimal; or
c. decimal degrees.

The latitude and longitude measurements should be taken from the approximate center of the wind energy conversion facility.

(7) Location of viewpoints referenced below in 218-25.2.B.g (3)(c) of this Section.

(c) Visualizations

Before the public hearing has been opened, the Planning Board 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. View representations shall be submitted by the applicant during the public hearing and 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) View representations shall include existing, or proposed, buildings or tree coverage.

(3) View representations shall be accompanied by a description of the technical procedures followed in producing the visualization (distances, angles, lens, etc…).

(4) Landscape Plan

A plan indicating all proposed changes to the landscape of the site, including temporary or permanent roads or driveways, grading, vegetation clearing and planting, exterior lighting (other than FAA lights), screening vegetation or structures. Lighting shall be designed to minimize glare on abutting properties and, except as required by the FAA, be directed downward with full cut-off fixtures to reduce light pollution.

(5)Waiver

The Planning Board may waive or modify the submission requirements contained herein where it finds such waiver or modification shall not adversely affect the public health, safety, or welfare, and will not derogate from the intent of this Section.

(6) Monitoring and Maintenance

(a) After the wind energy conversion facility is operational, the applicant shall submit to the town at annual intervals from the date of issuance of the Special Permit, a report detailing operating data for the facility (including but not limited to days of operation, energy production, etc.).

(b) The applicant shall maintain the wind energy conversion facility in good condition. Such maintenance shall include, but not be limited to, painting, structural integrity of the foundation and support structure and security barrier (if applicable), and maintenance of any buffer areas and landscaping.

(c) The applicant or facility owner shall maintain a phone number and identify a responsible person for the public to contact with inquiries and complaints throughout the life of the project.

(7) Emergency Services

The applicant shall provide a copy of the project summary and site plan to the Emergency Management Director, Police Chief, and Fire Chief prior to issuance of a building permit. Upon request the applicant shall cooperate with local emergency services in developing an emergency response plan.

C. Regulations

The Planning Board may adopt rules and regulations for the purpose of administering the provisions of this Section.

D. Conflict with Other Laws

The provisions of this Section shall be considered supplemental to other existing provisions in Chapter 218 Zoning.. To the extent that a conflict exists between this Section and the provisions in other sections of this Chapter, the more restrictive provisions shall apply.

Filed with the Town Clerk:

_____ _____

Town Clerk Date