

As Adopted September 26, 2011

**AN ORDINANCE AMENDING  
AN ORDINANCE ENTITLED THE NORTHAMPTON COUNTY ZONING  
CODE, BY ADDING THE FOLLOWING NEW SECTION, TO BE  
DESIGNATED AS SECTION 154.116, AND AMENDING SECTION 153.003,  
ENTITLED "TERMS AND DEFINITIONS" BY THE ADDITION OF  
CERTAIN NEW TERMS AND DEFINITIONS.**

**BE IT ORDAINED BY THE BOARD OF SUPERVISORS OF NORTHAMPTON  
COUNTY VIRGINIA THAT SECTION 154 OF THE CODE OF  
NORTHAMPTON VIRGINIA, "ENTITLED THE ZONING ORDINANCE OF  
NORTHAMPTON COUNTY, VIRGINIA" BE AMENDED BY THE ADDITION  
OF A NEW SUBSECTION, TO BE IDENTIFIED AS SECTION 151.116, AS  
FOLLOWS:**

**§154.116 STANDARDS FOR WIND ENERGY FACILITIES, WIND ENERGY  
TEST FACILITIES, AND WIND TURBINES, LARGE AND UTILITY-SCALE**

(A) *Purpose and Intent.* The Board of Supervisors of Northampton County finds and declares that:

- (1) Wind energy is a renewable energy resource that contributes to the state and national goals of energy independence, and the development of this energy resource is consistent with the Northampton County Comprehensive Plan.
- (2) Wind Turbines, if not appropriately sited and developed, have the potential for causing adverse impacts to wildlife, soils, transportation systems, recreation and tourism activities, property values and the health, safety and quality of life of Northampton County residents.
- (3) The location of a wind energy test facility would comply with the Northampton County Comprehensive Plan by promoting economic development through the creation of technology related employment.
- (4) In order to protect the general health, safety and welfare of Northampton County residents, the standards and conditions of this section must be met before any wind turbine and/or wind energy facility may be approved or constructed.

Section 154.003 of the Northampton County Zoning Code is amended by the addition in their proper location of the following Terms and Definitions.

**BLADE THROW ZONE:** Furthest distance from the tower base in which blades or other debris could be thrown from the wind turbine in the event of catastrophic failure.

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**FALL ZONE:** Furthest distance from the tower base in which a wind turbine will collapse in the event of a structural failure.

**kW:** Kilowatt.

**MW:** Megawatt.

**METMAST:** a guy-wired meteorological mast to measure at hub height and lower heights the wind speeds and other climatic variables such as temperature, air pressure, humidity, salt and dust concentrations, etc.

**RATED NAMEPLATE CAPACITY:** The maximum rated output of electric power production equipment. The output is typically specified by the manufacturer with a “nameplate” on the equipment.

**ROTOR DIAMETER:** The diameter of the circle subject to moving wind turbine blades

**SHADOW FLICKER:** The visible flicker effect when rotating turbine blades cast shadows on the ground and nearby structures causing the repeating patterns of light and shadow.

**WIND ENERGY FACILITY:** An electricity-generating facility consisting of one or more Wind Turbines, Utility Scale or Large Scale, under common ownership or operating control that includes substations, cables/wires, foundations, access roads, crane platforms and other building accessories to such facility, whose main purpose is to supply electricity to off-site customers.

**WIND ENERGY TEST FACILITY:** An electricity-generating facility consisting of one or more Wind Turbines, Utility Scale or Large Scale, under common ownership or operating control that includes substations, cables/wires, foundations, access roads, crane platforms and other building accessories and any testing equipment - such as but not limited to – METMASTS to such facility, whose main purpose is to test and certify new Wind Turbines.

**WIND TOWER:** The structure on which the wind system turbine is mounted

**WIND TOWER HEIGHT:** The height above grade of the fixed portion of the tower, excluding the rotor blades.

**WIND TURBINE HEIGHT:** The highest point, above ground level, reached by the highest vertical extension of the blade plus the wind tower height.

**WIND TURBINE, UTILITY SCALE:** A wind turbine with a rated capacity of 1 MW or greater.

**WIND TURBINE, LARGE SCALE:** A wind turbine with a rated capacity of greater than 100 kW but less than 1 MW (primarily used for on-site utilization of electricity).

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**WIND TURBINE:** A structure that converts wind energy into electricity through the use of a wind turbine generator, along with its associated rotors, blades, tower, wiring and pad transformer.

**WINDMILL:** A machine designed to convert the energy of the wind into more useful forms using rotating blades to turn mechanical machinery to do physical work, such as crushing grain or pumping water. A windmill is not a wind energy conversion system.

- (B) **Use Regulations.** No Wind Energy Facility, Wind Energy Test Facility, or Wind Turbine, Large Scale and/or Utility Scale not part of Wind Energy Facility or Wind Energy Test Facility, shall be constructed, reconstructed, modified or operated in Northampton County except pursuant to a Special Use Permit approved in compliance with this section. Any Special Use Permit issued for a Wind Energy Facility or a Wind Energy Test Facility shall include authorization for the construction and operation of all the Wind Turbines within such Facility, provided that each such Wind Turbine complies with the Performance Standards established by this ordinance.
- (C) **Performance Standards.** The following performance standards apply to all Wind Energy Facilities, Wind Energy Test Facilities and Wind Turbines, Large Scale and Utility Scale whether or not part of a Wind Energy Facility or Wind Energy Test Facility, and related infrastructure (for purposes of this section, any place where “Wind Turbine” is used refers to Large Scale and Utility Scale Wind Turbine.) Each Wind Turbine within a Wind Energy Facility and/or Wind Energy Test Facility must meet performance standards within this section:
1. All Wind Energy Facilities, Wind Energy Test Facilities and Wind Turbines, including but not limited to their associated electrical and mechanical components, shall conform to relevant and applicable local, state and national codes, including, but not limited to, safety and performance codes.
  2. A building permit is required prior to the initiation of construction of any and each portion of a wind energy facility or a wind energy test facility.
  3. If a Wind Turbine remains nonfunctional or inoperative for a continuous period of one year, the operator shall continually monitor and maintain the Wind Turbine so as to prevent deterioration and creation of a hazardous situation. In the event that any wind turbine becomes inoperable as a result of damage to the structure or housing, or as a result of a technical malfunction, the operator of the facility shall, within 60 days, provide to the Building Department an explanation for the inoperable condition, together with a plan and schedule for the repair or removal of the wind turbine.
  4. All power transmission lines from the Wind Energy Test Facility and/or a Wind Energy Facility and each Wind Turbine to any building or other structure shall be located underground to the maximum extent practicable.
  5. No advertising signs are allowed on any part of a Wind Energy Facility, a Wind Energy Test Facility and/or Wind Turbine and associated structures, equipment and facilities.

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6. No Wind Turbine tower shall be lit except to comply with FAA requirements. For Wind Energy Facilities and Wind Energy Test Facilities, minimum security lighting for ground-level facilities shall be allowed as approved on the Site Plan. Security lighting shall be designed to minimize light pollution and impacts to neighboring properties, including the use of light hoods, low glare fixtures, and directing lights at the ground.
7. Monopole towers shall be used for all Wind Turbines. All tower structures will be designed to meet the specifications of a licensed Professional Engineer.
8. Wind Energy Facilities, Wind Energy Test Facilities, and Wind Turbines shall be located so as to minimize the impacts of land clearing and the loss of open space areas.
9. Wind Energy Facilities, Wind Energy Test Facilities and Wind Turbines shall be located and/or operated so as to limit shadow flicker on off-site residential structures, but in no event shall shadow flicker exceed twenty-five (25) minutes per day.
10. Wind Turbines shall be placed so that structures housing animals and/or humans are not located within the Fall Zone. A dedicated risk analysis will be carried out to demonstrate public and individual safety.
11. Noise from a Wind Turbine shall not exceed fifty-five (55) decibels as measured at the closest property line.
12. Wind Turbines shall be painted a single, non-reflective, non-obtrusive color such as gray or similar shades. This provision may be waived if necessary to protect avian resources. Wind Turbines as part of a Wind Energy Facility shall be painted in an identical color.
13. All Wind Turbines shall have both a manual and an automatic braking, governing or feathering system to prevent uncontrolled rotation, overspeeding and excessive pressure on the tower structure, rotor blades and turbine components.
14. Wind Turbines shall be designed to prevent unauthorized external access to electrical and mechanical components and shall have access doors that are kept securely locked.
15. Individual Wind Turbines within a Wind Energy Facility shall be constructed using wind turbines whose appearance, with respect to one another, is similar within and throughout the area, to reduce visual impact by providing reasonable uniformity in overall size, geometry and rotational speeds. No lettering, company insignia, advertising or graphics shall be on any part of the tower, hub or blades.
16. The minimum distance between the ground and the lowest point of the blades shall be 75 feet.
17. Consistent with Zoning Code sign regulations, warning signs for expected dangers shall be posted at all Wind Energy Facilities, Wind Energy Test Facilities and Wind Turbines.

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At least one sign shall be posted at the base of the tower warning of electrical shock and high voltage. A sign shall be posted at the base of each tower containing emergency contact information, including a local telephone number with 24 hour, 7 days per week coverage. Accurate maps of the underground facilities shall be provided to the local public safety agencies, including, but not limited to the Northampton County Building Inspector and the Northampton County Sheriff's Department and the appropriate Fire and Rescue Departments.

18. Any damage to local roads from the construction vehicle traffic related to the project shall be repaired by the applicant.
19. Wind Energy Facilities and Wind Energy Test Facilities shall be located, designed, and constructed in such a manner as to minimize adverse impacts to fish, wildlife, or native plant resources, including fish and wildlife habitat, migratory routes, and state or federally-listed threatened or endangered fish, wildlife, or plant species and operated in accordance with the conditions of the Special Use Permit (SUP).
20. The use of guy wires is prohibited on Wind Turbines.
21. No Wind Turbine shall be installed in any location where its proximity with existing fixed broadcast, retransmission, or reception antenna for radio, television, or wireless phone or other personal communication systems would produce interference with signal transmission or reception. No Wind Turbine shall be installed in any location along the major axis of an existing microwave communications link where its operation is likely to produce electromagnetic interference in the link's operation. If it is determined that a Wind Turbine is causing electromagnetic interference, the operator shall take the necessary corrective action to eliminate this interference including relocation or removal of the facilities, or resolution of the issue with the impacted parties. Failure to remedy electromagnetic interference is grounds for revocation of the Special Use Permit for the specific Wind Turbines or Wind Energy Facilities causing the interference.
22. No Wind Turbine shall be installed in any location where its proximity to existing airports, airfields, or airstrips would interfere with the continued use of such airport, airfield or airstrip. A Federal Aviation Administration (FAA) Determination of No Hazard to Air Navigation (DNH) shall be required for all structures that have a height of 200 feet or more from ground level.
23. Wind Energy Facilities and Wind Energy Test Facilities shall be located in a manner consistent with all applicable local, state and federal regulations, including, but not limited to, wetlands laws and regulations, stormwater runoff and erosion control regulations, and hazardous waste disposal regulations.
24. Any soils compacted during construction of a Wind Turbine shall be decompacted to a depth of 18 inches and vegetation shall be re-established at the soonest planting date for cover crops.

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25. One Acoustic Bat Detector (ABD) shall be placed on Wind Turbines at least thirty (30) meters above the ground, and one ABD shall be placed on Wind Turbines between one and a half (1.5) meters and three (3) meters above the ground.
26. Any MET Towers/METMASTs installed as part of a Wind Energy Facility or Wind Energy Test Facility shall comply with the Performance Standards set forth in §154.115 herein.

**(D) *Setbacks, Densities, Lot Sizes, and Dimensions for Wind Turbines –Large Scale and Utility Scale.***

1. The maximum Wind Turbine Height (Large Scale and Utility Scale), including but not limited to any Wind Turbine within a Wind Energy Facility or Wind Energy Test Facility, shall not be subject to any restrictions by this or any other Section of the Northampton County Zoning Ordinance.
2. The maximum height for a METMAST within a Wind Energy Test Facility is 550 feet. All other requirements for MET Towers under Section 154.115 shall apply to METMASTs within a Wind Energy Test Facility.
3. The minimum setback distance between a Wind Turbine (Large Scale and Utility Scale) and overhead utility or transmission lines, other Wind Turbines, electrical substations, public roads, and property lines for properties not part of a Wind Farm shall be no less than 1.5 times the Wind Turbine Height or 600 feet, whichever is greater, provided that any exemption to the setback requirement for property lines may be granted by the Board of Supervisors only by an agreement of the adjacent property owner through the execution of a legally binding document that runs with the land.
4. In the event that a Wind Energy Facility or a Wind Energy Test Facility is composed of more than one parcel of land, the setback provisions of the Northampton County Zoning Code shall not apply to abutting parcel where they share a common boundary, and shall only apply where the boundary of a parcel which is a part of such facilities abuts a parcel which is not a part of such facilities.

**(E) *Submission and Processing Requirements.***

1. ***WIND ENERGY FACILITIES, WIND ENERGY TEST FACILITIES, AND WIND TURBINES, LARGE SCALE AND UTILITY SCALE.*** In addition to the requirements set forth in Section 154.042, applicants for a Special Use Permit for a Wind Energy Facility, Wind Energy Test Facility, and Wind Turbine (Large Scale and Utility Scale) not part of a Wind Energy Facility or Wind Energy Test Facility shall submit the following information.
  - a. The applicant shall submit a site plan prepared by a licensed surveyor or engineer in sufficient detail to show the following:

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- i. Property lines and physical dimensions of the parcel where the Wind Turbine will be located as well as any adjacent parcels.
  - ii. Location, approximate dimensions, and types of major existing structures and resources, including but not limited to residences, businesses, community, government and educational facilities, aviation resources, cultural resources, and natural resources, on the parcel where the Wind Turbine will be located and on adjoining properties at least within 1,000 feet of the boundaries of the proposed project site.
  - iii. Location and elevation of each proposed Wind Turbine.
  - iv. Location of all above ground utility lines, transformers, power lines, interconnection point with transmission lines, and other ancillary facilities or structures on the Site
  - v. Location and size of structures above 35 feet within a radius of no less than 1.5 times the height of the proposed Wind Turbine(s).
  - vi. The zoning designation of the subject and adjacent properties as set forth in the Northampton County Zoning Code.
  - vii. To demonstrate compliance with the setback requirements of this Section, a circle drawn around each proposed tower location with a radius equal to one and a half times the Wind Turbine Height.
  - viii. Location of residential structures within a radius equal to three times the Wind Turbine Height of each proposed tower.
  - ix. Location of all proposed facilities, including access roads, electrical lines, substations, storage or maintenance units, and fencing.
- b. A noise analysis by a licensed acoustical engineer documenting the noise levels expected to be associated with the proposed Wind Turbine(s) shall be submitted as part of the application. The study shall document projected noise levels at property lines and at the nearest residence not on the Site. The noise analysis shall provide pre-existing ambient noise levels and include low frequency noise and vibration projections and potential impacts. The noise analysis shall provide supporting information to demonstrate compliance with the Noise Performance Standards for Wind Turbines.
- c. A fire protection and emergency response plan prepared in consultation with local emergency officials, including but not limited to, the Northampton County Sheriff's Department.
- d. A construction plan including the commencement and completion dates. Such plan shall include routes to be used by construction and delivery vehicles, and the gross weight and height of the maximum delivery vehicle.
- e. The applicant shall conduct and submit a study on potential impacts from blade damage and blade throw, including delineation of blade throw impact zone.

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- f. The applicant shall submit sufficient information on the Wind Turbine's design to demonstrate compliance with wind loading requirements by means of providing a copy of the Wind Turbine's design certificate.
- g. The applicant shall conduct and submit a study on potential shadow flicker. The study shall identify locations where shadow flicker may be caused by the Wind turbines and the expected durations of the flicker at these locations. The study shall identify areas where shadow flicker may interfere with residences and describe measures that shall be taken to eliminate or mitigate the problems, including reduction of Wind Turbine operations during shadow flicker periods.
- h. The project shall meet the National Telecommunications and Information Administration (NTIA) study process and obtain a determination of "No Objection".
- i. The applicant shall submit a dust control plan to be utilized during construction.
- j. The applicant shall submit a vertical drawing of the Wind Turbine showing Wind Turbine Height, blade dimensions, turbine dimensions, tower and turbine colors, ladders, distance between ground and lowest point of any blade, location of climbing pegs, and access doors. One drawing shall be submitted for each Wind Turbine of the same design.
- k. Lighting Plan showing any FAA-required lighting and other proposed lighting. The application should include a copy of the determination by the Federal Aviation Administration to establish required markings and/or lights for the structure, but if such determination is not available at the time of the application, no building permit for any lighted facility may be issued until such determination is submitted.
- l. List of property owners, with their mailing addresses, within 1,500 feet of the boundaries of the proposed project site for notification purposes.
- m. Decommissioning Plan: The applicant shall submit a decommissioning plan, which describes the anticipated life of the project, the cost for removal, evidence of decommissioning funds (bond, insurance, or other guarantee), and the plans for restoring the soils and vegetation on the site after removal of the Wind Turbine. Require the Applicant to annually provide the Board of Supervisors annually with evidence of sufficient decommissioning funds, in the form of a performance bond or surety bond, to allow the County, at no cost to itself, to remove the project in the event that the Applicant fails to comply with its Decommissioning Plan.
- n. The applicant shall provide the County with copies of all studies and information related to birds and bats that are required to be prepared for any other governmental agencies.
- o. The applicant shall provide photo-simulations of proposed wind energy facilities from at least three (3) different locations, as determined by the County, in order to

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illustrate views of the project from property lines, roadways and sensitive receptors (natural areas, recreational areas, etc.) so that visual impacts can be determined.

- p. The applicant shall conduct balloon testing after the submission of the official application at the proposed wind energy facility location for at least two (2) wind turbines. Balloons shall be placed at each site for at least four (4) hours and flown at a height equal to the proposed wind turbine height. The balloon testing date and time shall be advertised in a newspaper of local circulation at least two (2) weeks prior to the actual testing date.
  2. Upon receipt of a Special Use Permit application for a Wind Energy Facility, Wind Energy Test Facility, and/or Large Scale and Utility Scale Wind Turbines, the County shall notify the Department of Defense Energy Siting Clearinghouse and the Department of Defense Regional Environmental Coordinator (DOD REC) Region 3, in addition to other requirements set forth in §154.042 herein.
- (F) *Approval of Special Use Permit for Wind Energy Facilities, Wind Energy Test Facilities and/or Large Scale and Utility Scale Wind Turbines.* In conjunction with the approval of a special use permit for a Large Scale or Utility Scale Wind Turbine, the Board of Supervisors may:
1. Establish a period of time, not to exceed five years, during which construction of the facility must begin and after which the special use permit shall no longer be valid, if such construction has not begun. For purposes of this sub-section 154.116 (F) (1), construction will be considered to have begun once an application for a building permit has been submitted in connection with the facility.
  2. Condition approval of a special use permit, as to any part of the subject property for which a plat of subdivision has been recorded, on the vacation of any such recorded plat of subdivision, if vacation is necessary due to rights of ways, easements, or other rights created by the plat of subdivision which would be in conflict with the proposed facility. If the Board of Supervisors so conditions the special use permit, the subdivision agent of the Board of Supervisors shall consent to such vacation upon delivery to the subdivision agent of a written instrument in compliance with VA Code § 15.2-2271.1, as amended, and with any other requirements of law.
  3. Allow for the phased development of a Wind Energy Facility and Wind Energy Test Facility.
  4. Require the applicant or operator of a Wind Energy Test Facility to engage in or allow third party academic researchers to engage in research and studies on the impacts to avian and bat resources and mitigation measures for those impacts from wind turbines.

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5. Require the applicant to provide the Board of Supervisors with a report on the operations and maintenance of the Wind Energy Facility and Wind Energy Test Facility on an annual basis, including any changes in ownership or operator responsibility.

*Add to Appendix A, Use Tables, "S" at Agricultural/Rural Business District; "S" at Existing Industrial District; "-" in all other Districts.*